

**UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
FINAL CAPE HATTERAS NATIONAL SEASHORE OFF-ROAD VEHICLE MANAGEMENT PLAN /
ENVIRONMENTAL IMPACT STATEMENT**

Cape Hatteras National Seashore, North Carolina

Lead Agency: National Park Service (NPS), U.S. Department of the Interior

This final *Cape Hatteras National Seashore Off-Road Vehicle Management Plan / Environmental Impact Statement* (plan/EIS) evaluates the impacts of a range of alternatives for regulations and procedures that would carefully manage off-road vehicle (ORV) use/access in the Cape Hatteras National Seashore (Seashore) to protect and preserve natural and cultural resources and natural processes, to provide a variety of visitor use experiences while minimizing conflicts among various users, and to promote the safety of all visitors. Executive Order 11644 of 1972, amended by Executive Order 11989 of 1977, requires certain federal agencies permitting ORV use on agency lands to publish regulations designating specific trails and areas for this use. Title 36, section 4.10 of the Code of Federal Regulations implements the executive orders by providing that routes and areas designated for ORV use shall be promulgated as special regulations. Upon conclusion of this plan and decision-making process, the alternative selected for implementation will become the ORV management plan and will form the basis for a special regulation, guiding the management and control of ORVs at the Seashore for the next 10 to 15 years.

This plan/EIS evaluates the impacts of two no-action alternatives (A and B) and four action alternatives (C, D, E and F). Alternative A would manage ORV use and access at the Seashore based on the 2007 Finding of No Significant Impact (FONSI) for the *Cape Hatteras National Seashore Interim Protected Species Management Strategy / Environmental Assessment* and the Superintendent's Compendium 2007, as well as elements from the 1978 draft interim ORV management plan that were incorporated in Superintendent's Order 7. Alternative B would manage ORV use in the same manner as alternative A, except as modified by the consent decree, as amended, which has been in effect at the Seashore since 2008. Alternative C would provide visitors to the Seashore with a degree of predictability regarding areas available for ORV use, as well as vehicle-free areas, based largely on the seasonal resource and visitor use characteristics of various areas in the Seashore. Under alternative D, visitors to the Seashore would have the maximum amount of predictability regarding areas available for ORV use and vehicle-free areas for pedestrian use with most areas having year-round, rather than seasonal, designations. Restrictions would be applied to larger areas over longer periods of time to minimize changes in designated ORV and vehicle-free areas over the course of the year.

Alternative D is the environmentally preferable alternative. Alternative E would provide for additional flexibility in access for both ORV and pedestrian users, including allowing some level of overnight vehicle use at selected points and spits. Where greater access is permitted, often additional controls or restrictions would be in place to limit impacts on sensitive resources.

Alternative F provides a similar mileage of year-round ORV routes as the other action alternatives but provides more ORV and pedestrian access than alternative D by improving interdunal road access and enhancing pedestrian facilities and opportunities.

Alternative F is the NPS Preferred Alternative. The plan/EIS analyzes impacts of these alternatives in detail for floodplains, wetlands, federally listed threatened or endangered species, state-listed and special status species, wildlife and wildlife habitat, visitor use and experience, soundscapes, socioeconomics, and Seashore operations.

The NPS notice of availability for the draft plan/EIS was published in the *Federal Register* on March 5, 2010. The draft plan/EIS was posted online at the NPS PEPC website at <http://parkplanning.nps.gov/caha> on March 5, 2010. The U.S. Environmental Protection Agency (EPA) notice of availability for the draft plan/EIS was published on March 12, 2010, which opened the public comment period and established the closing date of May 11, 2010, for comments. Responses to public and agency comments received on the draft plan/EIS are included as appendix C and, where needed, as text changes in this final plan/EIS. A copy of the original draft plan/EIS showing all additions, deletions, and other changes that have been made in the preparation of this final plan/EIS, including minor editorial changes, is available electronically at <http://parkplanning.nps.gov/caha>.

The publication of the EPA notice of availability of this final plan/EIS in the *Federal Register* will initiate a 30-day wait-period before the Regional Director of the Southeast Region will sign the Record of Decision, documenting the selection of an alternative to be implemented. After the NPS publishes a notice in the *Federal Register* announcing the availability of the signed Record of Decision, implementation of the alternative selected in the Record of Decision can begin.

For further information, visit <http://parkplanning.nps.gov/caha> or contact:

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CAPE HATTERAS NATIONAL SEASHORE OFF-ROAD VEHICLE MANAGEMENT PLAN FINAL ENVIRONMENTAL IMPACT STATEMENT

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EXECUTIVE SUMMARY

This final *Cape Hatteras National Seashore Off-Road Vehicle Management Plan / Environmental Impact Statement* (plan/EIS) analyzes a range of alternatives and actions for the management of off-road vehicles (ORVs) at Cape Hatteras National Seashore (the Seashore). The plan/EIS assesses the impacts that could result from continuation of current management actions in existence during the planning period for this plan/EIS (the two “no-action” alternatives) or implementation of any of the four action alternatives.

Upon conclusion of the planning and decision-making process, the alternative selected for implementation will become the ORV management plan, which will guide the management and control of ORVs at the Seashore for the next 10 to 15 years. It will also form the basis for a special regulation to manage ORV use at the Seashore.

BACKGROUND

Officially authorized in 1937 along the Outer Banks of North Carolina, Cape Hatteras is the nation’s first national seashore. Consisting of more than 30,000 acres distributed along approximately 67¹ miles of shoreline, the Seashore is part of a dynamic barrier island system.

The Seashore serves as a popular recreation destination with more than 2.1 million visitors in 2008 (NPS 2008e), showing an 8-fold increase in visitation since 1955 (NPS 2007f). Seashore visitors participate in a variety of recreational activities, including beach recreation (sunbathing, swimming, shell collecting, etc.), fishing (surf and boat), hiking, hunting, motorized boating, nonmotorized boating (sailing, kayaking, canoeing), nature study, photography, ORV use (beach driving), shellfishing, sightseeing, watersports (surfing, windsurfing, kiteboarding, etc.), and wildlife viewing. Seashore visitors use ORVs for traveling to and from swimming, fishing, and surfing areas and for pleasure driving.

Current management practices at the Seashore allow ORV users to drive on the beach seaward of the primary dune line, with a 10-meter backshore area seaward of the primary dune line protected seasonally. Drivers must use designated ramps to cross between the beach and NC-12 that runs behind the primary dune line. In addition to a multitude of visitor opportunities, the Seashore provides a variety of important habitats created by its dynamic environmental processes, including habitats for the federally listed piping plover; sea turtles; and one listed plant species, the seabeach amaranth. The Seashore contains ecologically important habitats such as marshes, tidal flats, and riparian areas, and hosts various species of concern such as colonial waterbirds (least terns, common terns, and black skimmers), American oystercatcher, and Wilson’s plover, all of which are listed by the North Carolina Wildlife Resources Commission (NCWRC) as species of special concern. In addition, the gull-billed tern, also found at the Seashore, is listed by the NCWRC as threatened.

Historically, beach driving at the Seashore was for the purpose of transportation, and not recreation. The paving of NC-12, the completion of the Bonner Bridge connecting Bodie and Hatteras islands in 1963, and the introduction of the State of North Carolina ferry system to Ocracoke Island facilitated visitor access to the sound and ocean beaches. Improved access, increased population, and the popularity of the sport utility vehicle have resulted in a dramatic increase in vehicle use on Seashore beaches.

¹ Due to the dynamic nature of the barrier island system, the mileage of shoreline in the Seashore is constantly changing. This mileage estimate includes ocean shoreline and some interdunal roads managed for public recreation by the NPS. Actual on-the-ground mileage may vary, especially around the inlets and spits, due to the increased potential for erosion and accretion in these areas.

ORV use at the Seashore has historically been managed since the 1970s through various draft or proposed plans, though none were ever finalized or published as a special regulation as required by Executive Orders 11644 and 11989 and 36 Code of Federal Regulations (CFR) 4.10. Motivated in part by a decline in most beach nesting bird populations on the Seashore since the 1990s, in July 2007 the NPS finalized the *Cape Hatteras National Seashore Interim Protected Species Management Strategy / Environmental Assessment* (Interim Strategy) to provide resource protection guidance until the long-term ORV management plan and regulation could be completed. In October 2007, a lawsuit was filed on the Interim Strategy that resulted in a consent decree in April 2008. As a part of the consent decree, the court ordered deadlines for completion of an ORV management plan/EIS and special regulation. This document, once finalized and approved, will serve as the ORV management plan and will form the basis for the special regulation governing ORV use at the Seashore.

PURPOSE OF THE PLAN

The purpose of this plan is to develop regulations and procedures that carefully manage ORV use/access in the Seashore to protect and preserve natural and cultural resources and natural processes, to provide a variety of visitor use experiences while minimizing conflicts among various users, and to promote the safety of all visitors.

NEED FOR ACTION

Cape Hatteras National Seashore provides a variety of visitor experiences. It is a long, essentially linear park, visitation is high, and parking spaces near roads are limited. Some popular beach sites, particularly those near the inlets and Cape Point, are a distance from established or possible parking spaces. Visitors who come for some popular recreational activities such as surf fishing and picnicking are accustomed to using large amounts and types of recreational equipment that cannot practically be hauled over these distances by most visitors without some form of motorized access. For many visitors, the time needed and the physical challenge of hiking to the distant sites, or for some even to close sites, can discourage or preclude access by nonmotorized means. As a result, ORVs have long served as a primary form of access for many portions of the beach in the Seashore, and continue to be the most practical available means of access and parking for many visitors.

In addition to these recreation opportunities, the Seashore is home to important habitats created by the Seashore's dynamic environmental processes, including habitats for several federally listed species including the piping plover and three species of sea turtles. These habitats are also home to numerous other protected species, as well as other wildlife. The NPS is required to conserve and protect all of these species, as well as the other resources and values of the Seashore. In addition, the Seashore was designated a Globally Important Bird Area by the American Bird Conservancy (American Bird Conservancy 2005). This designation recognizes those areas with populations and habitat important at the global level.

The use of ORVs must therefore be regulated in a manner that is consistent with applicable law, and appropriately addresses resource protection (including protected, threatened, or endangered species), potential conflicts among the various Seashore users, and visitor safety. Section 4.10(b) of the regulations in Title 36 of the Code of Federal Regulations, which implements Executive Orders 11644 and 11989, prohibits off-road use of motor vehicles except on designated routes or areas. It requires that "routes and areas designated for ORV use shall be promulgated as special regulations" in compliance with other applicable laws.

Therefore, in order to provide continued visitor access through the use of ORVs, the NPS must promulgate a special regulation authorizing ORV use at the Seashore. In order to ensure that ORV use is

consistent with applicable laws and policies, the Seashore has determined that an ORV management plan is necessary as part of this process. Thus, the ORV plan and special regulation will

- Bring the Seashore in compliance with Executive Orders 11644 and 11989 respecting ORV use, and with NPS laws, regulations (36 CFR 4.10), and policies to minimize impacts to Seashore resources and values.
- Address the lack of an approved plan, which has led over time to inconsistent management of ORV use, user conflicts, and safety concerns.
- Provide for protected species management in relation to ORV use by replacing the Interim Strategy (NPS 2006a), and associated Biological Opinion and amendments (USFWS 2006a, 2007a, 2008a) as modified by the consent decree.

OBJECTIVES IN TAKING ACTION

MANAGEMENT METHODOLOGY

- Identify criteria to designate ORV use areas and routes.
- Establish ORV management practices and procedures that have the ability to adapt in response to changes in the Seashore's dynamic physical and biological environment.
- Establish a civic engagement component for ORV management.
- Establish procedures for prompt and efficient public notification of beach access status including any temporary ORV use restrictions for such things as ramp maintenance, resource and public safety closures, storm events, etc.
- Build stewardship through public awareness and understanding of NPS resource management and visitor use policies and responsibilities as they pertain to the Seashore and ORV management.

NATURAL PHYSICAL RESOURCES

- Minimize impacts from ORV use to soils and topographic features, for example, dunes, ocean beach, wetlands, tidal flats, and other features.

THREATENED, ENDANGERED, AND OTHER PROTECTED SPECIES

- Provide protection for threatened, endangered, and other protected species (e.g., state-listed species) and their habitats, and minimize impacts related to ORV and other uses as required by laws and policies, such as the *Endangered Species Act*, the *Migratory Bird Treaty Act*, and NPS laws and management policies.

VEGETATION

- Minimize impacts to native plant species related to ORV use.

OTHER WILDLIFE AND WILDLIFE HABITAT

- Minimize impacts to wildlife species and their habitats related to ORV use.

CULTURAL RESOURCES

- Protect cultural resources, such as shipwrecks, archeological sites, and cultural landscapes, from impacts related to ORV use.

VISITOR USE AND EXPERIENCE

- Ensure that ORV operators are informed about the rules and regulations regarding ORV use at the Seashore.
- Manage ORV use to allow for a variety of visitor use experiences.
- Minimize conflicts between ORV use and other uses.

VISITOR SAFETY

- Ensure that ORV management promotes the safety of all visitors.

SEASHORE OPERATIONS

- Identify operational needs and costs to fully implement an ORV management plan.
- Identify potential sources of funding necessary to implement an ORV management plan.
- Provide consistent guidelines, according to site conditions, for ORV routes, ramps, and signage.

PURPOSE AND SIGNIFICANCE OF CAPE HATTERAS NATIONAL SEASHORE

PARK ENABLING LEGISLATION, PURPOSE, AND SIGNIFICANCE

All units of the national park system were formed for a specific purpose (the reason they are significant) and to conserve significant resources or values for the enjoyment of future generations. The purpose and significance of the park provides the basis for identifying uses and values that individual NPS plans will support. The following provides background on the purpose and significance of the Seashore.

As stated in the Seashore's enabling legislation (the Act), Congress authorized the Seashore in 1937 as a national seashore for the enjoyment and benefit of the people, and to preserve the area. The Act states:

Except for certain portions of the area, deemed to be especially adaptable for recreational uses, particularly swimming, boating, sailing, fishing, and other recreational activities of similar nature, which shall be developed for such uses as needed, the said areas shall be permanently reserved as a primitive wilderness and no development of the project or plan for the convenience of visitors shall be undertaken which would be incompatible with the preservation of the unique flora and fauna or the physiographic conditions now prevailing in this area.

The Act also states:

...when title to all the lands, except those within the limits of established villages, within boundaries to be designated by the Secretary of Interior within the area of approximately one hundred square miles on the islands of Chicamacomico [Hatteras], Ocracoke, Bodie, Roanoke, and Collington, and the waters and the lands beneath the waters adjacent there

to shall have been vested in the United States, said areas shall be, and is hereby, established, dedicated, and set apart as a national seashore for the benefit and enjoyment of the people and shall be known as the Cape Hatteras National Seashore.

A 1940 amendment to the enabling legislation authorized hunting and re-designated the area as the Cape Hatteras National Seashore Recreational Area. (Note: The history of the Seashore's name is described in more detail in chapter 1.)

Park significance statements capture the essence of the park's importance to the nation's natural and cultural heritage. Understanding park significance helps managers make decisions that preserve the resources and values necessary to the park's purpose. The following significance statements recognize the important features of the Seashore. As stated in the 2006–2011 Strategic Plan, the Seashore has the following significance (NPS 2007b):

This dynamic coastal barrier island system continually changes in response to natural forces of wind and wave. The flora and fauna that are found in a variety of habitats at the park include migratory birds and several threatened and endangered species. The islands are rich with maritime history of humankind's attempt to survive at the edge of the sea, and with accounts of dangerous storms, shipwrecks, and valiant rescue efforts. Today, the Seashore provides unparalleled opportunities for millions to enjoy recreational pursuits in a unique natural seashore setting and to learn of the nation's unique maritime heritage.

ISSUES AND IMPACT TOPICS

Issues associated with implementing an ORV management plan at Cape Hatteras National Seashore were initially identified by Seashore staff during internal scoping and were further refined through the public scoping and negotiated rulemaking processes. Table ES-1 details the issues that were discussed and analyzed in the plan/EIS.

TABLE ES-1. ISSUES AND IMPACT TOPICS

| Issue | Reason for Analysis |
|--------------------------|---|
| Wetlands and Floodplains | <p>Vegetated wetlands along the soundside and interior of the islands are susceptible to direct damage from ORV use.</p> <p>Estuarine wetlands can be denuded of vegetation when ORVs are driven and parked along the soundside shoreline.</p> <p>Many of the interior or interdunal roads are located near wetland areas that are often not noticeable to visitors. When standing water is present along these ORV routes, visitors may drive over adjacent vegetated areas in an attempt to avoid the standing water. This results in wider roads, new vehicle routes, and crushed or dead vegetation.</p> <p>Construction of new parking areas is of concern for wetlands that may be located nearby.</p> <p>Nearly all of the Seashore is located within the 100-year floodplain, with the exception of a small area at the Navy tower site on Bodie Island and larger areas around Buxton, and could be impacted by the proposed development of ramps and parking areas under this plan/EIS.</p> |

| Issue | Reason for Analysis |
|---|--|
| Federally Listed Threatened or Endangered Species | <p>The Seashore is home to federally threatened and endangered species year-round. Increased year-round visitation results in a greater potential for conflicts between visitor use and listed species. Conflicts between listed species and recreational use (including ORV use) could create direct or indirect losses to a listed species.</p> <p>The Seashore is used by both the threatened Atlantic Coast population of piping plover for breeding and wintering and by the endangered Great Lakes population (considered threatened on its wintering grounds) for wintering. Seabeach amaranth, a federally listed threatened plant species, has been found in limited numbers at the Seashore in the recent past. Three species of federally listed sea turtles (loggerhead, green, and leatherback) nest on Seashore beaches, with loggerhead being the most common.</p> |
| State-Listed and Special Status Species | <p>Habitat for state-listed and special status species, such as the American oystercatcher and several species of colonial waterbirds, may be vulnerable to disturbances caused by recreational uses, including ORV use.</p> <p>The gull-billed tern is a state-listed threatened species in North Carolina. American oystercatcher, Wilson's plover, least tern, common tern, and black skimmer are listed by the NCWRC as species of special concern.</p> <p>In addition, the American oystercatcher is listed as a species of concern by the Southeastern Shorebird Conservation Plan, and both the American oystercatcher and the Wilson's plover are identified in the U.S. Shorebird Conservation Plan as "Species of High Concern." These species are also designated as Birds of Conservation Concern (USFWS 2008b) and/or Migratory Nongame Birds of Management Concern in the United States (USFWS 1995) which qualifies them as species of concern according to Executive Order 13186. All these state-listed or special status species have had historically low reproductive rates.</p> |
| Wildlife and Wildlife Habitat | <p>ORV use along the Seashore can disrupt habitat or cause a loss of habitat in high use areas. Habitat loss due to ORV use could also occur indirectly as a result of the noise and disturbance from this activity, specifically for other bird species (those not federally protected or of special concern) and invertebrates.</p> |
| Soundscapes | <p>Impacts related to soundscapes could occur wherever ORVs are allowed on the oceanside or the soundside. Vehicular noise has the potential to impact other recreational uses, such as bird watching or enjoying the solitude and natural soundscape of the Seashore. In addition to impacting soundscapes in relation to visitor enjoyment, vehicular noise could create unsuitable habitat for Seashore wildlife.</p> |
| Visitor Use and Experience | <p>ORV use at the Seashore is an integral component of the experience for some visitors and may be impacted by ORV management activities. Other Seashore visitors who are not using ORVs may be impacted by ORV use.</p> <p>Although some visitors want to use an ORV to access the Seashore, other visitors wish to engage in recreational activities on foot and away from the presence of motorized vehicles. Restricting ORVs from areas of the Seashore could enhance the recreational experience for some and diminish the experience for others. Visitor experience could be affected by conflicts between motorized and nonmotorized recreation users. A further component of visitor experience is providing for the safety of all visitors at the Seashore.</p> <p>Other issues related to visitor use and experience include viewsheds, aesthetics, and night skies. While the sight of ORVs can destroy the viewshed and aesthetics for some visitors, they also change the viewshed by altering the natural landscape.</p> |
| Socioeconomics | <p>Management or regulation of ORV use at the Seashore could impact the local economy by changing the demand for goods and services from ORV users in these communities. The eight villages located within the Seashore boundaries serve as access points to the Seashore for visitors, including ORV users. These villages receive economic benefit from the ORV users who take advantage of the goods and services these communities offer. The communities are concerned that if a permit system or other ORV restrictions are implemented that make it harder for ORV users to use the area, fewer tourists may come to the villages, resulting in impacts to the local economy.</p> |

| Issue | Reason for Analysis |
|------------------------------------|--|
| Seashore Management and Operations | Accommodating recreational uses while protecting sensitive species requires a sufficient number of personnel and an adequate level of funding. Past anecdotal evidence suggested that the Seashore did not have enough personnel to properly enforce existing ORV management decisions. If operational requirements increase under the new ORV management plan, it would require an increased commitment of limited NPS resources (staff, money, time, and equipment). |

ALTERNATIVES

The *National Environmental Policy Act* (NEPA) requires federal agencies to explore a range of reasonable alternatives that address the purpose of and need for the action. The alternatives under consideration must include the “no-action” alternative as prescribed by 40 CFR 1502.14. Two no-action alternatives are included for analysis in this plan/EIS, because management changed part way through the planning process in May 2008, after the consent decree was signed (see chapter 1 for more information). Action alternatives may originate from the proponent agency, local government officials, or members of the public at public meetings or during the early stages of project development. Alternatives may also be developed in response to comments from coordinating or cooperating agencies.

The alternatives analyzed in this document, in accordance with NEPA, are the result of internal scoping, public scoping meetings, and information developed during the negotiated rulemaking process. These alternatives meet the management objectives of the Seashore, while also meeting the overall purpose of and need for the proposed action. Alternative elements that were considered but were not technically or economically feasible, did not meet the purpose of and need for the project, created unnecessary or excessive adverse impacts to resources, and/or conflicted with the overall management of the Seashore or its resources were dismissed from further analysis.

The elements of all six alternatives are detailed in tables ES-2, ES-2A, and ES-3. How each of these alternatives meets the objectives of the plan/EIS is detailed in table ES-4.

ELEMENTS COMMON TO ALL ALTERNATIVES

The following describes elements of the alternatives that are common to all alternatives, including the no-action alternatives.

- Vehicle/Operator Requirements. Requirements for operators and their vehicles would be established that would require vehicles to meet all requirements to operate legally on state highways where the vehicle is registered, including any required vehicle equipment, as well as for drivers to have a valid vehicle registration, insurance, and license plate. Operators would also be required to observe any law applicable to vehicle use on a paved road in the State of North Carolina, hold a current driver’s license, and use a seatbelt.
- Prohibited Activities. Open containers of any type of alcoholic beverage are prohibited in vehicles and ORV drivers and/or passengers are prohibited from sitting on the tailgate or roof or hanging outside of moving vehicles.
- Right-of-Way Requirements. Right-of-way between vehicles is not defined by the Seashore, and the standard driving rules must be followed.
- Ramp Configuration. If Bonner Bridge construction closes ramp 4, a new ramp 3 would be constructed north of the Oregon Inlet campground and day-use parking would be provided.

- Boat Access. Launch sites, as designated under 36 CFR 3.8(a)(2), are identified in the Superintendent's Compendium. Launching or recovery of vessels is prohibited within resource closures.
- NPS Regulations. Title 36: Parks, Forests, and Public Properties of the U.S. Code of Federal Regulations is applicable in all national parks, including Cape Hatteras National Seashore. These regulations include those in Title 36 applicable to the operation of ORVs in the Seashore and those applicable to individuals recreating at the Seashore. Of particular note are the provisions of 36 CFR 1.5 and 1.6, which state that the superintendent may impose public use limits, or close all or a portion of a park area to all public use or to a specific use or activity; designate areas for a specific use or activity; or impose conditions or restrictions on a use or activity, and may establish a permit, registration, or reservation system.
- Enforcement. Violations could result in fines or mandatory court appearances as defined in the *Collateral Schedule, Eastern District of North Carolina, National Park Service*.
- Areas of Vehicle Operation. Visitors accessing the Seashore by ORV must drive only on marked ORV routes, comply with posted restrictions, and adhere to the following:
 - Driving or parking outside of marked and maintained ORV routes is prohibited.
 - Operating a vehicle of any type within safety or resource closures is prohibited.
 - Accessing the beach and designated ORV routes is allowed only via designated beach access ramps and soundside access roads.
 - Reckless driving—for example, cutting circles or defacing the beach—is prohibited.
 - Observing pedestrian right-of-way is required.
 - During the shorebird and turtle breeding seasons, standard resource protection buffers would apply, which could restrict ORV access to certain areas of the Seashore. Refer to the “Visitor Use and Experience” section in chapter 3 for a description of access closures that occurred during the 2007-2010 seasons.
- Commercial Fishing. Commercial fishing permit holders with ORVs would be allowed to enter administrative and safety closures, but not resource closures or lifeguarded beaches. Two designated commercial fishing access points exist on the soundside of Ocracoke Island, where only vehicular access for commercial fishing is allowed.
- Permitted Uses. Kite flying, kite boards, and ball and Frisbee tossing are prohibited within or above all bird closures.
- Commercial Use Authorization (CUA) permit holders would not need to obtain an ORV permit in addition to the CUA permit. Customers of CUA permit holders who are operating an ORV while with the CUA holder would need to obtain the necessary permit for ORV use. Protected Species Management. In general, because of the dynamic nature of the Seashore beaches and inlets, protected species management could change by location and time; new sites (bars, islands) could require additional management, or management actions may become inapplicable for certain sites (e.g., habitat changes with vegetation growth, new overwash areas). The following would also occur:
 - Areas with symbolic fencing (string between posts) would be closed to recreational access.
 - Data collection would continue to document breeding and nest locations.
 - Essential vehicles could enter restricted areas subject to the guidelines in the Essential Vehicles section of the *U.S. Fish and Wildlife Service Piping Plover (Charadrius melanotos)*,

Atlantic Coast Population, Revised Recovery Plan (USFWS 1996a). Due to the soft sand conditions of the Seashore, essential vehicles would be allowed to travel up to 10 miles per hour (mph).

- Accessibility for Visitors with Disabilities. The Seashore would provide access to visitors with disabilities as follows:
 - Beach access points and boardwalks would be provided at Coquina Beach, the Frisco Boathouse, the Ocracoke Pony Pen, and the Ocracoke day use area.
 - Beach access would be provided through the issuance of special use permits for areas in front of the villages to allow ORVs to transport visitors with disabilities to the beach and then return the vehicle back to the street.
 - Beach wheelchairs could be checked out at each District on a first-come, first-served basis.
- Campgrounds. The Seashore has four campgrounds at Oregon Inlet, Frisco, Cape Point, and Ocracoke. The campgrounds would be open seasonally. Dates the campgrounds open or close would be subject to change.
- Fishing Facilities. Fishing piers are located in Frisco², Avon, and Rodanthe on Hatteras Island, and a marina is located at Oregon Inlet on Bodie Island. These would continue to be available to the public.
- Education and Outreach. The Seashore would continue to conduct education and outreach related to ORV management such as posting signage, putting out resource updates, and notifying the public of what areas of the beach are accessible.

NO-ACTION ALTERNATIVES

The no-action alternative is developed for two reasons. First, a no-action alternative may represent the agency's past and current actions or inaction on an issue continued into the future, which may represent a viable alternative for meeting the agency's purpose and need. Second, a no-action alternative may serve to set a baseline of existing impacts continued into the future against which to compare the impacts of action alternatives. For most agency decisions, one no-action alternative can serve both of these purposes. Here, however, the situation is more complex.

As stated in chapter 1, “in order to provide continued visitor access through the use of ORVs, NPS must promulgate a special regulation authorizing ORV use at the Seashore,” and the purpose of this plan, in part, is to develop such a regulation. Without a special regulation, continued ORV use would conflict with NPS regulations (36 CFR 4.10). The consent decree recognizes this and sets a deadline of April 1, 2011, for the promulgation of a final special regulation. As the district court has recognized in another case, absent an ORV plan and regulation, as a legal matter ORV use is prohibited. The NPS acknowledges that if it does not promulgate a special regulation to authorize ORV use, then ORV use would, in fact, be prohibited at the Seashore.

“No ORV use” thus could represent a result of NPS’s past inaction continued into the future, and thus might satisfy the first purpose of a no-action alternative. It is not, however, a viable alternative for meeting the purpose and need for this action. It was considered but dismissed in the broader range of

² The Frisco pier was closed for public safety reasons due to deteriorating conditions, and then further damaged by Hurricane Earl in September 2010. The future of this pier is not known at this time.

alternatives that were identified. Included in chapter 1 is a discussion of the reasons that, for this plan/EIS, “Prohibit the Use of Off-Road Vehicles” is not considered a reasonable alternative.

NPS also does not believe that a “no ORV use” alternative would fully serve the function of a no-action alternative, because it would not satisfy the second purpose. It would not serve as an environmental baseline of existing impacts continued into the future against which to compare the impacts of action alternatives. ORV use has occurred continuously before and since the Seashore was authorized and established. Given this history, a complete ORV prohibition cannot be considered as the “current management direction or level of management intensity” or as “continuing with the present course of action,” which is how the Council on Environmental Quality describes this role of the “no-action” alternative under NEPA.

Because there is no history of prohibition at the Seashore, there are also no Seashore monitoring data for an analysis of its effects. Extrapolation from other sites that prohibit ORV use, and from experience with resource closures in limited locations and limited times at the Seashore, indicates that prohibition would likely benefit the Seashore’s wildlife more than the other alternatives, though benefits could be similar to those from alternative D. Prohibition would be easier for the Seashore to administer than the other alternatives, though it might increase the need for additional parking areas, with their attendant costs and effects. It would detract from the experience of those visitors who prefer ORVs for access, while enhancing the experience of other visitors who prefer beaches without the presence of vehicles. Prohibition would adversely affect the economies of the villages in the Seashore more than the other alternatives because ORV users would not have the opportunity to shift their visits to different areas of the Seashore or to different dates or times of day when driving would be allowed. These conclusions, however, are largely speculative and cannot substitute for a baseline of existing impacts.

Similarly, using the management measures enforced in 2004 (which were adopted from the 1978 draft plan) as a no-action alternative would fail to meet the agency’s purpose and need to regulate ORVs in a manner that is consistent with applicable law, and would not appropriately address resource protection (including protected, threatened, or endangered species), potential conflicts among the various Seashore users, and visitor safety. In addition, it would neither bring the Seashore into compliance with the criteria of Executive Orders 11644 and 11989 for designation of ORV routes nor meet the second purpose of a “no-action” alternative to serve as a baseline of existing impacts continued into the future against which to compare the impacts of action alternatives.

For this plan/EIS the range of alternatives includes two no-action alternatives. Alternative A represents continuing management as described in the Interim Strategy. This management strategy was challenged in court and subsequently modified by the consent decree that was signed on April 30, 2008. Alternative B represents continuing management as described in the consent decree. These two no-action alternatives are analyzed to capture the full range of management actions that occurred and are currently occurring during the planning process for this plan/EIS. Tables ES-2, ES-2A, and ES-3 compare the actions that would be taken under each alternative, and figure 2 in chapter 2 includes the maps of all alternatives.

NO-ACTION ALTERNATIVES

Alternative A – No Action: Continuation of Management under the Interim Protected Species Management Strategy. Under this no-action alternative, management of ORV use and access at the Seashore would be a continuation of management based on the 2007 FONSI for the Interim Strategy and the Superintendent’s Compendium 2007, as well as elements from the 1978 draft interim ORV management plan that were incorporated in Superintendent’s Order 7. The Interim Strategy provides direction on the how, when, and where closures and buffers for federally listed species are established, and the size of buffers/closures. Buffer sizes for non-listed species allow some degree of flexibility and

management discretion. There would be no restriction on night driving or carrying capacity established under alternative A and an ORV permit would not be required. Seasonal ORV closures would be limited to the “village beaches” and the ocean and inlet shoreline and on the exiting soundside routes would be a potential ORV route.

Alternative B – No Action: Continuation of Terms of the Consent Decree Signed April 30, 2008, and amended June 4, 2009. Under alternative B, management of ORV use would follow the terms described under alternative A, except as modified by the provisions of the consent decree, as amended. Modifications in the consent decree include earlier and more frequent monitoring at key nesting areas and larger, non-discretionary resource protection buffers when breeding activity is observed. These modifications would result in earlier, larger, and longer-lasting ORV and pedestrian closures than alternative A. Alternative B would also prohibit night driving from 10:00 p.m. to 6:00 a.m. May 1 to September 15 and would allow night driving with a permit from September 16 to November 15. No carrying capacity would be established or ORV use permit required under alternative B, except for the night-driving permit from September 16 to November 15.

ACTION ALTERNATIVES

Elements that are common to all action alternatives include the following:

- ORV routes and areas would be officially designated in accordance with the executive orders.
- Year-round ORV routes and areas would be designated only in locations without sensitive resources or high pedestrian use.
- Year-round vehicle-free areas would be designated.
- Management of protected shorebirds would be accomplished through the implementation of defined prenesting closures and breeding/nesting/unfledged chick buffers as detailed in chapter 2 (see tables 10 and 10-1). Management activities during the breeding season would focus on beach-nesting bird species such as the piping plover, Wilson’s plover, American oystercatcher, least tern, common tern, gull-billed tern, and black skimmer; however, there would be ongoing evaluation of the breeding shorebird species addressed by this plan as part of the periodic review process.
- Night-driving restrictions would be in effect from May 1 through November 15, which corresponds with turtle nesting season.
- ORV permits would be required and would involve a fee and education requirement.
- Overcrowding would be addressed using various methods for establishing carrying capacity.
- New vehicular access points and/or new or expanded parking areas would be identified.
- Commercial fishing vehicles would be exempted from some ORV restrictions, when not in conflict with resource protection.

Alternative C – Seasonal Management. Alternative C would provide visitors to the Seashore with a degree of predictability regarding areas available for ORV use, as well as vehicle-free areas, based largely on the seasonal resource and visitor use characteristics of various areas in the Seashore. Both seasonal and year-round ORV routes would be established, although most areas would have a seasonal focus. SMAs and some village beaches would be closed to ORV use from March 14 through October 14. Pedestrians would be able to access some SMAs depending upon specific shorebird breeding activity. Most of the seasonal ORV areas would be open to ORVs from October 15 through March 14. Seasonal night-driving

restrictions would be established between the hours of 7:00 p.m. and 7:00 a.m. from May 1 to November 15. An ORV carrying capacity would be established using a maximum number of vehicles per mile of beach area.

Alternative D – Increased Predictability and Simplified Management. Alternative D is the Environmentally Preferable Alternative. Under alternative D, visitors to the Seashore would have the maximum amount of predictability regarding areas available for ORV use and vehicle-free areas for pedestrian use. Restrictions would be applied to larger areas over longer periods of time to minimize changes in designated ORV and vehicle-free areas over the course of the year. To provide predictability under this alternative, only year-round ORV routes would be designated. Year-round vehicle-free areas would include all of the SMAs and village beaches. SMAs would be closed to pedestrian use under Management Level 1 (ML1) measures during the breeding season. Seasonal night-driving restrictions would be established between the hours of 7:00 p.m. and 7:00 a.m. from May 1 to November 15. An ORV carrying capacity would be addressed solely by the use of vehicle stacking limits (one vehicle deep).

Alternative E – Variable Access and Maximum Management. Alternative E would provide use areas for all types of visitors to the Seashore with a wide variety of access for both ORV and pedestrian users, but often with controls or restrictions in place to limit impacts on sensitive resources. Interdunal road and ramp access would be improved, and more pedestrian access would be provided through substantial additions to parking capacity at various key locations that lend themselves to walking on the beach. This alternative would close the SMAs to ORV use from March 15 through August 31, except that two spits and Cape Point would have initial ORV access corridors during the breeding season, with increased species monitoring in those areas. These ORV access corridors would close when breeding activity is observed. North Ocracoke Spit would be designated as a vehicle-free area year-round under alternative E, and village beaches would be closed to ORV use between April 1 and October 31. A seasonal night-driving restriction would be established from 10:00 p.m. to 6:00 a.m. during turtle nesting season although areas with low densities of turtle nests could open to night driving from September 16 through November 15. This alternative would offer a park-and-stay overnight option for ORVs at some spits and Cape Point during the turtle nesting season. Self-contained vehicle (SCV) camping would be allowed during the off-season at designated Seashore campgrounds under the terms of a permit. Alternative E would provide enhanced options for pedestrian access to Bodie Island Spit and South Point Ocracoke by promoting water taxi service when those areas are closed to ORVs.

Alternative F – The NPS Preferred Alternative. The NPS considered a variety of concepts and measures that either originated during the negotiated rulemaking process from members of the negotiated rulemaking advisory committee (Committee) or were discussed during Committee, subcommittee, or work group sessions. Although the Committee as a whole did not reach a consensus on a recommended alternative, in creating this action alternative the NPS made management judgments as to which combination of concepts and measures would make an effective overall ORV management strategy. This alternative is designed to provide visitors to the Seashore with a wide variety of access opportunities for both ORV and pedestrian users. Alternative F would provide a reasonably balanced approach to designating ORV routes and vehicle-free areas and providing for the protection of park resources. To support access to both vehicle-free areas and designated ORV routes, alternative F would involve the construction of new parking areas, pedestrian access trails, ORV ramps, and improvements and additions to the interdunal road system. A seasonal night-driving restriction would be established from 9:00 p.m. to 7:00 a.m. during turtle nesting season although areas with no turtle nests could open to night driving from September 16 through November 15. Alternative F would provide for an alternative transportation study and would encourage the establishment of a beach shuttle or water taxi.

Based in part on public and agency comments on the draft plan/EIS, this alternative has been modified within the range of alternatives described in the draft plan/EIS.

Table ES-2 indicates the designated routes and areas under alternatives A, B, C, D, and E. Table ES-2A indicates the designated routes and areas under alternative F.

ENVIRONMENTAL CONSEQUENCES

Impacts of the alternatives were assessed in accordance with NPS Director's Order 12 and Handbook: Conservation Planning, Environmental Impact Analysis and Decision-Making. This handbook requires that impacts on park resources be analyzed in terms of their context, duration, and intensity. The analysis provides the public and decision-makers with an understanding of the implications of ORV management actions in the short and long term, cumulatively, and within context, based on an understanding and interpretation by resource professionals and specialists.

For each impact topic, methods were identified to measure the change in the Seashore's resources that would occur with the implementation of each management alternative. Thresholds were established for each impact topic to help understand the severity and magnitude of changes in resource conditions, both adverse and beneficial.

Each management alternative was compared to baselines to determine the context, duration, and intensity of resource impacts. The baselines are the conditions that resulted from management of ORVs under the management frameworks in place during the planning process for this plan/EIS. The baselines are represented by alternatives A and B.

Table ES-5 summarizes the results of the impact analysis for the impact topics that were assessed.

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TABLE ES-2. OFF-ROAD VEHICLE ROUTES AND AREAS – ALTERNATIVES A, B, C, D, AND E

| Oceanside Location | Mileage ^a | Alternatives A and B: No Action | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management |
|---|----------------------|---|--|---|---|
| Bodie Island (north to south) Ramp 1 to north end of Coquina Beach | 0.9 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). | ORV route—Mar 15 to Oct 14 VFA—Oct 15 to Mar 14 | X | X Parking at ramp 1 expanded. |
| North end of Coquina Beach to 0.5 mile south of Coquina | 0.8 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). South of ramp 2 at Coquina Beach open seasonally. | X Ramp 2 relocated approx. 0.5 mile south of Coquina Beach. | X Ramp 2 relocated approx. 0.5 mile south of Coquina Beach. | X Ramp 2 relocated approx. 0.5 mile south of Coquina Beach. Parking at Coquina Beach expanded. |
| 0.5 mile south of Coquina to 0.2 mile south of ramp 4 (Includes beach in front of Oregon Inlet Campground. If Bonner Bridge construction closes ramp 4, new ramp 3 will be constructed north of campground and day-use parking and trailhead near campground will be provided.) | 2.1 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR ORV pass-through zone established on upper beach in front of campground when campground is open. |
| 0.2 mile south of ramp 4 to inlet to southwest edge of Bait Pond (Species Management Area) | 1.9 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 Area closed to ORVs from March 15 to October 14. When prenesting area is established, a pedestrian access corridor would be allowed along ocean shoreline to the inlet. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. (ML2) | X (ML1) | ORV route YR With expected limited access Mar 15 to Aug 31 When prenesting area is established, ORV corridor with pass-through zone would be allowed along ocean shoreline to the inlet. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. Pedestrian trail to inlet from new parking near campground established. Trail subject to resource closures. NPS would allow water taxi service to spit from Oregon Inlet Fishing Center, subject to designated landing zone and to resource closures. (ML2) |
| Hatteras Island (north to south) Rodanthe–Waves–Salvo to ramp 23 (includes Tri-Village beaches) | 5.3 | OPEN ^b Seasonally closed May 15 to Sep 15. | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 Parking at ramp 23 expanded. | X | ORV route—Nov 1 to Mar 31 VFA—Apr 1 to Oct 31 Parking at ramp 23 expanded. |
| Ramp 23 to ramp 27 | 4.3 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR One new ramp with parking established at 24 or 26. |
| Ramp 27 to ramp 30 (Species Management Area) | 2.2 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | X (ML1) |
| Ramp 30 to (new) ramp 32.5 | 2.5 | OPEN YR ^b | ORV route YR New ramp with parking established at 32.5. | ORV route YR New ramp established at 32.5. | ORV route YR New ramp with parking established at 32.5. |
| (New) ramp 32.5 to ramp 34 (Species Management Area) | 1.8 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | ORV route—Sep 1 to Mar 14 VFA—Mar 15 to Aug 31 (ML1) |
| Ramp 34 to ramp 38 (includes Avon Village Beach) | 3.9 | OPEN ^b Seasonally closed May 15 to Sep 15. | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 | X | ORV route—Nov 1 to Mar 31 VFA—Apr 1 to Oct 31 Parking at ramp 34 expanded. |
| Ramp 38 to approx. 1.7 miles south | 1.7 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR Parking at ramp 38 expanded. |
| Approximately 1.7 miles south of ramp 38 (i.e., Haulover) to Buxton line (Species Management Area) | 2.0 | OPEN YR ^b (Current 3.8-mile safety closure from 1.8 miles south of ramp 38 to 0.4 mile north of ramp 43.) | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | ORV route—Sep 1 to Mar 14 VFA—Mar 15 to Aug 31 (ML1) |
| Buxton Village Beach to 0.4 mile north of ramp 43 | 1.9 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). | X NPS or Dare County to establish new parking at old Coast Guard Station site (following Coast Guard clean-up of the site). | X | ORV route—Nov 1 to Mar 31 VFA—Apr 1 to Oct 31 NPS or Dare County to establish new parking at old Coast Guard Station site (following Coast Guard clean-up of the site). |

| Oceanside Location | Mileage ^a | Alternatives A and B: No Action | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management |
|--|----------------------|--|---|---|--|
| 0.4 mile north of ramp 43 to ramp 43 | 0.4 | OPEN ^b Subject to seasonal closure May 15 to Sep 15. | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 | X | ORV route—Mar 15 to Aug 31 VFA—Sep 1 to Mar 14 Open to ORVs only when east side of Cape Point is closed. |
| Ramp 43 to 0.2 mile south of ramp 44 | 0.6 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| 0.2 mile south of ramp 44 to Cape Point to approx. 0.2 mile west of the hook (Species Management Area) | 1.0 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 When prenesting area is established, a pedestrian access corridor would be allowed along ocean shoreline to the point. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. (ML2) | X (ML1) | ORV route YR With expected limited access Mar 15 to Aug 31 When prenesting area is established, ORV access corridor with pass-through zone would be allowed along ocean shoreline to the point. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. (ML2) |
| Cape Point 0.2 mile west of the hook to ramp 45 (Species Management Area) | 1.2 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | ORV route—Sep 1 to Mar 14 VFA—Mar 15 to Aug 31 (ML1) |
| Ramp 45 to (new) ramp 47 (Species Management Area) | 1.7 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 Interdunal road extended and new ramp 47 established. (ML1) | X (ML1) | ORV route—Sep 1 to Mar 14 VFA—Mar 15 to Aug 31 Interdunal road extended and new ramp 47 established. (ML1) |
| (New) ramp 47 to ramp 49 (includes beach in front of Frisco Campground) | 1.7 | OPEN YR ^b | ORV route YR Interdunal road extended to ramp 49 and new ramp 48 established. | ORV route YR | ORV route YR ORV pass-through zone established on upper beach in front of campground (or bypass beach in front of campground via new interdunal road) when campground is open. Interdunal road extended west of new ramp 47 to ramp 49 and new ramp 48 established. |
| Ramp 49 to East Frisco boundary | 1.2 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| Frisco Village Beach (east village boundary to west boundary) | 1.1 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 | X | X Parking at day use area expanded. |
| Sandy Bay / Frisco day use area (west Frisco boundary to east Hatteras Village boundary) | 1.4 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 | X | X |
| Hatteras Village Beach (east boundary to ramp 55) | 2.2 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 | X | X |
| Ramp 55 along ocean beach to 0.2 mile southwest of Bone Road | 1.8 | OPEN YR ^b | ORV route YR Parking expanded at ramp 55. | ORV route YR | ORV route YR Parking expanded at ramp 55. |
| Pole Road from NC-12 past Cable Crossing access to Spur Road | 2.3 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| Cable Crossing along sound shoreline to Spur Road | 0.8 | Varies | X | X | X |
| Spur Road along sound shoreline to Hatteras Inlet | 0.2 | OPEN YR ^b | ORV route YR Pedestrian access to the "rip" permitted from soundside during breeding season, subject to resource closures. | X | ORV route YR Pedestrian access to the "rip" permitted from soundside during breeding season, subject to resource closures. |
| Ocean shoreline from 0.2 mile southwest of Bone Road (a.k.a. Fort Clark Spur) to inlet (Species Management Area) | 1.0 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | ORV route—Sep 1 to Mar 14 VFA—Mar 15 to Aug 31 (ML1) |

Table ES-2. Off-Road Vehicle Routes and Areas – Alternatives A, B, C, D, and E

| Oceanside Location | Mileage ^a | Alternatives A and B: No Action | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management |
|---|----------------------|---|---|---|---|
| Ocracoke Island (north to south) Inlet to 0.25 mile northeast of ramp 59 (Species Management Area) | 1.1 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 Parking area at ramp 59 expanded. (ML1) | X (ML1) | X Parking area at ramp 59 expanded. Pedestrian access corridor(s) provided, subject to resource closures during breeding season. Pedestrian boardwalk access from ferry terminal parking developed. (ML1) |
| 0.25 mile northeast of ramp 59 to 0.25 mile southwest of ramp 59 | 0.5 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| 0.25 mile southwest of ramp 59 to new ramp 62 at 3.0 miles northeast of Pony Pen area | 2.4 | OPEN YR ^b (Longstanding safety closure.) | ORV route YR | ORV route YR | ORV route YR |
| New ramp 62 to new ramp 64 at 1.0 mile northeast of Pony Pen | 2.0 | OPEN YR ^b (Longstanding safety closure.) | ORV route YR New ramps 62 and 64 established. Parking established at ramp 64. | ORV route YR New ramps 62 and 64 established. | ORV route YR New ramps 62 and 64 established. Parking established at ramp 64. |
| New ramp 64 at 1.0 mile northeast of Pony Pen to 0.75 mile northeast of ramp 67 | 2.3 | OPEN YR ^b (Longstanding safety closure.) | X Parking at Pony Pen expanded. | X | X Parking at Pony Pen expanded. |
| 0.75 mile northeast of ramp 67 to 0.5 mile northeast of ramp 68 | 1.4 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| 0.5 mile northeast of ramp 68 to 0.5 mile southwest of ramp 68 (Ocracoke Campground area) | 1.0 | OPEN YR ^b Seasonally closed when campground open. | Seasonal ORV route Open when campground closed. | X | ORV route—Nov 1 to Mar 31 VFA—Apr 1 to Oct 31 |
| 0.5 mile southwest of ramp 68 to 1.2 miles northeast of ramp 70 (Species Management Area) | 0.9 | OPEN YR ^b Seasonally closed when campground open. | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | X (ML1) |
| 1.2 miles northeast of ramp 70 to 0.5 mile northeast of ramp 70 (includes Ocracoke day use area) | 0.8 | OPEN YR ^b Seasonally closed when campground open. | X | X | X |
| 0.5 mile northeast of ramp 70 to 0.5 mile southwest of ramp 72 | 2.7 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| 0.5 mile southwest of ramp 72 to inlet (Species Management Area) | 1.3 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 When prenesting area is established, a pedestrian access corridor would be allowed along ocean shoreline to the inlet. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. (ML2) | X (ML1) | ORV route YR With expected limited access Mar 15 to Aug 31 When prenesting area is established, ORV access corridor with pass-through zone would be allowed along ocean shoreline to the inlet. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. NPS would also allow water taxi service to spit from Silver Lake, subject to designated landing zone and resource closures. (ML2) |
| Inlet shoreline along South Point | 1.0 | OPEN YR ^b | X | X | X |

| Oceanside Location | Mileage ^a | Alternatives A and B: No Action | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management |
|--------------------|----------------------|---------------------------------|------------------------------------|---|---|
|--------------------|----------------------|---------------------------------|------------------------------------|---|---|

NOTES: Details on soundside access provided in table 8. Due to updated base mapping, the shape of the inlets and spits was updated for alternative F maps, resulting in a slight difference in mileage between alternative F and the other alternatives (see table 7-1).

^a All mileages are approximate.

^b Area(s) open to ORV use, except when resource, seasonal, or safety closures are in effect.

Designated ORV routes and areas (ORV route = ORV permitted, X = VFA (vehicle-free area); YR = year-round).

All ORV routes and areas subject to temporary resource closures.

Species Management Areas (SMAs): ML1 and ML2 are the two proposed strategies for species management. See table 10 for a detailed description of these strategies. All areas outside of designated SMAs would be managed under ML1 protocols.

(ML1) Once prenesting closures are established, ORV and pedestrian access would be prohibited until breeding activity is completed.

(ML2) Once prenesting closures are established, ORV or pedestrian access corridor(s) and/or boat landing areas (as indicated in the respective alternatives) would be permitted. Upon the first observation of breeding activity, similar ML2 buffers would apply, which depending upon the circumstances may close the access corridor.

| Designated ORV Route Mileage (Approximate) ^f | Alternative A ^c | Alternative B ^c | Alternative C | Alternative D | Alternative E |
|---|----------------------------|----------------------------|---------------|---------------|---------------|
| Designated as ORV route YR | 49.4 | 50.1 | 27.4 | 27.2 | 31.6 |
| Designated for seasonal ORV use | 17.9 | 16.2 | 27.0 | 0 | 20.2 |
| Designated as Vehicle-Free Area YR (X) ^e | 0 ^d | 1.0 | 12.9 | 40.1 | 15.5 |
| Total | 67.3 | 67.3 | 67.3 | 67.3 | 67.3 |

^c Routes under alternatives A and B have not been officially designated for ORV use. The mileages shown in this table are based on areas open to ORV use under the Interim Protected Species Management Strategy and the consent decree.

^d Does not include mileage closed for safety reasons.

^e Miles designated as closed to ORV year-round do not include the 12 miles at Pea Island National Wildlife Refuge where vehicles are not permitted. Including the mileage of Pea Island, areas designated closed to ORVs year-round would be as follows: Alternative C = 24.9; Alternative D = 52.1; Alternative E = 27.5

TABLE ES-2A. OFF-ROAD VEHICLE ROUTES AND AREAS – ALTERNATIVE F

| Oceanside Location | Mileage | Alternative F: Preferred Alternative |
|--|---------|--|
| Bodie Island (north to south) Ramp 1 to 0.5 miles south of Coquina Beach | 1.7 | X Parking at old Bodie Island Coast Guard Station site (use existing asphalt-paved parking area, or resurface using pervious material after site is used as a potential staging area for proposed widening and repaving of NC12) |
| 0.5 mile south of Coquina to 0.2 mile south of ramp 4 | 2.1 | ORV route YR New ramp with parking at 2.5. |
| 0.2 mile south of ramp 4 to southeast corner of Bodie Island spit | 1.1 | ORV route—Sep 15 to Mar 14 X—Mar 15 to Sep 14 New parking area and trailhead near ramp 4, with pedestrian trail to the “flats” on the northeast side of the Bait Pond. |
| Southeast corner of Bodie Island spit along inlet shoreline to southwest edge of Bait Pond (near bridge) | 0.8 | X |
| Hatteras Island (north to south) Rodanthe boundary to 0.1 mile south of Rodanthe pier | 1.6 | X |
| 0.1 mile south of Rodanthe Pier–Waves–Salvo to ramp 23 | 3.7 | ORV route—Nov 1 to Mar 31 X—Apr 1 to Oct 31 |
| Ramp 23 to 1.5 miles south of ramp 23 | 1.5 | X New parking 1.0 mile south of ramp 23. |
| 1.5 miles south of ramp 23 to ramp 27 | 2.8 | ORV route YR. New ramp with parking at 25.5. |
| Ramp 27 to ramp 30 | 2.2 | X New parking near soundside ramp 48. |
| Ramp 30 to (new) ramp 32.5 | 2.3 | ORV route YR |
| (New) ramp 32.5 to ramp 34 | 2.0 | X New parking near soundside ramp 52. |
| Ramp 34 to ramp 38 (includes Avon Village Beach) | 3.9 | ORV route—Nov 1 to Mar 31 X—Apr 1 to Oct 31 |
| Ramp 38 to 1.5 miles south of ramp 38 (i.e., Haulover) | 1.5 | ORV route YR |
| 1.5 miles south of ramp 38 (i.e., Haulover) to 0.4 mile north of ramp 43 (includes Buxton) | 4.1 | X New parking area on west side of highway at or near Kite Point New parking area on west side of highway at or near soundside ramp 60 NPS or Dare County to establish new parking at old Coast Guard Station site (following Coast Guard clean-up of the site) New parking area at Loran Road |
| 0.4 mile north of ramp 43 to Cape Point to 0.3 miles west of the hook | 2.1 | ORV route YR Existing interdunal road Cape Point south of Salt Pond at the narrows |
| 0.3 mile west of the hook (Cape Point) to 1.7 miles west of ramp 45 | 2.8 | X |
| 1.7 miles west of ramp 45 to the east Frisco boundary (includes ramp 49) | 2.9 | ORV route YR Interdunal road extended from ramp 45 to ramp 49, with new ramp 47.5. |
| Frisco Village Beach (east village boundary to west boundary) | 1.1 | ORV route—Nov 1 to Mar 31 X—Apr 1 to Oct 31 |
| Sandy Bay / Frisco day use area (west Frisco boundary to east Hatteras Village boundary) | 1.4 | X |

| Oceanside Location | Mileage ^a | Alternative F: Preferred Alternative |
|---|----------------------|---|
| Hatteras Village Beach (east boundary to ramp 55) | 2.2 | ORV route—Nov 1 to Mar 31 X—Apr 1 to Oct 31 |
| Ramp 55 along ocean beach to Bone Road | 1.6 | ORV route YR |
| Bone Road to Hatteras Inlet, along inlet shoreline to Spur Road | 1.0 | X |
| Pole Road from NC-12 to Spur Road | 2.3 | ORV route YR |
| Cable Crossing route (from Pole Road to sound) | 0.2 | ORV route YR |
| Spur Road route (from Pole Road to sound) | 0.4 | ORV route YR |
| (New) interdunal road from eastern portion of Spur Road west toward inlet | 0.2 | ORV route—Sep 15 to Mar 14 X—Mar 15 to Sep 14 |
| Ocracoke Island (north to south) Inlet to (new) ramp 59.5 | 1.6 | X |
| (New) ramp 59.5 to (new) ramp 63 | 3.9 | ORV route YR New parking area on west/north side of the highway at or near the entrance to Barrow Pit Road |
| (New) ramp 63 to 1.0 mile northeast of ramp 67 | 2.5 | X |
| 1.0 mile northeast of ramp 67 to 0.5 mile northeast of ramp 68 | 1.7 | ORV route YR |
| 0.5 mile northeast of ramp 68 to ramp 68 (Ocracoke Campground area) | 0.5 | ORV route—Nov 1 to Mar 31 X—Apr 1 to Oct 31 |
| Ramp 68 to 0.4 miles northeast of ramp 70 (includes Ocracoke Day Use area) | 2.2 | X |
| 0.4 mile northeast of ramp 70 to Ocracoke Inlet (includes ramp 72) | 4.1 | ORV route YR |
| Inlet shoreline along South Point | 1.0 | X |

NOTES: Details on soundside access provided in table 8. Parking areas indicated above would be accessible to 2-wheel drive vehicles.

All mileages are approximate.

Designated ORV routes and areas (ORV route = ORV use permitted; X = VFA (vehicle-free area); YR = year-round).

ORV routes are subject to safety closures and temporary resource closures. VFAs are subject to temporary resource closures.

| Designated ORV Route Mileage (Approximate ^a) | Alternative F |
|--|-----------------|
| Designated as ORV Route YR | 27.9 |
| Designated for seasonal ORV use | 12.7 |
| Designated as vehicle-free area YR (X) ^b | 26.4 |
| Total | 67 ^c |

^a All mileages are approximate

^b Miles designated as vehicle-free area year-round does not include the 12-miles at Pea Island National Wildlife Refuge where vehicles are not permitted. Including the mileage of Pea Island, areas designated closed to ORVs year-round would equal 38.4 miles under alternative F.

^c Due to updated base mapping, the shapes of the inlets and spits were updated for maps of alternative F, resulting in a slight difference in mileage between alternative F and the other alternatives.

TABLE ES-3. SUMMARY OF ALTERNATIVE ELEMENTS

This matrix is designed to display differences among alternatives; therefore, actions common to all alternatives are not included in it. Refer to the "Elements Common to All Alternatives" section, which begins on page 56 of chapter 2.

| Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|--|---|---|--|--|--|
| ORV Routes, Use Areas, and Corridors | | | | | |
| <p>ORV use areas: All areas of the Seashore are potentially open to ORV access, except when closed as described in Superintendent's Order 7. Visitors accessing the Seashore by ORV must drive only on marked ORV routes and must comply with posted restrictions. Refer to table 7.</p> <p>ORV corridors: The ORV corridor on the ocean beach is marked by posts placed approx. 150 feet landward from the average, normal high tide line, or if less than 150 feet of space is available, at the vegetation or the toe of the remnant dune line, except as noted in the Interim Strategy. The corridor width will fluctuate over time due to the dynamic nature of beach and surf.</p> | <p>ORV use areas: Same as alternative A.</p> <p>ORV corridors: Same as alternative A, except: Mar 15 to Nov 30: In all locations not in front of the villages that are open to ORV use, NPS shall provide an ORV-free zone in the ocean backshore at least 10 meters wide, wherever there is sufficient beach width to allow an ORV corridor of at least 20 meters above the mean high tide line.</p> | <p>ORV routes: ORV access would be prohibited in all areas of the Seashore except where an ORV route is specifically designated. An ORV route is a designated location, typically linear in nature (e.g., from point A to point B), where ORV travel may be authorized by the Superintendent, but which may be temporarily closed to ORV use to protect Seashore resources, provide for visitor safety, or prevent user conflicts. Refer to table 7.</p> <p>ORV corridors: An ORV corridor is the actual physical demarcation of the ORV route in the field. The ORV corridor on the ocean beach would be marked by posts seaward of the toe of dune or vegetation line to the high tide line (the seaward side of the corridor would not be posted). ORV routes through vegetated areas, such as interdunal roads and ramps, would be posted on both sides of the corridor.</p> <p>Seasonally designated ORV routes: These would occur as indicated in table 7.</p> | <p>ORV routes: ORV access would be prohibited in all areas of the Seashore except where an ORV route is specifically designated. The definition of ORV route is same as for alternative C.</p> <p>ORV corridors: Same as alternative C.</p> <p>Seasonally designated ORV routes: No seasonal designations under this alternative.</p> | <p>ORV routes: ORV access would be prohibited in all areas of the Seashore except where an ORV route is specifically designated. The definition of ORV route is same as for alternative C.</p> <p>ORV corridors: Same as alternative C, except: Mar 15 to Aug 31: Where the ocean beach is at least 30 meters wide above the high tide line, the corridor would be posted 10 meters seaward of the toe of the dune to provide an ocean backshore closure.</p> <p>Seasonally designated ORV routes: These would occur as indicated in table 7.</p> | <p>ORV routes: ORV access would be prohibited in all areas of the Seashore except where an ORV route is specifically designated. The definition of ORV route is same as for alternative C.</p> <p>ORV corridors: Same as alternative C, except: Year-round: Where the ocean beach is at least 30 meters wide above the high tide line, the corridor would be posted 10 meters seaward of the toe of the dune to provide an ocean backshore closure.</p> <p>Seasonally designated ORV routes: These would occur as indicated in table 7-1.</p> |

| Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|---|--|--|--|---|--|
| VFAs and ORV Routes around Village, Campground, and Day Use Area Beaches | | | | | |
| <p>Village beaches, as identified below, are seasonally closed to ORV use from May 15 through Sep 15:</p> <ul style="list-style-type: none"> • Bodie Island from ramp 1 to 0.5 mile south of Coquina Beach. • Beaches fronting the villages of Rodanthe, Waves, Salvo, and Avon. • The beach fronting Buxton south to ramp 43. • Beaches fronting the villages of Frisco and Hatteras. <p>Ocracoke day use area and campground beaches: Ocracoke Island from 0.5 mile south of ramp 67 to 0.25 mile north of ramp 70 closed to ORVs when campground is open (approx. Apr 1 to Oct 31).</p> | <p>Same as alternative A, except: The beach from ramp 43 to 0.4 mile north is open to ORVs year-round.</p> | <p>Village, campground, and day-use beaches would be managed as follows (also described in table 7):</p> <p>Seasonally restricted ORV routes: (closed to ORVs Mar 15 to Oct 14, unless otherwise indicated)</p> <ul style="list-style-type: none"> • Rodanthe, Waves, Salvo, Avon, Frisco, and Hatteras Village beaches. • Ocracoke campground beach, from 0.5 mile northeast to 0.5 mile southwest of ramp 68 (closed to ORVs when campground is open, which is approx. Apr 1 to Oct 31). <p>VFAs year-round:</p> <ul style="list-style-type: none"> • Buxton beach S to 0.4 mile north of ramp 43. <p>Ocracoke day use area beach, from 1.2 miles northeast to 0.5 mile northeast of ramp 70.</p> | <p>Village beaches would be managed as follows (also described in table 7):</p> <p>VFAs year-round:</p> <ul style="list-style-type: none"> • All village beaches would be vehicle free year-round. | <p>Village beaches would be managed as follows (also described in table 7):</p> <p>Seasonally restricted ORV routes: (closed to ORVs Apr 1 to Oct 31)</p> <ul style="list-style-type: none"> • Rodanthe, Waves, Salvo, and Avon beaches, and Buxton Beach south to 0.4 mile north of ramp 43. • Ocracoke Campground Beach, from 0.5 mile northeast to 0.5 mile southwest of ramp 68. <p>VFAs year-round:</p> <ul style="list-style-type: none"> • Bodie Island from ramp 1 to approx. 0.5 mile south of Coquina Beach. • Frisco and Hatteras Village beaches. <p>Ocracoke day use area beach, from 1.2 miles northeast (of ramp 70) to 0.5 mile northeast of ramp 70.</p> | <p>Village beaches would be managed as follows (also described in table 7):</p> <p>Seasonally restricted ORV routes: (closed to ORVs as indicated below)</p> <ul style="list-style-type: none"> • Rodanthe (south of the pier), Waves, Salvo, Avon, Frisco, and Hatteras Village beaches, and Ocracoke Campground Beach from 0.5 mile northeast to ramp 68 (closed to ORVs Apr 1 to Oct 31). • When village beaches are open to ORV use from November 1 through March 31, a safety closure would be implemented on portions of a village beach that are not consistently at least 20 meters (66 feet) wide during normal high tides. <p>-</p> <p>VFAs year-round:</p> <ul style="list-style-type: none"> • Bodie Island from ramp 1 to approx. 0.5 mile south of Coquina Beach. • Rodanthe (north of the pier) • Buxton Beach south to 0.4 mile north of ramp 43. • Ocracoke day use area beach from ramp 68 to 0.4 mile northeast of ramp 70. |

Table ES-3. Summary of Alternative Elements

| Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|---|--|---|---|--|---|
| ORV Access | | | | | |
| <p>Oceanside access: ORV access is provided via 17 oceanside ramps and access points located off NC-12. Ramps are numbered and identified on the Seashore's ORV route map as official vehicle access routes. Seashore staff maintains ramps and signage.</p> | <p>Oceanside access: Same as alternative A.</p> | <p>Oceanside access: To provide access to the designated ORV routes and VFAs in addition to the existing ramps, which would be maintained, new or improved ramps would be developed as identified in table 7. Toilet facilities and trash receptacles would be provided at high use locations.</p> | <p>Oceanside access: Same as alternative C.</p> | <p>Oceanside access: Same as alternative C.</p> | <p>Oceanside access: To provide access to designated ORV routes, VFAs, and existing ramps, new ramps would be developed as identified in table 7-1.</p> |
| <p>Soundside access: ORV access is provided via 18 soundside access points located off NC-12. Seashore staff maintains ramps and signage.</p> | <p>Soundside access: Same as alternative A.</p> | <p>Soundside access: Existing soundside ramps would be designated as ORV routes and would remain open with sufficient maintenance to provide clear passage. Signage/posts would be installed at the primitive parking areas and boat launch areas to prevent damage to vegetation and other soundside resources.</p> | <p>Soundside access: Same as alternative A.</p> | <p>Soundside access: Soundside ramps to designated boat launch areas and Pole Road access to the sound via Cable Crossing and Spur Road would remain open. The remaining soundside ramps would be closed to ORV use and small parking areas would be constructed to provide pedestrian access to the water, except: Existing Ocracoke Island access points north of village would remain open to commercial fishermen. Signage/posts would be installed at the parking areas and boat launch areas to prevent damage to vegetation and other soundside resources.</p> | <p>Soundside access: Existing off-road soundside areas would be designated as ORV routes and would remain open with sufficient maintenance to provide clear passage. Signage/posts would be installed at the primitive parking areas and boat launch areas to prevent damage to vegetation and other soundside resources. Seasonal soundside access on Ocracoke Island (open Sept 15 – March 14):<ul style="list-style-type: none">• ORV route 0.6 mile south of ramp 72 from the beach route to a pedestrian trail to Pamlico Sound.ORV route at the north end of South Point spit from the beach route to Pamlico Sound.</p> |

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|--|--|---|--|--|---|
| <p>Interdunal roads: One-lane, interdunal routes have been designated as follows:</p> <p>Bodie Island District: None.</p> <p>Hatteras Island District:</p> <ul style="list-style-type: none"> • Cape Point between ramp 44 and ramp 45. • Hatteras Inlet from ramp 55 to the inlet (includes Pole Road, Cable Crossing, and Spur Road). <p>Ocracoke Island District: None.</p> | <p>Interdunal roads: Same as alternative A.</p> <p>Bodie Island District: Same as alternative A.</p> <p>Hatteras Island District:</p> <ul style="list-style-type: none"> • Same as alternative A, plus: Cape Point south of Salt Pond at the narrows. <p>Ocracoke Island District: Same as alternative A.</p> | <p>Interdunal roads: Same as alternative A, plus:</p> <ul style="list-style-type: none"> • Existing interdunal roads would be better maintained as needed to provide access to ORV areas. Pullouts or road widening would be provided where appropriate to provide safe passage. <p>Bodie Island District: Same as alternative A.</p> <p>Hatteras Island District:</p> <ul style="list-style-type: none"> • Same as alternative A, plus: <ul style="list-style-type: none"> • Cape Point south of Salt Pond at the narrows. • South Beach: Extend interdunal road W of ramp 45 to ramp 49. Establish new ramps 47 and 48 off of interdunal road. <p>Ocracoke Island District: Same as alternative A.</p> | <p>Interdunal roads: Same as alternative A.</p> <p>Bodie Island District: Same as alternative A.</p> <p>Hatteras Island District:</p> <ul style="list-style-type: none"> From ramp 55 to Bone Road (a.k.a. Fort Clark Spur); includes Pole Road, Cable Crossing, and Spur Road. <p>Ocracoke Island District: Same as alternative A.</p> | <p>Interdunal roads: Same as alternative C.</p> <p>Bodie Island District: Same as alternative A.</p> <p>Hatteras Island District:</p> <ul style="list-style-type: none"> • Same as alternative C. <p>Ocracoke Island District: Same as alternative A.</p> | <p>Interdunal roads: Existing interdunal roads would be designated as ORV routes and be better maintained as needed to provide access to ORV areas. Pullouts or road widening would be provided where appropriate to provide safe passage.</p> <p>Bodie Island District: Same as alternative A.</p> <p>Hatteras Island District:</p> <ul style="list-style-type: none"> • Same as alternative A, plus: <ul style="list-style-type: none"> • Cape Point south of Salt Pond at the narrows. • South Beach: Extend interdunal road W of ramp 45 to ramp 49. Establish new ramp 47.5 off of interdunal road. • Hatteras Inlet Spit: Establish new interdunal road from the intersection of Pole and Spur Roads southwest towards the inlet, stopping at least 100 meters from the inlet. <p>Ocracoke Island District: Same as alternative A.</p> |

Table ES-3. Summary of Alternative Elements

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|---|--|--|---|---|--|
| Hours of Allowable ORV Operation on Beach (Please refer to tables 7 and 7-1 to determine when routes and areas are open to ORV use.) | | | | | |
| All areas of the Seashore open 24 hours a day year-round. | <p>Nov 16 to Apr 30: All beaches open to ORV use 24 hours a day.</p> <p>May 1 to Nov 15: All potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) closed to non-essential ORV use from 10:00 p.m. to 6:00 a.m., except that from Sep 16 to Nov 15 ORV use is allowed from 10:00 p.m. to 6:00 a.m. subject to terms and conditions of a permit.</p> | <p>Nov 16 to Apr 30: Designated ORV routes would be open to ORV use 24 hours a day.</p> <p>May 1 to Nov 15: Designated ORV routes in potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) would be closed to non-essential ORV use from 7:00 p.m. to 7:00 a.m.</p> <p>Hours of night-driving prohibition would be established in the Superintendent's Compendium and subject to periodic review.</p> | <p>Same as alternative C, except:</p> <ul style="list-style-type: none"> • No periodic review. | <p>Nov 16 to Apr 30: Designated ORV routes would be open to ORV use 24 hours a day.</p> <p>May 1 to Nov 15: Designated ORV routes in potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) would be closed to non-essential ORV use from 10:00 p.m. to 6:00 a.m.</p> <p>Sep 16 to Nov 15: ORV routes with no or low density of turtle nests would reopen to ORV use between 10:00 p.m. and 6:00 a.m., subject to terms and conditions of permit.</p> <p>Hours of night-driving prohibition would be established in the Superintendent's Compendium and subject to periodic review.</p> | <p>Nov 16 to Apr 30: Designated ORV routes would be open to ORV use 24 hours a day.</p> <p>May 1 to Nov 15: Designated ORV routes in potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) would be closed to non-essential ORV use from 9:00 p.m. until 7:00 a.m.</p> <p>Sep 16 to Nov 15: ORV routes with no turtle nests remaining would reopen for night driving, subject to terms and conditions of the standard ORV permit.</p> |

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|---|--|--|--|---|---|
| ORV Safety Closures | | | | | |
| <p>ORV safety closures are established as needed to address safety conditions such as debris on the beach or narrow beaches. Narrow beaches are reopened as the beach widens. Safety closures are applicable only to ORV access; pedestrian access is maintained.</p> <p>Existing ORV safety closures include:</p> <ul style="list-style-type: none"> • Ramp 1 to ramp 2 • 1.8 mile south of ramp 38 to 0.4 mile north of ramp 43. • Buxton to Lighthouse Beach. • Northern boundary of Frisco to Hatteras Village. • Hatteras Village Beach. <p>1.5 mile north of ramp 67 to 1 mile south of ramp 59.</p> | <p>Same as alternative A.</p> | <p>ORV safety closures would be established on designated ORV routes as needed to address ORV and pedestrian safety considerations, including the following:</p> <ul style="list-style-type: none"> • Debris on the beach. • Narrow beaches. • Congested areas. <p>Safety closures would preclude ORV access, while pedestrian and commercial fishing access would generally be maintained through safety closures.</p> <p>NPS law enforcement staff would monitor ORV safety closures on a weekly basis. Sufficient reduction or elimination of the conditions prompting the closure, so there is no longer an imminent hazard, would constitute the trigger for reopening an ORV safety closure.</p> | <p>ORV safety closures would not be established. ORV drivers would be responsible for recognizing and avoiding ORV safety hazards and would drive at own risk.</p> | <p>Same as alternative C.</p> | <p>ORV safety closures would be implemented in the event of a threat of significant bodily injury or death, and/or damage to personal property, including vehicles and their contents. ORV safety closures would preclude ORV access, while pedestrian and commercial fishing access would be maintained through most safety closures.</p> <p>Triggers that could justify an ORV safety closure include, but are not limited to:</p> <ul style="list-style-type: none"> • Deep beach cuts that block the beach from dune to surf with no obvious way around. • Obstacles, such as exposed stumps, shipwrecks, or debris, that cannot be safely bypassed or that block the entire width of the beach and cannot be easily removed. • Severe beach slope that puts vehicles in an unsafe gradient position and increases the chances of the loss of vehicular control. • A high concentration of pedestrian users coupled with a narrow beach. • A narrow beach where there is insufficient width to safely exit the beach in the vehicle corridor during normal (non-storm) high tides. • Between November 1 and March 31 portions of a village beach that are not consistently at least 20 meters (66 feet) wide during normal high tides. <p>Triggers do not include:</p> <ul style="list-style-type: none"> • Hazards blocking only a portion of the beach, where safe passage is available around the hazard. <p>NPS law enforcement staff will monitor ORV safety closures on a weekly basis. Sufficient reduction or elimination of the conditions prompting the closure, so there is no longer an imminent hazard, would constitute the trigger for reopening a closure.</p> |

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|--|--|--|---|--|--|
| Pedestrian Safety | | | | | |
| 36 CFR 4.20, Right-of-Way: An operator of a motor vehicle shall yield the right of way to pedestrians (as well as saddle and pack animals, and vehicles drawn by animals). Failure to yield the right of way is prohibited. 36 CFR 4.22, Unsafe Operation: (b) The following are prohibited: (3) Failing to maintain that degree of control of a motor vehicle necessary to avoid danger to persons, property, or wildlife. No additional measures apply. | Same as alternative A. | Same as alternative A. | Same as alternative A. | Same as alternative A, plus: <ul style="list-style-type: none">For village beaches that are open to ORV use during the winter season, the village beaches must be at least 20 meters (66 feet) wide from the toe of the dune seaward to mean high tide line in order to be open to ORV use. | Same as alternative A, plus: <ul style="list-style-type: none">Vehicles must yield to pedestrians on all ORV routes.When approaching or passing a pedestrian on the beach, ORVs shall move to the landward side of the available ORV corridor in order to yield the wider portion of the beach corridor to the pedestrian.ORVs shall slow to 5 mph when traveling within 30.5 meters (100 feet) or less of pedestrians at any location on the beach at any time of year.Pedestrians should not block access ramps and should use pedestrian ramps/boardwalks where available. If a pedestrian walkover is not available, pedestrians should walk to the side of ORV ramps, not in the tire tracks. |
| Administrative ORV Closures | | | | | |
| The beach in front of the former site of Cape Hatteras Lighthouse is closed to ORV access. Buxton Woods Road is closed to ORV access. | Same as alternative A. | No administrative closures would be established. ORV routes and VFAs would be designated as described in table 7. | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Temporary Emergency ORV Closures | | | | | |
| Temporary emergency ORV closures established per Superintendent's Compendium and NPS policy. | Same as alternative A, plus: <ul style="list-style-type: none">NPS retains the authority to implement a temporary emergency ORV closure if any of the following conditions are observed:<ul style="list-style-type: none">ORV traffic is backing up on the beach access ramps, either on- or off-beach bound, which threatens to impede traffic flow.ORV traffic on the beach is parked in such a way that two-way traffic is impeded. Multiple incidents of disorderly behavior are observed or reported. | Same as alternative B, plus: <ul style="list-style-type: none">Beaches would be temporarily closed to additional ORV use if/when carrying capacity is reached or exceeded. | Same as alternative B. | Same as alternative C. | Same as alternative B, plus: <ul style="list-style-type: none">Beaches would be temporarily closed to additional ORV use if/when carrying capacity or one-vehicle-deep beach parking limit is reached or exceeded. |

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|--|---|---|---|--|---|
| Ramp Characteristics | | | | | |
| Ramp width and construction details vary. Current practice is to use shell/clay base material to provide firm driving surface where ramps cross dune line. | Same as alternative A. | <p>Ramps would be two lanes wide with shell/clay base and have:</p> <ul style="list-style-type: none"> • Standard regulatory signs and information boards at all ramps. • Gates at all ramps and access points. • Designated “air down” area with hardened surface (e.g., shell/clay base). | Same as alternative C. | Same as alternative C. | - Same as alternative C. |
| Permit Requirements | | | | | |
| No permit required. | Night-driving permit required for ORV use from 10:00 p.m. to 6:00 a.m. Sep 16 to Nov 15. | ORV permit required. | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Permit Distribution | | | | | |
| N/A | Available in person at various locations and online. | Available in person at designated permit issuing stations and online. | Same as alternative C. | Same as alternative C. | Available in person at designated NPS permit issuing stations. |
| Permit Issuance Requirements | | | | | |
| N/A | ORV owner must sign permit to acknowledge understanding of the rules and must carry permit when beach driving during the restricted period. | ORV owners must complete a short education program in person or online and pass a basic knowledge test. Owners would sign for their permits to acknowledge understanding of the rules and regulations governing ORV use at the Seashore. | ORV owners must read an information brochure and sign the permit to acknowledge understanding of the rules and regulations governing ORV use at the Seashore. | Same as alternative C. | ORV owners must complete a short education program in person and sign for the permit to acknowledge understanding of the rules and regulations governing ORV use at the Seashore. |
| Permit Types | | | | | |
| N/A | Night-driving permit for Sep 16 to Nov 15. | Annual ORV permits would be valid for 12 months from date of purchase. | Annual ORV permits would be valid for the calendar year. | <p>Weekly (7-day) and annual (12-month) ORV permits would be valid from date of purchase. Permits would include night-driving component for September 16 to November 15.</p> <p>In addition, a separate permit would be required for the following activities:</p> <ul style="list-style-type: none"> • Park-and-stay overnight. • Self-contained vehicle (SCV) camping. | 7-day ORV permits would be valid from date of purchase. Annual ORV permits would be valid for the calendar year. Permits would include night-driving component for September 16 to November 15. |
| Permit Number Limits | | | | | |
| N/A | No limit on night-driving permits. | No limit on ORV permits. | Same as alternative C. | <p>Same as alternative C, except:</p> <ul style="list-style-type: none"> • Use limits would be established for park-and-stay and SCV camping. • Use limits would be subject to periodic review. | Same as alternative C. |

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|--|---|--|--|--|---|
| Permit Fees | | | | | |
| N/A | None | ORV permit fee would be based on cost recovery as described in NPS Director's Order and Reference Manual 53. | Same as alternative C, except: <ul style="list-style-type: none"> Amount of fee would be lower than alternative C due to decreased management costs under this alternative. | Same as alternative C, except: <ul style="list-style-type: none"> Fee for weekly ORV permit would be less than fee for annual permit. Fees for park-and-stay and SCV permits would be determined separately. | Same as alternative C, except: <ul style="list-style-type: none"> Fee for 7-day ORV permit would be less than fee for annual permit. |
| Permit Form | | | | | |
| N/A | Night-driving permit is an informational brochure that the user signs and places on dash of vehicle. | ORV permit would be affixed to vehicle in a manner approved by the NPS. | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Permit Revocation | | | | | |
| N/A | Night-driving permit may be revoked for violation of applicable park regulations or terms and conditions of the permit. | ORV permit may be revoked for violation of applicable park regulations or terms and conditions of the permit. | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Beach Parking | | | | | |
| Parking within routes is allowed in any configuration, as long as parked vehicles do not obstruct traffic. | Same as alternative A. | Same as alternative A. | Parking within ORV routes is allowed, but only one vehicle deep. Stacking of vehicles in more than one row would be prohibited. | Same as alternative A. | Parking within ORV routes is allowed, but only one vehicle deep, as long as vehicles do not obstruct two-way traffic. Stacking of vehicles in more than one row would be prohibited. |
| Vehicle Carrying Capacity Determination | | | | | |
| Vehicle carrying capacity would not be determined. | Same as alternative A. | Carrying capacity would be a "peak use limit" determined for all areas based on the linear feet of beachfront and the following physical space requirements ("mile" refers to miles of beach open to ORV use): <ul style="list-style-type: none"> Bodie Island District: <ul style="list-style-type: none"> 260 vehicles/mile (20 feet/vehicle). Hatteras Island District: <ul style="list-style-type: none"> 260 vehicles/mile (20 feet/vehicle). Ocracoke Island District: <ul style="list-style-type: none"> 175 vehicles/mile (30 feet/vehicle). Temporary exceptions to carrying-capacity limits may be approved for short-term events operating under a special use permit. Carrying-capacity criteria would be subject to periodic review. | Carrying capacity would be addressed solely by the beach parking restriction described in the row above. | Same as alternative C, except: Hatteras Island District: <ul style="list-style-type: none"> Cape Point: 400 vehicles allowed within a 1 mile area centered on Cape Point. | The maximum number of vehicles allowed on any particular ORV route is the linear distance of the route divided by 6 meters (20 feet) per vehicle (i.e., the equivalent of 260 vehicles per mile). |

| Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| ORV Characteristic Requirements | | | | | |
| All vehicles operating in all areas of the Seashore must have valid vehicle registration, insurance, and license plate. Vehicles must be street legal. All-terrain vehicles (ATVs) are prohibited from beach driving. | Same as alternative A. | <p>Off-road Vehicle characteristics:</p> <ul style="list-style-type: none"> • All vehicles must be registered, licensed, and insured for highway use and must comply with state inspection regulations within the state, country, or province where the vehicle is registered • Four-wheel-drive vehicles are recommended. • Two-wheel-drive vehicles are allowed. • Motorcycles and ATVs are prohibited. • There is a three-axle maximum for vehicles (this is the axle maximum for the powered vehicle only and does not include the additional number of axles on towed trailers). • Any trailers are limited to no more than two axles. • The maximum vehicle length is 30 feet (this is the maximum length for the powered vehicle and does not include the additional length of a towed trailer). • Tires must be U.S. Dept. of Transportation-listed or approved. | Same as alternative C. | <p>Same as alternative C, except:</p> <ul style="list-style-type: none"> • Motorcycles would be prohibited on ocean beaches, but allowed on soundside access areas where ORVs are allowed. | <p>Off-road vehicle characteristics:</p> <ul style="list-style-type: none"> • All vehicles must be registered, licensed, and insured for highway use and must comply with state inspection regulations within the state, country, or province where the vehicle is registered. • Four-wheel-drive vehicles are recommended. • Two-wheel-drive vehicles are allowed. • Motorcycles, ATVs, and UTVs are prohibited. • The vehicle must have no more than two axles. • Towed boat trailers are allowed and must have no more than two axles. Travel trailers (i.e., camping trailers) are prohibited. • Vehicle tires must be U.S. Department of Transportation-listed or approved. |
| Equipment Requirements | | | | | |
| None | Same as alternative A. | <p>Equipment requirements:</p> <ul style="list-style-type: none"> • All vehicles shall contain a low-pressure tire gauge, shovel, jack, and jack stand. • A full-sized spare tire, first-aid kit, fire extinguisher, trash bag or container, flashlight (if night driving), and tow strap are recommended. | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Tire Pressure | | | | | |
| Recommend air down of tires before driving on the beach. | Same as alternative A. | When driving on designated routes, tire pressure must be lowered sufficiently to maintain adequate traction within the posted speed limit. Tire pressure of 20 psi is <i>recommended</i> for most vehicles. The softer the sand, the lower the pressure needed. Re-inflate tires to normal pressure as soon as possible after vehicle returns to paved roads. | Same as alternative C. | Same as alternative C. | Same as alternative C. |

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| Speed Limit | | | | | |
| <p>Speed limit is 25 mph (unless otherwise posted) on park beaches for public and private vehicles.</p> <p>Speed limit is 10 mph when ORV corridor is less than 100 feet wide.</p> <p>Speed limit in front of villages during off season (Sep 16 to May 14) on park beaches posted at 10 mph.</p> <p>Emergency vehicles exempt when responding to a call.</p> | <p>May 15 to Sep 15: Speed limit is 15 mph (unless otherwise posted).</p> <p>Sep 16 to May 14: Speed limit is 25 mph (unless otherwise posted).</p> | <p>Speed limit is 15 mph (unless otherwise posted).</p> <p>Emergency vehicles exempt when responding to a call.</p> | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Essential Vehicles | | | | | |
| Essential vehicles are allowed in VFAs and within resource closures subject to guidelines in the “Essential Vehicles” section of appendix G of the USFWS <i>Piping Plover, Atlantic Coast Population, Revised Recovery Plan</i> . To the extent practicable, emergency response vehicle operators will consult with trained resource management staff regarding protected species before driving into or through resource closures; however, prior consultation may not always be practical. | Same as alternative A. | Same as alternative A. | Same as alternative A. | Same as alternative A. | Same as alternative A. |
| VFAs | | | | | |
| None designated. ORVs are temporarily prohibited in seasonal (village) closures, safety closures, administrative closures, and resource closures, including some areas that have been closed to ORV use for many years. | Same as alternative A. | VFAs would be designated as indicated in table 7. | VFAs would be designated as indicated in table 7. | VFAs would be designated as indicated in table 7. | VFAs would be designated as indicated in table 7-1. |
| Resource Education | | | | | |
| Information is available to the general public through the park website, newspaper, information brochures, and interpretive programs. However, there is no targeted education program for beach users. | <p>Same as alternative A, except:</p> <ul style="list-style-type: none"> • Night-driving permit has basic education component. • Protected species information is available at ORV access points. • There is a 24-hour citizen phone line. • The beach access brochure is to be redesigned. | <p>General information would remain available as described in alternative A. There would be a new required education program for ORV users, as described under ORV Permit Issuance Requirements.</p> | Same as alternative C. | Same as alternative C. | Same as alternative C, plus: <ul style="list-style-type: none"> • There would be a new voluntary resource education program targeted toward pedestrian beach users. |

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| Temporary ORV Use of VFAs | | | | | |
| Beach access would be provided through the issuance of special use permits for areas in front of the villages to allow ORVs to transport visitors with disabilities to the beach and then return the vehicle back to the street. | Beach access would be provided through the issuance of special use permits for areas in front of the villages to allow ORVs to transport visitors with disabilities to the beach and then return the vehicle back to the street. | <p>Under the terms and conditions of a special use permit, the Superintendent could authorize the following:</p> <ul style="list-style-type: none"> • Beach access would be provided through the issuance of special use permits for areas in front of the villages to allow ORVs to transport visitors with disabilities to the beach and then return the vehicle back to the street. • Temporary emergency ORV use of VFAs if needed to bypass sections of NC-12 that are closed for repairs. This could apply to all vehicles, including private vehicles, and would require a special use permit during the temporary emergency situation. • Temporary non-emergency ORV use of VFAs traditionally used for fishing tournaments that were established prior to Jan 1, 2009. • Temporary non-emergency ORV use of VFAs in front of villages to transport mobility-impaired individuals to join their family or friends on an open beach that is otherwise closed to ORVs. ORV use would be limited to the shortest, most direct distance between the nearest designated ORV route and the location of the gathering. <p>Temporary non-emergency use by <i>nonessential</i> vehicles would not be permitted within resource closures.</p> | Same as alternative A. | Same as alternative C. | <p>The superintendent may issue a special use permit for temporary off-road vehicle use to:</p> <ul style="list-style-type: none"> • Authorize the North Carolina Department of Transportation to use Seashore beaches as a public way when necessary to by-pass sections of NC Highway 12 that are impassible or closed for repairs. • Allow participants in a regularly-scheduled fishing tournament to drive in an area not designated for off-road use, if off-road use was allowed in that area for that tournament before January 1, 2009. • Allow vehicular transport of mobility-impaired individuals to a predetermined location in a designated VFA in front of villages via the shortest most direct distance from the nearest designated ORV route or Seashore road; the vehicle must return to the designated ORV route or Seashore road immediately after the transport. <p>Temporary non-emergency use by <i>nonessential</i> vehicles would not be permitted within resource closure.</p> |
| Parking Areas for Access to VFAs | | | | | |
| Parking is currently provided in 32 park-maintained parking lots throughout the Seashore, totaling approx. 1,000 spaces. | Same as alternative A. | New or expanded parking would be established to support pedestrian access to VFAs as identified in table 7. NPS would use environmentally appropriate design standards to minimize stormwater runoff and other resource impacts. Toilet facilities and trash receptacles would be provided at high-use locations. | Same as alternative C. | Same as alternative C. | Same as alternative C, except as identified in table 7-1. |

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| Alternative Transportation | | | | | |
| None | Same as alternative A. | NPS would consider applications for commercial use authorization to offer beach shuttle services. | Same as alternative A. | Same as alternative C, plus: <ul style="list-style-type: none"> • NPS would designate and post boat landing zones (drop-off) near the inlet at Bodie Island Spit and South Point Ocracoke that could be used to drop off pedestrians if/when the inlet shoreline is not otherwise closed to protect Seashore resources. NPS would encourage a commercial water shuttle service for this purpose; however, the drop-off points would be subject to closure on short notice if needed to protect Seashore resources. | NPS would consider applications for commercial use authorizations to offer beach and water shuttle services. NPS would apply for funding to conduct an alternative transportation study to evaluate the feasibility of alternative forms of transportation to popular sites, such as inlets and Cape Point. |

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| Camping and Nighttime Beach Use | | | | | |
| <p>Per 36 CFR 2.10: Camping^a is prohibited except in designated areas. In the Superintendent's Compendium, camping is prohibited on Seashore beaches. In areas open to ORV use, ORVs are allowed on the beach overnight if someone associated with the vehicle is actively fishing.</p> <p>^aCamping is defined in 36 CFR 1.4 as the erecting of a tent or shelter of natural or synthetic material, preparing a sleeping bag or other bedding material for use, parking of a motor vehicle, motor home, or trailer, or mooring of a vessel for the apparent purpose of overnight occupancy.</p> | <p>Same as alternative A, plus:</p> <ul style="list-style-type: none"> Nighttime use of ORVs is seasonally restricted as described under the Hours of Allowable ORV Operation section. | <p>Same as alternative B, plus:</p> <ul style="list-style-type: none"> Unattended beach equipment (e.g., chairs, canopies, volleyball nets, watersports gear) is prohibited on the Seashore at night. Turtle patrol and law enforcement will tag equipment found at night. Owners have 24 hours to remove equipment before it is removed by NPS staff. | <p>Same as alternative C.</p> | <p>Same as alternative C, plus:</p> <p>SCV camping would be authorized as follows:</p> <ul style="list-style-type: none"> The following campgrounds and use limits would be designated for SCV camping from Nov 1 to Mar 31: Oregon Inlet—100 spaces; Cape Point—100 spaces; and Ocracoke—50 spaces. Use limits would be established in the Superintendent's Compendium and subject to periodic review. SCV permits would be required, in addition to an ORV permit for beach driving, and would be available in weekly or seasonal increments. There would be a 7-consecutive-day- / 6-night-stay limit during any one visit and a limit of one visit per month. SCVs would be required to have a self-contained toilet and a separate, permanently installed holding tank for both black and grey water, each with a min. capacity of 3 days' waste. Holding tanks must be dumped at an appropriate facility every 72 hours during a visit. <p>Between May 1 and September 16, ORV park-and-stay overnight would be allowed with a permit at selected spits and points, if not otherwise closed to protect resources. The following park-and-stay use limits would be established: Inlet spits—15 vehicles each; Cape Point and South Point Ocracoke—25 vehicles each. Park-and-stay use limits and hours of night-driving prohibition would be established in the Superintendent's Compendium and subject to periodic review.</p> | <p>Same as alternative C.</p> |

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| Beach Fires | | | | | |
| Per 36 CFR 2.13: Fires are prohibited except in designated areas. In the Superintendent's Compendium, beach fires are authorized year-round, with the following restrictions: <ul style="list-style-type: none"> Fires are prohibited from midnight to 6:00 a.m. year-round. Fires are prohibited within resource closures. | Same as alternative A. | Same as alternative B, plus: <ul style="list-style-type: none"> A non-fee educational fire permit is required for any beach fire year-round. The hours that beach fires are permitted are subject to periodic review. | Same as alternative A. | Same as alternative C. | Beach fires are authorized year-round, with the following restrictions: <ul style="list-style-type: none"> A non-fee educational fire permit is required for any beach fire. Fires are prohibited from 10:00 p.m. to 6:00 a.m. year round. Fires are prohibited within resource closures and within 100 meters of any turtle nest closure. May 1 to Nov 15: Beach fires would be permitted only in front of Coquina Beach, Rodanthe, Waves, Salvo, Avon, Buxton, Frisco Hatteras Village, and Ocracoke day use area during the sea turtle nesting season. |
| Pets | | | | | |
| Per 36 CFR 2.15: The following are prohibited: <ul style="list-style-type: none"> Possessing a pet in an area closed to the possession of pets by the Superintendent. Failing to crate, cage, restrain on a leash which shall not exceed 6 feet in length, or otherwise physically confine a pet at all times. In the Superintendent's Compendium, pets are prohibited in all resource closures. Pets are prohibited, even if on a leash, from the landward side of the posts delineating the ORV corridor at the spits (Bodie, Hatteras, Ocracoke) and Cape Point. | Same as alternative A. | Same as alternative A, except : <ul style="list-style-type: none"> Pets would be prohibited within all designated Breeding Shorebird Species Management Areas (SMAs) from Mar 15 to Oct 15. Pets would be prohibited within all Nonbreeding Shorebird SMAs that are otherwise open to recreational use. | Same as alternative C, except : <ul style="list-style-type: none"> Pets would be prohibited in all designated SMAs year-round. This policy would not be subject to periodic review. | Same as alternative C, except: <ul style="list-style-type: none"> Pets would be prohibited within all designated Breeding Shorebird SMAs, including pass-through zones, from Mar 15 to Aug 31. | <ul style="list-style-type: none"> Same as alternative A, plus: <ul style="list-style-type: none"> Pets would be prohibited in pedestrian shoreline access areas in front of (i.e., seaward of) bird prenesting areas. |

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| Horses | | | | | |
| Per 36 CFR 2.16: The use of horses or pack animals is prohibited outside of trails, routes, or areas designated for their use. In the Superintendent's Compendium, horse use is prohibited in resource closures and on lifeguarded beaches, and is allowed only in the following locations: <ul style="list-style-type: none">• On the beach seaward of the existing dunes and only on beaches open to ORV use.• Along road shoulders or across paved roads where travel is necessary to cross to and from beach access routes.• On trails or in areas as authorized by commercial-use authorization or special use permit. | Same as alternative A. | Same as alternative A, except: <ul style="list-style-type: none">• Horse use would be allowed in some VFAs, except for SMAs, and on a limited number of trails to be designated in the Superintendent's Compendium after ORV routes are determined.• Horse use would be allowed on village beaches from Sep 16 to May 14.• The designated horse use trails and areas would be subject to periodic review. | Same as alternative A. | Same as alternative C. | Same as alternative A, except: <ul style="list-style-type: none">• Horse use would be allowed in some VFAs and on a limited number of trails to be designated in the Superintendent's Compendium after ORV routes are determined.• Horse use would be allowed on village beaches from Sep 16 to May 14.• Horses are prohibited in resource closures and in pedestrian shoreline access areas in front of (i.e., seaward of) bird prenesting areas. |
| Authorized Commercial Vehicles | | | | | |
| Commercial fishing at the Seashore is authorized and managed under a special use permit in accordance with 36 CFR 7.58(b). Commercial fishing vehicles are considered <i>non-essential vehicles</i> and are not authorized to enter resource closures. Permitted commercial fishermen are authorized to enter other areas that are closed to recreational ORV use, including seasonal closures and safety closures, but are not authorized to enter lifeguarded beaches. | Same as alternative A, plus: <ul style="list-style-type: none">• Commercial fishing vehicles are subject to the night-driving restriction in the consent decree.• Under the modified consent decree, commercial fishermen would be granted access to beaches at 5:00 a.m. instead of 6:00 a.m., provided certain conditions from the modified consent decree are met. | Same as alternative A, except: <ul style="list-style-type: none">• Commercial fishermen would not be required to obtain an ORV permit that would be required for recreational ORVs.• Commercial fishing vehicles would be authorized to enter VFAs, except for resource closures and lifeguarded beaches.• In areas outside of existing resource closures, the Superintendent would be able to modify the hours of night-driving restrictions by +/- two hours, subject to terms and conditions of the fishing permit, for commercial fishermen who are actively engaged in authorized commercial fishing activity and can produce fish house receipts from the past 30 days. Such modifications would be subject to periodic review. | Same as alternative C. | Same as alternative C. | Use of vehicles off-road under the terms of a commercial use authorization or commercial fishing permit issued by the superintendent would be as follows. A separate ORV permit is not required. <ul style="list-style-type: none">• When driving off-road, a commercial use authorization (CUA) holder is restricted to the designated off-road routes open for use.• A commercial fishing permit holder may drive on designated off-road routes and, when actively engaged in authorized commercial fishing activities, on beaches not designated for off-road use, except for resource closures and lifeguarded beaches.• The superintendent may allow commercial fishing vehicles to enter the beach at 5 a.m. when night driving restrictions are in effect for the general public, for those actively engaged in authorized commercial fishing activity involving haul seine and gill nets and able to present fish house receipts for the previous 30 days. |

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|--|--|--|---|---|---|
| Periodic Review | | | | | |
| None | Same as alternative A. | Every 5 years NPS would conduct a systematic review of the ORV management measures that are identified in this plan as being subject to Periodic Review. This could result in changes to those management actions in order to improve effectiveness. | Same as alternative A. | Same as alternative C. | Same as alternative C. |
| Staffing and Material Costs (annual costs based on 2009 dollars) | | | | | |
| Protection: \$1,147,500 Management/Administration: \$428,750 Resource Mgmt: \$508,500 Facilities: \$55,600 Interpretation: \$68,500 Total: \$2,208,850 | Protection: \$1,481,500 Management/Administration: \$483,950 Resource Mgmt: \$813,000 Facilities: \$178,600 Interpretation: \$193,500 Total: \$3,150,550 | Protection: \$1,706,900 Management/Administration: \$380,100 Resource Mgmt: \$704,000 Facilities: \$198,800 Interpretation: \$193,500 Total: \$3,183,300 | Protection: \$1,768,500 Management/Administration: \$360,850 Resource Mgmt: \$649,500 Facilities: \$178,600 Interpretation: \$193,500 Total: \$3,150,950 | Protection: \$2,204,300 Management/Administration: \$383,100 Resource Mgmt: \$924,200 Facilities: \$211,400 Interpretation: \$193,500 Total: \$3,916,500 | Protection: \$1,956,100 Management/Administration: \$274,150 Resource Mgmt: \$943,950 Facilities: \$194,100 Interpretation: \$263,850 Total: \$3,632,150 |
| Resource Protection Measures | | | | | |
| Breeding Season Measures | | | | | |
| Shorebird prenesting areas and ORV/pedestrian buffers for observed shorebird breeding behavior, sea turtle nests, and seabeach amaranth are established as described in the Interim Strategy FONSI (table 9). | Shorebird prenesting areas and ORV/pedestrian buffers for observed shorebird breeding behavior, sea turtle nests, and seabeach amaranth are established as described in the Interim Strategy FONSI (table 9), as modified by the consent decree. | Breeding Shorebird SMAs would be designated. Shorebird prenesting areas and ORV/pedestrian buffers for observed shorebird breeding behavior, sea turtle nests, and seabeach amaranth would be established as described in table 10. ML1 measures would be implemented at all locations (including those outside of SMAs), except at Bodie Island Spit, Cape Point, and South Point Ocracoke, where ML2 measures would be implemented. Designated SMAs would be subject to periodic review. | Same as alternative C, except: <ul style="list-style-type: none">ML1 would be implemented at all locations. | Same as alternative C, except: <ul style="list-style-type: none">ML2 areas at Bodie Island Spit, Cape Point, and South Point Ocracoke would include an ORV pass-through zone, using standard buffer distances as described in table 10. | Prenesting areas and buffers would be established as described in table 10-1. Pedestrian shoreline access below the high tide line would be permitted in front of (i.e., seaward of) prenesting areas until breeding activity is observed, then standard buffers for breeding activity would apply. The NPS retains discretion at all times to enforce more protective closures or take other measures, if considered necessary, consistent with its obligations under the law. |
| Nonbreeding Season Measures | | | | | |
| As described in the Interim Strategy FONSI: Suitable interior habitats at spits and at Cape Point are closed year-round to all recreational users to provide for resting and foraging for shorebirds. Suitable habitats include ephemeral ponds and moist flats at Cape Point, Hatteras Spit, Ocracoke, and Bodie Island Spit. Actual locations of suitable foraging and resting habitat may change periodically due to natural processes and are determined based on annual habitat assessment and monitoring. | Same as alternative A. | Nonbreeding Shorebird SMAs would be established at the points and spits based on an annual habitat assessment. In addition, year-round VFAs along the ocean shoreline outside of the villages, as identified in table 7, would be managed as Nonbreeding Shorebird SMAs with recreational activity restrictions as described in table 10. Designated SMAs would be subject to periodic review. | Same as alternative C. | Same as alternative C. | VFAs throughout the Seashore would provide relatively less disturbed foraging, resting, and roosting habitat for migrating and wintering birds. These areas would be managed as described in table 10-1. |

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| Vegetation | | | | | |
| ORV use is generally restricted to minimize impacts. | Same as alternative A. | ORV use would be restricted or prohibited in locations where ORV use is causing unacceptable impacts to vegetation. | Same as alternative C. | Same as alternative C. | Same as alternative C. |

TABLE ES-4. ANALYSIS OF HOW ALTERNATIVES MEET OBJECTIVES

| Objectives | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|---|--|--|---|---|---|---|
| Management Methodology | | | | | | |
| Identify criteria to designate ORV routes and areas. | Meets objective to some degree. No criteria would be developed to designate routes and areas. The ocean and inlet shoreline and existing soundside routes would potentially be open to ORV use 24 hours a day, year-round. | Meets objective to some degree. No criteria would be developed to designate routes and areas. The ocean and inlet shoreline and existing soundside routes would potentially be open to ORV use, year-round. | Meets objective to a large degree. Routes and areas designated based on seasonal resource and visitor use characteristics of various areas in the Seashore. | Meets objective to a large degree. Routes and areas designated based on providing predictability for visitors and simplified management strategies. | Meets objective to a large degree. Routes and areas designated based on providing a wide variety of access opportunities for all users, while still protecting sensitive resources. | Meets objective to a large degree. Routes and areas designated based on providing a variety of access opportunities for all users, while still protecting sensitive resources. This alternative also provides more predictability than alternative E. |
| Establish ORV management practices and procedures that have the ability to adapt in response to changes in the Seashore's dynamic physical and biological environment. | Meets objective to a moderate degree. ORV use areas are determined by where resource management closures exist. Flexibility to adapt to changes, but lack of a framework to make these changes efficiently. | Meets objective to some degree. ORV use areas are set through resource management measures under the Consent Decree. Areas are set, but are rigid, and do not have flexibility to adapt as needed to respond to changing environment. | Meets objective to a large degree. Route, areas, and ORV management measures are established that are subject to Periodic Review of both ORV management and species management measures. | Meets objective to some degree. Route, areas, and ORV management measures are established that are subject to Periodic Review and species management measures, but not ORV management measures. The ability to implement safety closures would not be available. | Meets objective to a large degree. Route, areas, and ORV management measures are established that are subject to Periodic Review of both ORV management and species management measures. | Meets objective to a large degree. Route, areas, and ORV management measures are established that are subject to Periodic Review of both ORV management and species management measures. |
| Establish a civic engagement component for ORV management. | Meets objective to a moderate degree. The Seashore would conduct educational programs during bird and turtle hatching season, which would involve students from public schools, as well as other public involvement activities that engage the public. | Meets objective to a moderate degree. The Seashore would conduct educational programs during bird and turtle hatching season, which would involve students from public schools, as well as other public involvement activities that engage the public. | Meets objective to a large degree as the Seashore would implement more educational programs in local schools, expand the Junior Ranger program, and enlist volunteers for a Sea Turtle Nest Watch Program. | Meets objective to a large degree as the Seashore would implement more educational programs in local schools, expand the Junior Ranger program, and enlist volunteers for a Sea Turtle Nest Watch Program. | Meets objective to a large degree as the Seashore would implement more educational programs in local schools, expand the Junior Ranger program, and enlist volunteers for a Sea Turtle Nest Watch Program. | Meets objective to a large degree as the Seashore would implement more educational programs in local schools, expand the Junior Ranger program, and enlist volunteers for a Sea Turtle Nest Watch Program. |
| Establish procedures for prompt and efficient public notification of beach access status, including any temporary ORV use restrictions for such things as ramp maintenance, resource and public safety closures, storm events, etc. | Meets objective to some degree. Weekly beach access reports and online news releases provide prompt public notification. | Meets objective to a moderate degree. Weekly beach access reports, online news feeds, and Google Earth maps provide efficient beach access status updates. | Fully meets objective. Weekly beach access reports, online news feeds, and Google Earth maps provide efficient beach access status updates. Implementation of a permit system would provide ORV users with information regarding closed areas. | Fully meets objective. Weekly beach access reports, online news feeds, and Google Earth maps provide efficient beach access status updates. Implementation of a permit system would provide ORV users with information regarding closed areas. | Fully meets objective. Weekly beach access reports, online news feeds, and Google Earth maps provide efficient beach access status updates. Implementation of a permit system would provide ORV users with information regarding closed areas. | Fully meets objective. Weekly beach access reports, online news feeds, and Google Earth maps provide efficient beach access status updates. Implementation of a permit system would provide ORV users with information regarding closed areas. |
| Build stewardship through public awareness and understanding of NPS resource-management and visitor-use policies and responsibilities as they pertain to the Seashore and ORV management. | Meets objective to some degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. | Meets objective to some degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. Public opinion regarding the Consent Decree would detract from these efforts. | Meets objective to a large degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. Additional programs would be implemented and information provided through the permit system would increase awareness of Seashore resources. | Meets objective to a large degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. Additional programs would be implemented and information provided through the permit system would increase awareness of Seashore resources. | Meets objective to a large degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. Additional programs would be implemented and information provided through the permit system would increase awareness of Seashore resources. | Meets objective to a large degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. Additional programs would be implemented and information provided through the permit system would increase awareness of Seashore resources. |

| Objectives | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|---|--|---|---|---|--|---|
| Natural Physical Resources | | | | | | |
| Minimize impacts from ORV use to soils and topographic features, for example, dunes, ocean beach, wetlands, tidal flats, and other features. | Meets objective to some degree. ORV use not permitted on dunes, but permitted on the ocean and inlet shoreline and existing soundside routes would potentially be open to ORV use 24 hours a day, year-round. Lack of defined areas likely to lead to increased non-compliance and potential for these resources to be impacted. | Meets objective to a moderate degree. ORV use not permitted on dunes, but permitted on the ocean and inlet shoreline and existing soundside routes would potentially be open to ORV use, year-round. Night-driving restrictions reduce amount of disturbance from beach driving. Implementation of larger buffers and backshore closures would offer protection to resources. | Meets objective to a large degree, as ORV use not permitted on dunes, night-driving restrictions, and carrying capacity limits. However, a large amount of beach open to ORV use could result in impacts to physical resources. | Fully meets objective, as ORV use not permitted on dunes, night-driving restrictions, and beach parking limitations. Least amount of mileage open to ORV use year-round would minimize resource impacts. | Fully meets objectives, as ORV use not permitted on dunes, night-driving restrictions, carrying capacity limits, and soundside driving restrictions. | Meets objective to a large degree, as ORV use not permitted on dunes, night-driving restrictions, and carrying capacity limits. However, a large amount of beach open to ORV use could result in impacts to physical resources |
| Threatened, Endangered, and Other Protected Species | | | | | | |
| Provide protection for threatened, endangered, and other protected species (e.g., state-listed species) and their habitats, and minimize impacts related to ORVs and other uses as required by laws and policies such as the <i>Endangered Species Act</i> , the <i>Migratory Bird Treaty Act</i> , and NPS laws and management policies. | Meets objective to some degree, as temporary resource closures provide protection for sensitive species but buffers would require frequent adjustments to provide adequate protection. | Meets objective to a moderate degree, as increased buffer distances and night-driving restrictions provide increased levels of species protection. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use 7 months per year provide proactive (prior to breeding season) protection. | Fully meets objective with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use year-round providing large areas of resource protection. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use 5.5 months per year provide proactive (prior to breeding season) protection. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, prenesting closures and large, pre-determined buffers for breeding/nesting activity would provide proactive (prior to breeding season) protection. |
| Vegetation | | | | | | |
| Minimize impacts to native plant species related to ORV use. | Meets objective to some degree as driving on dune vegetation is prohibited, but lack of defined ORV areas or backshore closures could result in increased non-compliance and impacts to the resource. | Meets objective to a moderate degree as driving on dune vegetation is prohibited and ocean backshore closures are provided. Sensitive areas with marginal width may be open in the winter that would result in non-compliance problems. | Meets objective to a large degree by adding protective signage at soundside parking areas. Location of ORV corridor at the toe of the dune, with no buffer, may impact vegetation. | Fully meets objective as driving on dune vegetation is prohibited. Year-round SMAs protect large areas, reducing potential impacts to vegetation. ORV corridor would provide a 10 meter buffer from the toe of the dune, further protecting vegetation. | Fully meets objective by closing some soundside access areas and adding protective signage at remaining soundside parking areas. ORV corridor would provide a 10 meter buffer from the toe of the dune, further protecting vegetation. | Meets objective to a large degree by adding protective signage at soundside parking areas. However, there is the potential for damage to vegetation from new soundside access points. Location of ORV corridor at the toe of the dune, with no buffer, may impact vegetation. |
| Other Wildlife and Wildlife Habitat | | | | | | |
| Minimize impacts to wildlife species and their habitats related to ORV use. | Meets objective to some degree, as temporary resource closures provide protection for other wildlife species but buffers are not as large as other alternatives and would not offer large levels of protection. | Meets objective to a moderate degree, as increased buffer distances and night-driving restrictions provide increased levels of species protection, which would include protection to other bird and invertebrate species. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use 7 months per year. | Fully meets objective with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use year-round, which would also offer protection to other bird species and invertebrates. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use 5.5 months per year. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, prenesting closures, and year-round and seasonal VFAs that leave areas of the Seashore less disturbed for wildlife. |

Table ES-4. Analysis of How Alternatives Meet Objectives

| Objectives | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|--|--|---|--|--|---|--|
| Cultural Resources | | | | | | |
| Protect cultural resources, such as shipwrecks, archeological sites, and cultural landscapes, from impacts related to ORV use. | Meets objective to some degree as Seashore protections would be put in place for cultural resources, such as shipwrecks, but allowing driving at night and allowing access to large areas of the Seashore would provide for more access to these resources and more possibility for these resources to be disturbed. | Meets objective to a moderate degree as Seashore protection would be in place for cultural resources, such as shipwrecks, and seasonal restrictions on night driving would further limit access to these resources. Large areas of the Seashore would still be accessible by ORV and would provide some level of access to these resources. | Meets objective to a large degree as Seashore protection would be in place for cultural resources, such as shipwrecks, and seasonal restrictions on night driving would further limit access to these resources. Further protection would be provided by the establishment of SMAs that limit access to certain areas of the Seashore during certain times of year and the addition of a permit system that could be revoked for non-compliance, decreasing the probability of drivers taking non-compliant actions. | Meets objective to a large degree as Seashore protection would be in place for cultural resources, such as shipwrecks, and seasonal restrictions on night driving would further limit access to these resources. Further protection would be provided by the establishment of SMAs that limit access to certain areas of the Seashore during certain times of year and the addition of a permit system that could be revoked for non-compliance, decreasing the probability of drivers taking non-compliant actions. | Meets objective to a large degree as Seashore protection would be in place for cultural resources, such as shipwrecks, and seasonal restrictions on night driving would further limit access to these resources. Further protection would be provided by the establishment of SMAs that limit access to certain areas of the Seashore during certain times of year and the addition of a permit system that could be revoked for non-compliance, decreasing the probability of drivers taking non-compliant actions. | Meets objective to a large degree as Seashore protection would be in place for cultural resources, such as shipwrecks, and seasonal restrictions on night driving would further limit access to these resources. Further protection would be provided by the establishment of year-round and seasonal VFAs that limit access to certain areas of the Seashore during certain times of year and the addition of a permit system that could be revoked for non-compliance, decreasing the probability of drivers taking non-compliant actions. |
| Visitor Use and Experience | | | | | | |
| Ensure that ORV operators are informed about the rules and regulations regarding ORV use at the Seashore. | Meets objective to some degree as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, and on the website. No permit system would be in place to convey information or provide a mechanism for ensuring regulations are followed. | Meets objective to a moderate degree as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, on the website, and within the required night-driving permit. | Fully meets objective as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, and on the website. This alternative includes a required education component as part of the ORV permit. | Fully meets objective as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, and on the website. This alternative includes a required education component as part of the ORV permit. | Fully meets objective as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, and on the website. This alternative includes a required education component as part of the ORV permit. | Fully meets objective as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, and on the website. This alternative includes a required education component as part of the ORV permit. |
| Manage ORV use to allow for a variety of visitor use experiences. | Meets objective to some degree as ORV and VFAs are not officially designated. VFAs occur through seasonal and safety closures throughout the Seashore, but no defined use areas exist to provide for a variety of visitor use experiences. | Meets objective to some degree as ORV and VFAs are not officially designated. VFAs occur through seasonal and safety closures throughout the Seashore, but no defined use areas exist to provide for a variety of visitor use experiences. | Meets objective to a moderate degree as more defined areas for ORV and vehicle-free recreational opportunities are provided. New interdunal road access would be provided, offering additional options to ORV users. Some separation of uses and unique opportunities are provided for various user groups. | Meets objective to a moderate degree as more defined areas for ORV and vehicle-free recreational opportunities are provided. New interdunal road access would be provided, offering additional options to ORV users. Some separation of uses and unique opportunities are provided for various user groups, but large areas would be closed to all visitors for most of the year, and would not be available to provide for the visitor experience. | Meets objective to a large degree as more defined areas for ORV and vehicle-free recreational opportunities are provided. New interdunal road access would be provided, offering additional options to ORV users. Additional user opportunities would be provided including the addition of a park-and-stay options, as well as self-contained vehicle camping. The addition of pedestrian routes, additional parking on the soundside, as well as the potential for water taxi access would all contribute to offering a variety of visitor experiences. | Meets objective to a large degree as more defined areas for ORV and vehicle-free recreational opportunities are provided. New interdunal road access would be provided, offering additional options to ORV users. Additional visitor experiences would be provided through pedestrian routes, extra trails, and new parking. Providing some areas of the Seashore that are vehicle-free year-round or seasonally would provide for a greater variety of visitor experiences. |

| Objectives | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|--|--|--|---|---|---|---|
| Minimize conflicts between ORV use and other visitor uses. | Meets objective to some degree as no designated areas for uses are established, which could result in real or perceived conflicts between ORV uses and other visitor uses. | Meets objective to some degree as no designated areas for uses are established, which could result in real or perceived conflicts between ORV uses and other visitor uses. | Meets objective to a large degree as designation of ORV and VFAs would help minimize conflicts. Implementation of a permit system would provide additional education and the ability to revoke permits would likely increase compliance with ORV use regulations and further reduce conflicts. Seasonal night-driving restrictions would also reduce potential visitor use conflicts. | Meets objective to a large degree as designation of ORV and VFAs would help minimize conflicts. Implementation of a permit system would provide additional education and the ability to revoke permits would likely increase compliance with ORV use regulations and further reduce conflicts. Seasonal night-driving restrictions would also reduce potential visitor use conflicts. | Meets objective to a large degree as designation of ORV and VFAs would help minimize conflicts. Implementation of a permit system would provide additional education and the ability to revoke permits would likely increase compliance with ORV use regulations and further reduce conflicts. Seasonal night-driving restrictions would also reduce potential visitor use conflicts. | Meets objective to a large degree as designation of ORV and VFAs would help minimize conflicts. Implementation of a permit system would provide additional education and the ability to revoke permits would likely increase compliance with ORV use regulations and further reduce conflicts. Seasonal night-driving restrictions would also reduce potential visitor use conflicts. |
| Visitor Safety | | | | | | |
| Ensure that ORV management promotes the safety of all visitors. | Meets objective to a moderate degree as ORV safety closures would be provided, as well as right-of-way and unsafe operation regulations contained in the CFR. | Meets objective to a large degree as ORV safety closures would be provided, as well as right-of-way and unsafe operation regulations contained in the CFR. Increased signage, lower speed limits, and increased public awareness would contribute to visitor safety. | Fully meets objective as ORV safety closures would be provided. Reduced speed limits would also apply in all areas. Village beaches would be closed to ORV use during the summer. Permit requirement would provide further information for increasing visitor safety. | Fully meets objective. Although ORV safety closures would not be provided, areas where these occur would be closed year-round as SMAs. Village beaches would be closed to ORVs year-round. Reduced speed limits would also apply in all areas. | Fully meets objective as ORV safety closures would be provided. Reduced speed limits would also apply in all areas. Beach width requirements would limit some ORV use in narrow beach areas and village beaches would be closed to ORV use during the summer. | Fully meets objective. Speed limits, village beach closures, and safety closures would be provided. Also, additional pedestrian safety and right-of-way requirements would provide increased protection. |
| Seashore Operations | | | | | | |
| Identify operational needs and costs to fully implement an ORV management plan. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. |
| Identify potential sources of funding necessary to implement an ORV management plan. | Meets objective to a moderate degree. Funding expected under annual budget, but no additional funding source provided. | Meets objective to a moderate degree. Funding expected under annual budget, but no additional funding source provided. | Meets objective to a large degree. Funding expected under annual budget, additional funding would occur by from permit fees utilizing cost recovery. | Meets objective to a large degree. Funding expected under annual budget, additional funding would occur by from permit fees utilizing cost recovery. | Meets objective to a large degree. Funding expected under annual budget, additional funding would occur by from permit fees utilizing cost recovery. | Meets objective to a large degree. Funding expected under annual budget, additional funding would occur by from permit fees utilizing cost recovery. |
| Provide consistent guidelines, according to site conditions, for ORV routes, ramps, and signage. | Meets objective to some degree. Guidelines are not set and conditions would not be predictable. | Meets objective to a moderate degree. Increased signage would be consistent, but no consistent guidelines for routes and ramps would exist. | Meets objective to a large degree. Guidelines for ramp establishment and maintenance, signage, and routes would be established. | Meets objective to a large degree. Guidelines for ramp establishment and maintenance, signage, and routes would be established. | Meets objective to a large degree. Guidelines for ramp establishment and maintenance, signage, and routes would be established. | Meets objective to a large degree. Guidelines for ramp establishment and maintenance, signage, and routes would be established. |

Note: Objectives are measured as fully meets objective, largely meets objective, moderately meets objective, or meets objective to some degree.

TABLE ES-5. ENVIRONMENTAL IMPACT SUMMARY BY ALTERNATIVE

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|---------------------------------|---|---|--|--|--|--|
| Wetlands and Floodplains | | | | | | |
| Wetlands | Impacts of the Alternative on Marine Intertidal Wetlands: Under all alternatives, there would be short term, negligible adverse impacts to marine intertidal wetlands due to continued ORV use in these areas | | | | | |
| | Impacts of the Alternative: Under alternative A, there would be long-term minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. | Impacts of the Alternative: Under alternative B, there would be long-term minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. | Impacts of the Alternative: Under alternative C, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by the installation of signage. | Impacts of the Alternative: Under alternative D, there would be long-term negligible to minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side, which would not be protected with signage. Impacts to vegetated wetlands along interior ORV routes would continue. | Impacts of the Alternative: Under alternative E, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by signage and closures of soundside access points. | Impacts of the Alternative: Under alternative F, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by the installation of signage. |
| | There would be no construction (or related impacts) under the no-action alternatives. | There would be no construction (or related impacts) under the no-action alternatives. | Construction activities would avoid wetland areas, resulting in indirect, long-term negligible adverse impacts to wetlands. | Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands. | Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands. | Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands. |
| | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. |
| Floodplains | Impacts of the Alternative: There would be no construction under alternative A. As a result, there would be no impacts to the functions or values of floodplains. | Impacts of the Alternative: There would be no construction under alternative B. As a result, there would be no impacts to the functions or values of floodplains. | Impacts of the Alternative: Under alternative C, there would be long-term minor adverse impacts to floodplains due to the construction or expansion of seven parking areas in the floodplain. | Impacts of the Alternative: Under alternative D there would be long-term negligible adverse impacts to floodplains due to the location of four ORV access ramps in the 100-year floodplain. | Impacts of the Alternative: Under alternative E, there would be long-term minor adverse impacts to floodplains due to the construction or expansion of 14 parking areas in the floodplain. | Impacts of the Alternative: Under alternative F, there would be long-term minor adverse impacts to floodplains due to the construction or expansion of 12 surfaced and 2 unsurfaced parking areas in the floodplain. |
| | Cumulative Impacts: No cumulative impacts would occur. | Cumulative Impacts: No cumulative impacts would occur. | Cumulative Impacts: Cumulative impacts to floodplains would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to floodplains would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to floodplains would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to floodplains would be long-term minor to moderate adverse. |

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|--|---|--|--|--|--|--|
| Federally Listed Threatened or Endangered Species | | | | | | |
| Piping Plover | <p>Impacts of the Alternative: Overall, impacts to piping plover from resource management activities (primarily as a result of surveys and field activities) would be long-term minor to moderate adverse. Although the management of the species would provide a certain level of benefit, the manner in which buffers would be established, along with the need to adjust buffers frequently would have an adverse impact on the species.</p> <p>Overall, impacts to piping plover from ORV and other recreational use would be long-term moderate to major adverse as much of the Seashore would be open to recreational use, with an increased potential that piping plover could be impacted due to disturbance from ORV use and other recreational activities. Lack of a permit system for education and law enforcement, no night-driving restrictions, and lack of compliance with pet leash requirements would contribute substantially to these adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term moderate to major adverse.</p> | <p>Impacts of the Alternative: Overall, impacts under alternative B from resource management activities (primarily resulting from the effects of surveying and field activities) would be long-term minor to moderate beneficial. Buffers for piping plover would be larger and provide more protection compared to buffers under alternative A. Minor adverse impacts would occur from human presence during monitoring activities, but on the whole the establishment of prenesting closures early in the breeding season, monitoring activities, education and outreach efforts, and establishment of prescribed buffers would provide long-term minor to moderate beneficial impacts to the species.</p> <p>Overall, impacts to piping plover from ORV and other recreational use would be long-term moderate adverse. While some buffers would be increased in an attempt to separate recreational uses from piping plover, access to these buffers would be provided at all Seashore beaches and could result in intentional or un-intentional non-compliance (i.e., when signs are washed out), which would impact the species. Adverse impacts would also occur due to limited prenesting protection outside of the points and spits, and the potential for protective buffers to be reduced during critical life stages of plover chicks.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term moderate adverse.</p> | <p>Impacts of the Alternative: Overall impacts under alternative C from resources management activities (primarily resulting from the effects of surveying and field activities) would be long-term moderate beneficial. As with alternative B, minor adverse impacts would occur from human presence during monitoring activities, but on the whole the establishment of SMAs early in the breeding season, monitoring activities, and establishment of prescribed buffers would provide long-term moderate beneficial impacts to the species.</p> <p>Overall, impacts to piping plover from ORV and other recreational use would be long-term minor adverse. The establishment of the SMAs which proactively reduce or preclude recreational use early in the breeding season, ORV permit requirements, seasonal night-driving restrictions, and pet and other recreational activity restrictions would all provide benefits in terms of species protection. As there would still be some opportunity for recreational use to come in contact with and impact piping plovers, and the fact that alternative C would still include some level of pedestrian access to three SMAs during a portion of the breeding season, impacts to piping plover would be long-term minor adverse.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term minor adverse.</p> | <p>Impacts of the Alternative: Overall impacts to piping plover from resources management activities (primarily resulting from the effects of surveying and field activities) under alternative D would be long-term moderate to major beneficial. As with all species management activities, minor adverse impacts would occur from human presence during monitoring, but on the whole the implementation of SMAs that prohibit ORV use year-round and only allow pedestrian access outside of the breeding season, establishment of prenesting closures early in the breeding season, monitoring activities, and establishment of prescribed buffers would provide long-term moderate to major beneficial impacts to the species.</p> <p>Overall impacts from ORV and other recreational use would be long-term minor adverse. The establishment of SMAs that are closed to ORVs year-round and managed under ML1 procedures during the breeding season would proactively preclude recreational use early in the breeding season from large areas of the Seashore, which would reduce the potential for disturbance to plovers during critical life stages. This protection, combined with ORV permit requirements, seasonal night-driving restriction, and pet and other recreational activities restrictions would all provide benefits in terms of species protection. As there would still be some opportunity for recreational use to come in contact with and impact the species, impacts would be long-term minor adverse.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term minor adverse.</p> | <p>Impacts of the Alternative: Overall impacts under alternative E from resources management activities (primarily resulting from the effects of surveying and field activities) would be long-term moderate and beneficial for piping plovers. As with all species management activities, minor adverse impacts would occur from human presence during monitoring activities, but on the whole the establishment of SMAs early in the breeding season, monitoring activities, and establishment of prescribed buffers would provide long-term moderate beneficial impacts to the species.</p> <p>Long-term moderate benefits to nonbreeding populations would be greater under alternative F than under alternatives C or E because of the addition of the year-round VFAs.</p> <p>Overall impacts under alternative F from ORV and other recreational use would be long-term minor to moderate adverse. The establishment of prenesting closures, year-round and seasonal VFAs, ORV permit requirements, and pet and other recreational activity restrictions would all provide benefits in terms of species protection. As alternative F would provide for more flexible access to various areas of the Seashore, the potential for disturbance to piping plover is increased over alternatives C and D, resulting in long-term minor to moderate adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Overall impacts under alternative F from resources management activities (primarily resulting from the effects of surveying and field activities) would be long-term moderate and beneficial for piping plovers. As with all species management activities, minor adverse impacts would occur from human presence during monitoring activities, but on the whole the establishment of prenesting closures, monitoring activities, and establishment of prescribed buffers would provide long-term moderate beneficial impacts to the species.</p> <p>Long-term moderate benefits to nonbreeding populations would be greater under alternative F than under alternatives C or E because of the addition of the year-round VFAs.</p> <p>Overall impacts under alternative F from ORV and other recreational use would be long-term minor to moderate adverse. The establishment of prenesting closures, year-round and seasonal VFAs, ORV permit requirements, and pet and other recreational activity restrictions would all provide benefits in terms of species protection. As alternative F would provide for more flexible access to various areas of the Seashore, the potential for disturbance to piping plover is increased over alternatives C and D, resulting in long-term minor to moderate adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term minor to moderate adverse.</p> |

Table ES-5. Environmental Impact Summary by Alternative

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| Sea Turtles | <p>Impacts of the Alternative: Overall, resources management activities under alternative A would have long-term moderate benefits due to the protection provided to sea turtles. Overall, ORV and other recreational use under alternative A would result in long-term major adverse impacts to sea turtles due to the amount of Seashore available for ORV use and the lack of night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term moderate to major adverse.</p> | <p>Impacts of the Alternative: Overall, resource management activities under alternative B would have long-term moderate benefits due to the protection provided to sea turtles. Although additional restrictions and regulations would help lessen some of the impacts from ORV use and other recreational activities, overall, the impacts would be long-term moderate adverse.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term moderate adverse.</p> | <p>Impacts of the Alternative: Overall, resource management activities under alternative C would have long-term moderate to major beneficial impacts due to the added protection provided to sea turtles. Restrictions placed on nonessential, recreational ORV use under alternative C would provide substantial long-term benefits to sea turtles, including seasonal night-driving restrictions that close the beach before dark (7:00 p.m.), some adverse impacts would still occur in areas where their use is allowed. Therefore, overall, ORV and other recreational use would have long-term minor adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Overall, similar to alternative C, management activities under alternative D would result in long-term moderate to major beneficial impacts.</p> <p>While restrictions placed on ORV use under alternative D would provide long-term moderate to major beneficial impacts, similar to alternative C, there would still be some level of adverse impact to sea turtles in areas where ORV use and beach fires are allowed; therefore, overall impacts from ORV and other recreational use would be long-term minor adverse.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term minor adverse.</p> | <p>Impacts of the Alternative: Management activities would provide long-term moderate to major beneficial impacts to sea turtles. While additional restrictions and regulations would help lessen some of the impacts from ORVs and other recreational activities, overall, the impacts would be long-term moderate adverse from allowing night driving until 10:00 p.m., and due to increased recreational access throughout the Seashore during the turtle nesting season, including a park-and-stay option for ORVs at selected points and spits.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term moderate adverse.</p> | <p>Impacts of the Alternative: Overall, resource management activities would provide long-term moderate to major beneficial impacts to sea turtles. While additional restrictions, such as prohibiting night driving from 9:00 p.m. to 7:00 a.m and regulations would help lessen some of the impacts from ORV and other recreational use, overall, the impacts would be long-term minor to moderate adverse, due to not prohibiting night driving prior to 9:00 p.m. and the earlier re-opening of prenesting areas (after shorebird breeding activity has concluded), resulting in increased recreational access throughout the Seashore during the sea turtle nesting season.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term minor to moderate adverse.</p> |
| Seabeach Amaranth | <p>Impacts of the Alternative: Overall, because of the protection of seabeach amaranth habitat and plants under alternative A, resources management actions would have long-term minor to moderate beneficial impacts, if plants are detected. Overall, ORV and other recreational use under alternative A would have long-term moderate adverse impacts as plants may go undetected and therefore unprotected from this use.</p> <p>Cumulative Impacts: Cumulative impacts to seabeach amaranth would be long-term moderate adverse.</p> | <p>Impacts of the Alternative: Overall, because of the protection of seabeach amaranth habitat and plants under alternative B, resources management actions would have long-term minor to moderate beneficial impacts, if plants are detected. Overall, ORV and other recreational use would result in long-term moderate adverse impacts. Slightly more protection would be provided for the species when compared to alternative A, due to shorebird breeding closures being larger and lasting longer.</p> <p>Cumulative Impacts: Cumulative to seabeach amaranth would be long-term moderate adverse.</p> | <p>Impacts of the Alternative: Overall, because of the protection of seabeach amaranth habitat and plants under alternative C, resources management actions would have long-term moderate beneficial impacts to seabeach amaranth as the establishment of SMAs and increased protection for the species would occur compared to alternatives A and B. Overall, ORV and other recreational use would result in long-term minor to moderate adverse impacts. Because of the establishment of SMAs and protection of approximately 40 miles of beach, the adverse impacts under alternative C would likely be long-term minor to moderate adverse.</p> <p>Cumulative Impacts: Cumulative impacts to seabeach amaranth would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Overall, because of the increased level of protection of seabeach amaranth habitat and plants under alternative D, when compared to other alternatives, resources management actions would have long-term moderate to major beneficial impacts. Overall ORV and other recreational use would result in long-term minor adverse impacts. Because the establishment of SMAs closed to ORVs year-round would protect approximately 40 miles of beach, the adverse impacts under alternative D would be greatly reduced compared to the other alternatives and result in long-term minor adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to seabeach amaranth would be long-term minor adverse.</p> | <p>Impacts of the Alternative: Overall, because of the protection of seabeach amaranth habitat and plants under alternative E, resources management actions would have long-term minor to moderate beneficial impacts as ORV access to more areas would be allowed during the germination period, than under action alternatives C and D. Overall, ORV and other recreational use would have long-term minor to moderate adverse impacts to seabeach amaranth due to the increased level of recreational access allowed when compared to the other action alternatives.</p> <p>Cumulative Impacts: Cumulative impacts to seabeach amaranth would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Overall, because of the protection of seabeach amaranth habitat and plants under alternative F, resources management actions would have long-term minor to moderate beneficial impacts as ORV access to more areas would be allowed during the germination period, than under action alternatives C and D. Overall, ORV and other recreational use would be similar to those under alternative E and result in long-term minor to moderate adverse impacts to seabeach amaranth.</p> <p>Cumulative Impacts: Cumulative impacts to seabeach amaranth would be long-term minor to moderate adverse.</p> |

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| State-Listed and Special Status Species | | | | | | |
| American Oystercatcher | <p>Impacts of the Alternative: Impacts would be long-term minor to moderate adverse as surveying and lack of specific prenesting closures for this species may miss early nesters. Piping plover prenesting closures, which could be utilized by this species as well, would not protect a number of American oystercatcher nest sites used in recent years. Also, buffer distances based on bird behavior may not provide adequate protection for the species.</p> | <p>Impacts of the Alternative: Establishment of piping plover prenesting closures earlier in the season that could be used by oystercatchers and establishment of larger, pre-set buffers would result in long-term beneficial impacts to American oystercatchers. While there would still be minor adverse impacts related to human disturbance during field activities, resources management activities on the whole would provide information and result in actions that would be beneficial to the species.</p> | <p>Impacts of the Alternative: Implementation of 10 SMAs that are closed to ORVs during the breeding season would provide a proactive resource closure early in the breeding season. Establishment of prenesting closures earlier in the season and establishment of larger, pre-set buffers would result in long-term beneficial impacts to American oystercatchers. While there would still be minor adverse impacts related to human disturbance during field activities, on the whole, resources management activities would provide information that would enable the implementation of adaptive management initiatives and contribute to better management. These activities would result in long-term beneficial impacts to the American oystercatcher, greater than those provided under alternative B.</p> | <p>Impacts of the Alternative: Establishment of 10 SMAs that are closed to ORVs year-round and all managed under ML1 procedures during the breeding season would provide long-term benefits to breeding and wintering American oystercatchers, greater than those under alternative C. Additional benefits would be provided from surveying and closures outside of these established SMAs, as well as from the education and outreach provided. These surveying and field activities would provide information that would enable the implementation of adaptive management initiatives and contribute to better management. These activities would result in long-term beneficial impacts to this species, greater than those provided under alternative B.</p> | <p>Impacts of the Alternative: Implementation of 10 SMAs, 7 of which are closed to ORVs during the breeding season, would provide a proactive resource closure early in the breeding season. Establishment of prenesting closures earlier in the season and establishment of larger, pre-set buffers would result in long-term beneficial impacts to American oystercatchers. While there would still be minor adverse impacts from human disturbance during field activities, resources management activities on the whole would provide information that would enable the implementation of adaptive management initiatives and contribute to better management. These activities would result in long-term beneficial impacts to this species, greater than those provided under alternative B.</p> | <p>Impacts of the Alternative: Implementation of prenesting closures would provide a proactive resource closure early in the breeding season. Seasonal and year-round VFAs that total 39 miles of Seashore would provide additional areas with less disturbance for shorebirds. Establishment of prenesting closures earlier in the season and establishment of larger, pre-set buffers would result in long-term beneficial impacts to American oystercatchers. While there would still be minor adverse impacts related to human disturbance during field activities, resources management activities on the whole would provide information that would enable the implementation of adaptive management initiatives and contribute to better management. These activities would result in long-term beneficial impacts to the species, greater than those provided under alternative B.</p> |

Table ES-5. Environmental Impact Summary by Alternative

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| American Oystercatcher (continued) | Impacts would be long-term moderate to major adverse as buffers that adjust frequently based on bird behavior are more subject to non-compliance. The lack of designated VFAs, a permitting system, carrying capacity, or seasonal night-driving restrictions, and allowing pets at the Seashore during breeding season would contribute to these adverse impacts. | Establishment of prenesting closures for piping plover earlier in the season, implementation of larger, more immediate buffers, longer lasting closures for American oystercatchers once breeding behavior occurs, and night-driving restrictions would benefit the American oystercatcher. However, recreational use, with no carrying capacity, would still occur in the vicinity of this species and the established buffers may not be large enough to afford adequate protection. Because the birds would not be under constant observation, disturbance may go undetected and implementation of adequate buffers may be delayed in some nesting locations. Compliance with closures may not be absolute, resulting in minor to moderate adverse impacts if non-compliance occurs. Further adverse impacts would result from allowing pets in the Seashore during breeding season, resulting in the possibility of non-compliance with these regulations. Because of these factors, impacts to American oystercatchers from ORV use and other recreational activities would be long term moderate adverse. | Implementation of a permit system with an educational component, larger buffer sizes, seasonal night-driving restrictions, establishment of breeding and nonbreeding SMAs, and not allowing pets in SMAs would benefit the American oystercatcher. SMAs would provide a proactive method of limiting recreational uses early in the breeding season, and limit the potential for impacts to state-listed/special status species. However, alternative C does manage three SMAs under ML2 procedures, which provide for some level of pedestrian access into these areas, and introduces the potential for impacts to the species. Although there would be some protection measures in place, ORV and other recreational use could still have impacts to the species, resulting in long-term minor to moderate adverse impacts to American oystercatchers. | Providing large SMAs that are closed year-round to ORVs and closed to pedestrians during the breeding season would provide large undisturbed areas for both breeding and nonbreeding oystercatchers. Further benefits would be provided by seasonal night-driving restrictions, the establishment of a permit system with an educational component, and prohibition of pets in SMAs year-round. With these measures in place, impacts to American oystercatchers from ORV and other recreational use would be long-term minor adverse, as the chance of disturbance still exists, but would be lower than that under the other alternatives evaluated. | Implementation of a permit system with an educational component, larger buffer sizes, seasonal night-driving restrictions, restrictions on pets in SMAs, and establishment of breeding and nonbreeding SMAs would benefit the American oystercatcher. SMAs would provide a proactive method of limiting recreational uses early in the breeding season, and limit the potential for impacts to state-listed/special status species. However, alternative E does allow an ORV access corridor at three SMAs managed under ML2 procedures during the breeding season (more than the other action alternatives), which provide for some level of pedestrian or ORV access into these area, which introduces the potential for impacts to the species. Although there would be some protection measures in place, recreational use could still result in long-term minor to moderate adverse impacts to American oystercatchers. | Implementation of a permit system with an educational component, prenesting closures, seasonal night-driving restrictions, allowing pets under the regulations of 36 CFR 2.15 with the additional prohibition of pets in resource closures and in pedestrian shoreline access areas in front of (i.e., seaward of) bird prenesting areas and establishment of seasonal and year-round VFAs that total 39 miles of Seashore would benefit the American oystercatcher. Prenesting closures would provide a proactive method of limiting recreational uses early in the breeding season, and limit the potential for impacts to state-listed/special status species, with additional areas that are relatively less disturbed provided by prenesting closures. However, alternative F does manage all areas of the Seashore to allow for ORV and/or pedestrian access, which introduces the potential for impacts to the species. As there would be some protection measures in place, but recreational use could still have impacts to the species, impacts to American oystercatchers would be long-term minor to moderate adverse. |

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| Colonial Waterbirds | <p>Impacts of the Alternative: Impacts would be long-term minor to moderate adverse as no prenesting closures would be established for colonial waterbirds. Some species, such as terns and black skimmers, may be able to utilize the prenesting closures established for piping plovers; however, those prenesting areas would not protect a number of colonial waterbird nest sites used in recent years. Also, buffer distances based on bird behavior may not provide adequate protection for the species.</p> <p>Impacts would be long-term moderate to major adverse as buffers may not be adequate to protect the species, and disturbance from recreational uses is more likely. The lack of designated VFAs, a permitting system, carrying capacity, or seasonal night-driving restrictions, and allowing pets in the vicinity of breeding birds would also contribute to adverse impacts.</p> | <p>Impacts of the Alternative: Establishment of piping plover prenesting closures earlier in the season that would be used by some colonial waterbird species and establishment of larger, pre-set buffers would result in long-term beneficial impacts to colonial waterbirds. While there would still be minor adverse impacts related to human disturbance during field activities, resources management activities on the whole would provide information and result in actions that would be beneficial to the species.</p> <p>Impacts to colonial waterbirds from ORV and other recreational use would be long-term moderate adverse, for the same reasons as American oystercatchers under this alternative.</p> | <p>Impacts of the Alternative: Impacts to colonial waterbirds from surveying and field activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers.</p> | <p>Impacts of the Alternative: Impacts to colonial waterbirds from surveying and field activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers.</p> | <p>Impacts of the Alternative: Impacts to colonial waterbirds from resources management activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers.</p> | <p>Impacts of the Alternative: Impacts to colonial waterbirds from resources management activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers.</p> |

Table ES-5. Environmental Impact Summary by Alternative

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| Wilson's Plover | <p>Impacts of the Alternative: Impacts would be long-term minor adverse as the habitat for this species would be well surveyed during piping plover surveys and this species would be able to take advantage of management measures for piping plover as their breeding seasons and habitat requirements are similar. Also, buffer distances based on bird behavior may not provide adequate protection for the species. Some benefits may occur from incidental management of Wilson's plover during piping plover management activities, both during breeding and nonbreeding seasons.</p> <p>Impacts would be long-term moderate to major adverse as no specific management would be provided for this species, although they could utilize buffers and closures established for piping plover. The lack of designated VFAs, a permitting system, carrying capacity, or seasonal night-driving restrictions, and allowing pets at the Seashore during breeding season would contribute to these adverse impacts.</p> | <p>Impacts of the Alternative: Establishment of piping plover prenesting closures earlier in the season that could be used by other species and establishment of larger, pre-set buffers for piping plover, used by Wilson's plover, would result in long-term beneficial impacts to Wilson's plover. While there would still be minor adverse impacts related to human disturbance during field activities, species surveying and field activities on the whole would provide information and result in actions that would be beneficial to the species.</p> <p>Impacts to Wilson's plover from ORV and other recreational use would be long-term minor to moderate adverse. Although this species would face the same adverse impacts as American oystercatchers and colonial waterbirds, it also tends to utilize closures for piping plover and would therefore be provided slightly more protection than other state-listed/special status species.</p> | <p>Impacts of the Alternative: Impacts to Wilson's plover from surveying and field activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers, with slightly greater benefits as this species would also benefit from the management measures applied to piping plover.</p> <p>Impacts to Wilson's plover from ORV and other recreational use would be long-term minor adverse, less than those under alternative A and B. Although this species would face the same adverse impacts as American oystercatchers and colonial waterbirds, it also tends to utilize closures for piping plover, in addition to the specific buffers/closures provided for the species, and would therefore be provided slightly more protection than other state-listed/special status species.</p> | <p>Impacts of the Alternative: Impacts to Wilson's plover from surveying and field activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers, with slightly greater benefits as this species would also benefit from the management measures applied to piping plover.</p> <p>Impacts to Wilson's plover from ORV and other recreational use would be long-term negligible to minor adverse. Although this species would face the same adverse impacts as American oystercatchers and colonial waterbirds, it also tends to utilize closures for piping plover, in addition to the buffers/closures provided specifically for this species, and would therefore be provided slightly more protection than other state-listed/special status species.</p> | <p>Impacts of the Alternative: Impacts to Wilson's plover from resources management activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers, with slightly greater benefits as this species would also benefit from the management measures applied to piping plover.</p> <p>Impacts to Wilson's plover from ORV and other recreational use would be long-term minor adverse. Although this species would face the same adverse impacts as American oystercatchers and colonial waterbirds, it also tends to utilize closures for piping plover, in addition to the buffers/closures provided specifically for this species, and would therefore be provided slightly more protection than other state-listed/special status species.</p> | <p>Impacts of the Alternative: Impacts to Wilson's plover from resources management activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers, with slightly greater benefits as this species would also benefit from the management measures applied to piping plover.</p> <p>Impacts to Wilson's plover from ORV and other recreational use would be long-term minor adverse. Although this species would face the same adverse impacts as American oystercatchers and colonial waterbirds, it also tends to utilize closures for piping plover, in addition to the buffers/closures provided specifically for this species, and would therefore be provided slightly more protection than other state-listed/special status species.</p> |

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| Red Knot | <p>Impacts of the Alternative Common to All: Many of the surveying and field activities for other species would occur outside of the primary time when the red knot is a resident at the Seashore. Therefore, any impacts to this species from surveying and field activities for other species would be long-term negligible adverse.</p> <p>Impacts to nonbreeding red knot would be long-term minor adverse as their prime foraging habitat (ocean shoreline) would not be afforded protection by nonbreeding closures, although the ability of this species to use wintering closures for piping plover at inlets and Cape Point would result in some benefit.</p> <p>Impacts would be long-term moderate adverse as no specific management would be provided for this species especially during a key life stage of wintering. The lack of designated VFAs, a permitting system, or night-driving restrictions when red knots are at the Seashore, and allowing pets at the Seashore during the migrating/nonbreeding season would contribute to these adverse impacts. Impacts to red knots would be lower than other species as they would not be subject to impacts during their breeding cycle and their use of the Seashore corresponds to times of lower visitation.</p> | <p>The red knot would benefit from extended breeding season closures for other species and from wintering closures for piping plover at the inlets and Cape Point. Impacts to nonbreeding red knot would be long-term minor adverse as their prime foraging habitat (ocean shoreline) would not be afforded protection by nonbreeding closures.</p> <p>Impacts to red knots from ORV and other recreational use would be long-term moderate adverse as no specific management would be provided for this species especially during a key life stage of wintering. Although this species may benefit from longer lasting breeding season closures for other species and from winter closures established for piping plovers, the lack of designated VFAs, a year-round permitting system, no night-driving restrictions when red knots are at the Seashore, and allowing pets at the Seashore during the migrating / nonbreeding season would contribute to these adverse impacts.</p> | <p>Nonbreeding Shorebird SMAs and the establishment of VFAs along the ocean shoreline would result in beneficial impacts to nonbreeding red knots. However, the ability of this species to use wintering closures that have been established for piping plover as well as the establishment of SMAs, some of which are closed to ORVs year-round, would be beneficial to those red knot that happen to use those areas, and overall result in long-term beneficial impacts to the species when compared to alternatives A and B.</p> <p>Impacts to red knot from recreation and other activities would be long-term minor adverse due to the additional nonbreeding closures provided under alternative C that offer this wintering species further protection.</p> | <p>Nonbreeding Shorebird SMAs and the establishment of VFAs along the ocean shoreline would result in beneficial impacts to nonbreeding red knots. However, the ability of this species to use wintering closures that have been established for piping plover as well as the establishment of SMAs, some of which are closed year-round, would be beneficial, and overall result in long-term beneficial impacts to the species when compared to alternatives A and B.</p> <p>Impacts to red knot from recreation and other activities would be long-term negligible to minor adverse due to the additional nonbreeding closures provided under alternative D that offer this wintering species further protection, as well as the large year-round SMAs that would offer further protection during red knot wintering.</p> | <p>The ability of this species to use wintering closures that have been established for piping plover as well as the establishment of SMAs, some of which are closed year-round, would be beneficial, and overall result in long-term beneficial impacts to the species when compared to alternatives A and B.</p> <p>Impacts to red knot from ORV and other recreational use would be long-term minor adverse due to the additional nonbreeding closures provided under alternative E that offer this wintering species further protection; however, there would be greater adverse impacts than under alternatives D or F due to fewer miles of shoreline being closed to ORVs under alternative E during the nonbreeding season.</p> | <p>The ability of this species to use wintering closures that have been established for piping plover as well as the establishment of year-round and seasonal VFAs over 39 miles of the Seashore (of which 26 miles would be year-round and provide protection of nonbreeding habitat) would be beneficial, and overall result in long-term beneficial impacts to the species when compared to alternatives A and B.</p> <p>Impacts to red knot from ORV and other recreational use would be long-term minor adverse due to the wintering closures established for piping plover, as well as the 26 miles of year-round VFAs that provide less disturbed nonbreeding habitat.</p> |
| All State-Listed and Special Status Species | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term moderate to major adverse. | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term moderate adverse. | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term minor to moderate adverse. | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term minor adverse. | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term minor to moderate adverse. | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term minor to moderate adverse. |

Table ES-5. Environmental Impact Summary by Alternative

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| Wildlife and Wildlife Habitat - Other Bird Species | Impacts of the Alternative Common to All: Many of the surveying and field activities for protected species would occur outside of the primary time when other bird species are residents at the Seashore. Therefore, any impacts to other bird species from surveying and field activities for protected species would be long-term negligible adverse. | | | | | |
| | Impacts of the Alternative: Impacts to other bird species from resources management activities would be long-term minor adverse as nonbreeding closures would not be species-specific and therefore would not protect important habitat areas such as the ocean shoreline. Impacts of ORV and other recreational use would be long-term moderate adverse as no specific management would be provided for this species, increasing the possibility of disturbance to the species from recreational use. The lack of designated VFAs, a permitting system, or night-driving restrictions during the time period when these species are present at the Seashore, and allowing ORVs, people and pets at the Seashore during the nonbreeding season in the vicinity of these species would contribute to adverse impacts. There would be no construction and therefore no construction-related to disturbance to other bird species under the no-action alternatives. | Impacts of the Alternative: Impacts to other bird species would be long-term minor adverse as nonbreeding closures would not be species-specific and therefore would not protect important habitat areas such as the ocean shoreline when many of these species are wintering or migrating. Impacts of ORV and other recreational use would be long-term moderate adverse as no specific management would be provided for this species, increasing the possibility of disturbance to the species from recreational use. The lack of designated VFAs, allowing night driving during the time period when other bird species are present at the Seashore, and allowing ORVs, people and pets at the Seashore during the nonbreeding season in the vicinity of these species would contribute to adverse impacts. | Impacts of the Alternative: The establishment of both breeding and nonbreeding SMAs, some of which are closed to ORVs year-round, would result in long-term beneficial impacts to other bird species. Beneficial impacts would be greater than those under alternative C due to the amount of mileage closed to ORV use year-round. Impacts from ORV and other recreational use would be long-term minor adverse due to the additional nonbreeding closures provided under alternative C that offer wintering species further protection. | Impacts of the Alternative: The establishment of SMAs, which would be closed to ORVs year-round, would result in long-term beneficial impacts to other bird species. Beneficial impacts would be greater than those under alternative C due to the amount of mileage closed to ORV use year-round. ORV and other recreational use would result in long term negligible to minor adverse impacts to other bird species due to additional nonbreeding closures provided under alternative E that offer species further protection, with greater adverse impacts than under alternatives D or F from fewer miles of shoreline being closed to ORVs under alternative E during the nonbreeding season. Adverse impacts would be greater than those under alternatives C or D due to the increased level of recreational access provided under alternative E. | Impacts of the Alternative: The establishment of both breeding and nonbreeding SMAs, some of which are closed to ORVs year-round, would result in long-term beneficial impacts to other bird species. ORV and other recreational use would result in long term negligible to minor adverse impacts to other bird species due to additional nonbreeding closures provided under alternative E that offer species further protection, with greater adverse impacts than under alternatives D or F from fewer miles of shoreline being closed to ORVs under alternative E during the nonbreeding season. Adverse impacts would be greater than those under alternatives C or D due to the increased level of recreational access provided under alternative E. | Impacts of the Alternative: The establishment of prenesting areas, seasonal and year-round VFAs, and wintering habitat closures would result in long-term beneficial impacts to other bird species. Additional benefits, when compared to the other alternatives, would be realized under alternative F from nonbreeding closures as well as the 26 miles of year-round VFAs that would provide protection during this time. Impacts to other bird species from ORV and other recreational use would be long-term minor adverse due to the additional nonbreeding closures provided under alternative F that offer wintering species further protection. |
| | Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (other bird species) would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (other bird species) would be long-term minor adverse. | Cumulative Impacts: Impacts to other bird species from construction activities would be short-term negligible to minor and adverse due to temporary displacement during construction activities. | Cumulative Impacts: Impacts to other bird species from construction activities would be short-term negligible to minor and adverse due to temporary displacement during construction activities. | Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (other bird species) would be long-term negligible to minor adverse. | Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (other bird species) would be long-term minor adverse. |

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| Wildlife and Wildlife Habitat - Invertebrates | Impacts of the Alternative Common to All: The use of vehicles to conduct resources management activities would result in long-term negligible adverse impacts to invertebrates due to the potential for mortality of individual invertebrate species. | | | | | |
| | <p>Impacts of the Alternative: Recreational ORV use would result in long-term minor to moderate adverse impacts to invertebrate species primarily due to mortality arising from unlimited night driving in the intertidal and wrack areas.</p> <p>There would be no construction and therefore no construction-related to disturbance to invertebrates under the no-action alternatives.</p> <p>Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Recreational ORV use would result in long-term minor adverse impacts to invertebrate species resulting from the continued use of ORVs in invertebrate habitat. Impacts would be reduced when compared to alternative A due to limitations on ORV use at night and within the larger resources management closures under alternative B.</p> <p>There would be no construction and therefore no construction-related to disturbance to invertebrates under the no-action alternatives.</p> <p>Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Recreational ORV use would result in long-term negligible to minor adverse impacts to invertebrate species resulting from the continued use of ORVs in invertebrate habitat. Impacts would be reduced due to longer seasonal restrictions on vehicle use under alternative C.</p> <p>Short term negligible adverse impacts to invertebrates would occur due to temporary displacement during construction activities.</p> <p>Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term minor adverse.</p> | <p>Impacts of the Alternative: Recreational ORV use would result in long-term negligible adverse impacts to invertebrate species resulting from the continued use of ORVs in invertebrate habitat. Impacts to invertebrates would be reduced under this alternative due to the amount of beach closed to recreational use.</p> <p>Short term negligible adverse impacts to invertebrates would occur due to temporary displacement during construction activities.</p> <p>Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term negligible to minor adverse.</p> | <p>Impacts of the Alternative: Recreational ORV use would result in long-term minor adverse impacts to invertebrate species resulting from the continued use of ORVs in invertebrate habitat. Adverse impacts would be greater than those under alternatives C or D due to the increased level of recreational access provided under alternative E.</p> <p>Short term negligible adverse impacts to invertebrates would occur due to temporary displacement during construction activities.</p> <p>Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term minor adverse.</p> | <p>Impacts of the Alternative: Recreational ORV use would result in long-term minor adverse impacts to invertebrate species resulting from the continued use of ORVs in invertebrate habitat.</p> <p>Short term negligible adverse impacts to invertebrates would occur due to temporary displacement during construction activities.</p> <p>Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term minor adverse.</p> |

Table ES-5. Environmental Impact Summary by Alternative

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|--------------------|--|---|---|---|---|---|
| Soundscapes | <p>Impacts of the Alternative: Overall, minor to moderate impacts, depending upon vehicle speed, would occur along the beaches where most routes are established for ORV driving. While impacts over the majority of the Seashore beaches would be long-term adverse due to greater numbers of designated year-round ORV routes, impacts would be short-term adverse in the areas in front of village beaches, which are only opened seasonally to ORV use. Short-term adverse impacts would also result during other closure periods along any ORV route for resource protection, safety or administrative purposes. During closures, the potential for increased vehicle concentrations along remaining open ORV routes would increase the frequency of occurrence of single ORV pass-by events. Impacts would remain minor to moderate adverse, depending on vehicle speed, but vehicle noise may dominate the natural soundscape more frequently. In general, as ORV use would continue intermittently over the life of the management plan, vehicle noise would be a recurring, long-term minor to moderate adverse impact in all areas of the Seashore beaches open to ORV driving. Additionally, as closure periods, which have the potential to provide short-term benefits, would be implemented throughout the life of the management plan, long-term benefits would arise. As noise from ORV use would add at least 3 decibels (A-weighted scale) (dBA) to the natural ambient sound levels within the Seashore, wildlife would also experience adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to soundscapes would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: As described under alternative A, impacts to the natural soundscape within the Seashore would be minor to moderate, depending upon vehicle speed. Due to the slower speed limits proposed during the peak season when more visitors would be using beach areas, the potential for a greater reduction in visitor awareness would occur under this alternative as compared to alternative A. On beaches where ORV routes are open year-round, including the additional year-round route established under alternative B, impacts would be long-term and adverse, but would potentially become short-term adverse during closure periods. In locations where ORV routes are specifically designated as "seasonal," impacts would be short-term adverse. As with alternative A, closures of any kind present the potential for increased concentrations of vehicles in areas where ORV routes remain open. In such areas, the potential for vehicle noise to more frequently dominate the sound energy would arise. Aside from the short-term benefits that would occur in areas undergoing closure periods of any kind, additional short-term benefits may occur under alternative B as a result of regulations imposed to seasonally eliminate night driving. Impacts to wildlife would be similar to those under alternative A.</p> <p>Cumulative Impacts: Cumulative impacts to soundscapes would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: As described under alternative B, impacts to the natural soundscape resulting from a 15 mph speed limit would be minor adverse. However, the potential for wildlife and visitor use impacts, as well as the extent of such impacts, may be reduced due to seasonal restrictions and designated VFAs. Like under alternatives A and B, impacts would be long-term adverse for year-round ORV areas, potentially becoming short-term subject to temporary resource closures. As seasonal closures would limit ORV activity to less than a year, short-term adverse impacts would result. Closures of any kind, depending on the closure length, would also provide short-term benefits by providing noise-free periods. Under alternative C there would be areas of negligible impacts due to designated VFAs and greater opportunities for natural sounds to prevail due to longer seasonal closure periods as compared to alternatives A and B. Conversely, fewer open ORV areas and longer seasonal closure periods also present the potential for greater concentrations of ORVs in areas with open ORV routes, thereby increasing the frequency of vehicle noise in such areas. Construction activities would be localized and of short duration and would be minor adverse.</p> <p>Cumulative Impacts: Cumulative impacts to soundscapes would be long-term minor adverse.</p> | <p>Impacts of the Alternative: As described under alternative A, impacts to the natural soundscape resulting from a 15 mph speed limit would be minor adverse. However, the potential for impacts to wildlife and visitor use from ORV noise would be the least under this alternative, as compared to the no-action and all action alternatives due to larger areas of designated vehicle-free use. During resource closures, short-term benefits would occur due to the lack of ORV noise and would also be long-term benefits since closures would recur throughout the life of the management plan. The key difference between this alternative and all other alternatives is that alternative D has the greatest extent of long-term negligible adverse impacts resulting from the number of year-round vehicle-free designations. Alternative D also has the greatest extent of long-term benefits to the natural soundscape, visitors and wildlife due to these VFAs. However, this alternative would also present the greatest potential for increased ORV pass-by events that dominate the sound energy in designated ORV areas due to the fewer number of open ORV areas in which vehicles may drive. Like under alternative C, construction related noise impacts from ramp improvements and the construction of a new ramp would be minor adverse.</p> <p>Cumulative Impacts: Cumulative impacts to soundscapes would be long-term minor adverse.</p> | <p>Impacts of the Alternative: As described under alternative A, impacts to the natural soundscape on the beaches resulting from a 15 mph speed limit would be minor adverse. However, like under alternative C, the potential for wildlife and visitor use impacts, as well as the extent of such impacts, may be reduced due to seasonal restrictions and designated VFAs. On the other hand, pass-through zones and earlier openings along seasonal routes under this alternative would potentially provide fewer "noise-free" periods for visitors and wildlife. Vehicle diversions to other open routes may not be as frequent under this alternative as under the other action alternatives given that some seasonal routes are open longer than others. Although under this alternative, more ramps would be constructed, as compared to alternatives C and D, construction-related impacts would remain minor adverse due to the localized nature and short duration of the activities.</p> <p>Cumulative Impacts: Cumulative impacts under alternative E would be long-term minor adverse.</p> | <p>Impacts of the Alternative: As described under alternative A, impacts to the natural soundscape on the beaches resulting from a 15 mph speed limit would be minor adverse. Like under alternatives C and E, the potential for wildlife and visitor use impacts from ORV noise may be reduced due to seasonal closures and designated VFAs. "Noise-free" periods would be greater than alternatives C and E. Vehicle diversions to other open routes may not be as frequent under this alternative as under the other action alternatives given that some seasonal routes are open longer than others. Although under this alternative, more ramps would be constructed, as compared to alternatives C and D, construction-related impacts would remain minor adverse due to the localized nature and short duration of the activities.</p> <p>Cumulative Impacts: Cumulative impacts under alternative F would be long-term minor adverse.</p> |

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|----------------------------|---|--|--|--|---|--|
| Visitor Use and Experience | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term negligible to minor adverse impacts as some areas would be closed for resource protection, but alternative A would provide the most ORV access of any alternative. Should there be extensive resource closures in a given year, the potential for long-term moderate impacts exists. Those looking for a vehicle-free experience at the Seashore would experience long-term moderate adverse impacts as alternative A does not provide for a specific separation of uses or designation of VFAs. Since night driving would be permitted under alternative A, there would be short-term minor adverse impacts to night skies.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term negligible to minor adverse for ORV users and long-term, moderate, and adverse for visitors who desire a vehicle-free beach experience.</p> | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term moderate to major adverse impacts as one or more spit or point would be closed for an extended period of time during the breeding season. During the remainder of the year, there would be negligible to minor adverse impacts to ORV users as limited areas would be closed for resource protection. Those looking for a vehicle-free experience at the Seashore would experience long-term moderate adverse impacts as alternative B does not provide for a specific separation of uses outside of seasonal ORV closures of village beaches and no VFAs would be designated. Since night driving would be seasonally restricted under alternative B, there would be long-term negligible to minor adverse impacts to night skies, with long-term beneficial impacts during times of seasonal night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term moderate to major adverse for ORV users, and long-term moderate adverse for visitors who desire a vehicle-free beach experience.</p> | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term moderate to major adverse impacts as the designation of VFAs and the establishment of the SMAs would seasonally preclude ORV use from some areas of the Seashore that are popular ORV use areas. While three areas managed under ML2 procedures would have pedestrian access corridors, no ORV corridors would be provided in the SMAs, resulting in greater impacts to ORV users. Those looking for a vehicle-free experience at the Seashore would experience long-term benefits as alternative C provides for pedestrian corridors in three SMAs under ML2 procedures, as well as providing additional VFAs. Since night driving would be seasonally restricted under alternative C, there would be long-term negligible to minor adverse impacts to night skies, with long-term beneficial impacts during times of seasonal night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term moderate to major adverse to ORV users, and long-term beneficial for visitors who desire a vehicle-free beach experience.</p> | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term major adverse impacts as all SMAs and village beaches would be designated as VFAs year-round, which would prohibit the use of ORV in many popular visitor use areas. Those looking for a vehicle-free experience at the Seashore would experience long-term benefits as alternative D provides for many designated VFAs throughout the Seashore, although pedestrian access would be prohibited in the SMAs during the breeding season. Since night driving would be seasonally restricted under alternative D, there would be long-term negligible to minor adverse impacts to night skies, with long-term beneficial impacts during times of seasonal night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term major and adverse to ORV users, and long-term beneficial for visitors who desire a vehicle-free beach experience.</p> | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term moderate adverse impacts as the designation of VFAs and the establishment of the SMAs would preclude ORV use, either seasonally or year-round, from some areas of the Seashore that are popular visitor use areas. Three SMAs under ML2 management procedures would provide an ORV pass-through corridor at the start of the breeding season, subject to resource closures, lessening the impacts to this user group. Additional recreational opportunities such as park-and-stay and SCV camping would provide long-term benefits. Those looking for a vehicle-free experience at the Seashore would experience long-term benefits as alternative E provides for designated year-round VFAs, as well as seasonal ORV closures in areas such as village beaches and some of the SMAs. Since night driving would be seasonally restricted, but allowed until 10:00 p.m., under alternative E, there would be long-term moderate adverse impacts to night skies due to the hours of night driving allowed, implementation of park-and-stay opportunities, with long-term beneficial impacts during times of seasonal night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term moderate to major adverse to ORV users, and long-term beneficial for visitors who desire a vehicle-free beach experience.</p> | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term moderate adverse impacts as the designation of VFAs and carrying capacity limits could or would preclude ORV use, either seasonally or year-round, from some areas of the Seashore that are popular visitor use areas. Improved access would be provided to the soundside under this alternative as well. Those looking for a vehicle-free beach experience at the Seashore would experience long-term benefits as alternative F provides for year-round VFAs, as well as seasonal ORV closures in areas such as village beaches, two new pedestrian trails, 14 new or improved parking areas with pedestrian access, and pedestrian access seaward of prenesting closures (prior to observed breeding activity). Since night driving would be seasonally restricted under alternative F, there would be long-term negligible to minor adverse impacts to night skies, with long-term beneficial impacts year-round in VFAs and seasonally on ORV routes during times of seasonal night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term moderate to major and adverse to ORV users, and long-term beneficial for visitors who desire a vehicle-free beach experience.</p> |

Table ES-5. Environmental Impact Summary by Alternative

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|------------------------------|--|---|---|---|---|--|
| Socioeconomic Impacts | <p>Impact of the Alternative to the Region of Influence:</p> <p>The region of influence (ROI) is expected to experience long-term negligible adverse impacts or long-term beneficial impacts depending on the extent of beach closures. The Seashore villages (the villages bordering the Seashore) would experience the majority of the impacts with the potential for larger short-term impacts to specific businesses that cater most directly to ORV users.</p> | <p>Impact of the Alternative to the Region of Influence:</p> <p>The ROI is expected to experience long-term negligible to minor adverse impacts depending on the extent of beach closures. The Seashore villages would experience the majority of the impacts with the potential for larger short-term impacts to specific businesses that cater most directly to ORV users. Based on the current visitation statistics, the probability of negligible impacts is greater than the probability of minor adverse impacts.</p> | <p>Impact of the Alternative to the Region of Influence:</p> <p>The ROI is expected to experience long-term negligible to minor adverse impacts. The Seashore villages would experience the majority of the impacts with the potential for larger short-term impacts to specific businesses that cater most directly to ORV users. Efforts to improve access through pedestrian corridors, when compared to the no-action alternatives, and changes to access ramps would decrease the impacts on businesses that rely on visitors using the beaches affected by the new corridors and ramps relative to the no-action alternatives. However, the longer ORV closures in the fall months may reduce visitation under alternative C relative to the no-action alternatives and make the mid to high impact scenarios more likely.</p> | <p>Impact of the Alternative to the Region of Influence:</p> <p>The ROI is expected to experience long-term minor adverse impacts. The Seashore villages would experience the majority of the impacts with the potential for larger short-term impacts to specific businesses that cater most directly to ORV users. Compared to the other alternatives, alternative D provides the least access to the beach by ORVs resulting in larger projected adverse impacts.</p> | <p>Impact of the Alternative to the Region of Influence:</p> <p>The ROI is expected to experience long-term negligible to minor adverse impacts. Based on the visitation statistics for 2008, the probability of negligible impacts is greater than the probability of minor adverse impacts. The Seashore villages would experience the majority of the impacts. Like alternative B, alternative E provides for more ORV access and the impacts would likely be on the lower end of the range compared to alternatives C and D.</p> | <p>Impact of the Alternative to the Region of Influence:</p> <p>The ROI is expected to experience long-term negligible to minor adverse impacts. The Seashore villages would experience the majority of the impacts with the potential for larger short-term impacts to specific businesses that cater most directly to ORV users. Alternative F provides less ORV access to the beach compared to the no-action alternatives, especially with 26 miles of the Seashore designated as year-round VFA. However, some popular areas, such as Cape Point, South Point and Bodie Island spit, would have designated year-round or seasonal ORV routes, subject to resource closures. There are more VFAs for pedestrians because of the ORV route designations, as well as increased parking for pedestrian access. Compared to the no-action alternatives, these measures could increase overall visitation and increase the probability that revenue impacts would be at the low end of the estimated range rather than the high end.</p> |

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|--|--|---|--|--|--|---|
| Socioeconomic Impacts (continued) | <p>Impacts of the Alternative to Preservation Values: As a result of the long-term minor to major impacts to protected species, impacts to preservation values would be long-term moderate adverse.</p> <p>Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions.</p> | <p>Impacts of the Alternative to Preservation Values: As a result of the long-term minor to moderate impacts to protected species, and addition of protection from seasonal night-driving restrictions, impacts to preservation values would be long-term minor to moderate adverse.</p> <p>Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions.</p> | <p>Impacts of the Alternative to Preservation Values: Adverse impacts to preservation values would be less under alternative C, relative to alternatives A and B, and overall impacts to preservation values would be long-term minor adverse with long-term beneficial impacts from the measures taken to protect sensitive species at the Seashore.</p> <p>Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions.</p> | <p>Impacts of the Alternative to Preservation Values: Adverse impacts to preservation values would be less under alternative D, relative to alternatives A and B, and the overall impact to preservation values would be long-term minor adverse, with the closure of sensitive areas to ORVs under alternative D year-round substantially increasing the probability of long-term beneficial impacts relative to all other alternatives.</p> <p>Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions.</p> | <p>Impacts of the Alternative to Preservation Values: Adverse impacts to preservation values would be less under alternative E, relative to alternatives A and B, and overall preservation values would be long-term minor to moderate adverse with long-term beneficial impacts from the measures taken by the Seashore to protect threatened and endangered, as well as special status species.</p> <p>Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions.</p> | <p>Impacts of the Alternative to Preservation Values: Adverse impacts to preservation values would be less under alternative F, relative to alternatives A and B, and overall preservation values would be long-term minor to moderate adverse, with long-term beneficial impacts from the measures taken by the Seashore to protect threatened and endangered, as well as special status species.</p> <p>Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions.</p> |

Table ES-5. Environmental Impact Summary by Alternative

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|---|---|---|--|--|--|---|
| Seashore Operations and Management | <p>Impacts of the Alternative: Overall, each division could accomplish within current funding, without shifting priorities or having a noticeable change in operations, resulting in long-term negligible adverse impacts to all areas of Seashore operations.</p> <p>Cumulative Impacts: Cumulative impacts to Seashore Operations and Management would be long-term negligible adverse.</p> | <p>Impacts of the Alternative: Overall, there would be an increase in duties related to ORV management for staff in the park management/administration, visitor protection, and resources management divisions. Although these staff could accomplish these duties within existing budgets, it would require them to re-prioritize and re-allocate staff, and would not leave staff with adequate time to address other needs at the park outside of ORV management, resulting in long-term moderate adverse impacts. Staff in facility management and Interpretation would not see a large change in operations and would be able to accomplish ORV related tasks within current funding, without shifting priorities or having a noticeable change in operations, resulting in long-term negligible adverse impacts to these two divisions.</p> <p>Overall, impacts to Seashore operations would be long-term moderate adverse.</p> <p>Cumulative Impacts: Cumulative impacts to Seashore Operations and Management would be long-term negligible to minor adverse.</p> | <p>Impacts of the Alternative: Overall, there would be an increase in duties related to ORV management for staff in the park management/administration, resources management, facility management divisions that could result in some re-prioritization of work, but would not be expected to impact overall duties resulting in long-term minor adverse impacts. In the visitor protection division, staff could accomplish their duties with existing budgets, but it would require them to re-prioritize and re-allocate staff, and would not leave staff with adequate time to address other needs at the park outside of ORV management, resulting in long-term moderate adverse impacts. Staff in the interpretation division would not see a large change in operations and would be able to accomplish ORV related tasks within current funding, without shifting priorities or having a noticeable change in operations, resulting in long-term negligible adverse impacts</p> <p>Overall, impacts to Seashore operations would be long-term, minor to moderate (but mostly minor) adverse.</p> <p>Cumulative Impacts: Cumulative impacts to Seashore Operations and Management would be long-term, minor to moderate, adverse.</p> | <p>Impacts of the Alternative: Overall, there would be long-term negligible adverse impacts to all divisions as each division would be expected to execute their duties from existing, or expected, funding sources, without having to re-prioritize staff. These impacts are due, in part, to the expected cost recovery under the proposed permit program.</p> <p>Overall impacts to Seashore operations would be long-term negligible adverse.</p> <p>Cumulative Impacts: Cumulative impacts to Seashore Operations and Management would be long-term negligible adverse.</p> | <p>Impacts of the Alternative: Overall, there would be an increase in duties related to ORV management for staff in the facility management division that could result in some re-prioritization of work, but would not be expected to impact overall duties resulting in long-term minor adverse impacts. In the park management/administration division, the increase in ORV related responsibilities would be similar, but slightly greater with long-term minor to moderate adverse impacts. In the visitor protection and resources management divisions, staff could accomplish their duties with existing budgets, but it would require them to re-prioritize and re-allocate staff, and would not leave staff with adequate time to address other needs at the park outside of ORV management, resulting in long-term moderate adverse impacts. Staff in the Interpretation division would not see a large change in operations and would be able to accomplish ORV related tasks within current funding, without shifting priorities or having a noticeable change in operations, resulting in long-term negligible adverse impacts.</p> <p>Overall impacts to Seashore operations would be long-term moderate adverse.</p> <p>Cumulative Impacts: Cumulative impacts to Seashore Operations and Management would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Overall, there would be an increase in duties related to ORV management for staff in the facility management and park management/administration divisions that could result in some re-prioritization of work, but would not be expected to impact overall duties resulting in long-term minor adverse impacts. In the visitor protection and resources management divisions, staff could accomplish their duties with existing budgets, but it would require them to re-prioritize and re-allocate staff, and would not leave staff with adequate time to address other needs at the park outside of ORV management, resulting in long-term moderate adverse impacts. Staff in the interpretation division would not see a large change in operations and would be able to accomplish ORV related tasks within current funding, without shifting priorities or having a noticeable change in operations, resulting in long-term negligible adverse impacts.</p> <p>Overall impacts to Seashore operations would be long-term minor to moderate adverse.</p> <p>Cumulative Impacts: Cumulative impacts to Seashore Operations and Management would be long-term minor to moderate adverse.</p> |

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ACRONYMS AND ABBREVIATIONS

| | |
|------------------|---|
| AEC | area of environmental concern |
| ATV | all-terrain vehicle |
| AMOY | American oystercatcher |
| BEA | Bureau of Economic Analysis |
| CAMA | <i>Coastal Area Management Act</i> |
| CCC | Civilian Conservation Corps |
| CCD | charge-coupled device |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| Committee | Negotiated Rulemaking Advisory Committee |
| Corps | U.S. Army Corps of Engineers |
| CWB | Colonial Waterbird |
| CZMA | <i>Coastal Zone Management Act</i> |
| CZMP | coastal zone management programs |
| dB | decibel |
| EPA | U.S. Environmental Protection Agency |
| ESA | <i>Endangered Species Act</i> |
| FACA | <i>Federal Advisory Committee Act</i> |
| FEMA | Federal Emergency Management Agency |
| FHWA | Federal Highway Administration |
| FLREA | <i>Federal Lands Recreation Enhancement Act</i> |
| FONSI | Finding of No Significant Impact |
| FR | Federal Register |
| FTE | full-time equivalent |
| GIS | geographic information systems |
| GMP | general management plan |
| GPRA | <i>Government Performance Results Act</i> |
| I/O | input/output |
| Interim Strategy | <i>Cape Hatteras National Seashore Interim Protected Species Management Strategy/Environmental Assessment</i> |
| ISS | International Shorebird Survey |
| Lx | exceedance levels |
| MBTA | <i>Migratory Bird Treaty Act</i> |
| ML1 | Management Level 1 |
| ML2 | Management Level 2 |
| MLLW | mean lower low water |
| MMPA | <i>Marine Mammal Protection Act</i> |
| MOBILE6 | Mobile Source Emissions Model |

| | |
|----------|--|
| MOU | Memorandum of Understanding |
| mph | miles per hour |
| NAICS | North American Industry Classification System |
| NCDCR | North Carolina Department of Cultural Resources |
| NCDENR | North Carolina Department of Environment and Natural Resources |
| NCDOT | North Carolina Department of Transportation |
| NCNHP | North Carolina Natural Heritage Program |
| NCWRC | North Carolina Wildlife Resources Commission |
| NDZ | naturally dark zone |
| NEPA | <i>National Environmental Policy Act</i> |
| NIPA | National Income and Product Accounts |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NOI | notice of intent |
| NOx | nitrogen oxides |
| NPOMA | <i>National Parks Omnibus Management Act of 1998</i> |
| NPS | National Park Service |
| NWR | National Wildlife Refuge |
| ORV | off-road vehicle |
| OSA | Office of State Archaeology |
| PCE | primary constituent element |
| PEPC | NPS Planning, Environment, and Public Comment website |
| PIPL | piping plover |
| plan/EIS | <i>Off-Road Vehicle Management Plan / Environmental Impact Statement</i> |
| PLZ1 | park lighting zone 1 |
| PM | particulate matter |
| psi | pounds per square inch |
| RBO | Regional Biological Opinion |
| ROI | region of influence |
| RTI | Research Triangle Institute, International |
| SCV | self-contained vehicle |
| SECN | Southeast Coast Network |
| SED | special environmental zoning district |
| SHPO | State Historic Preservation Officer |
| SNHA | significant natural heritage area |
| SMA | Species Management Area |
| SMC | species of management concern |
| TCP | Traditional Cultural Properties |
| TPY | tons per year |
| USC | United States Code |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| UTV | utility-terrain vehicle |

| | |
|-----|---------------------------|
| VFA | Vehicle-free area |
| VOC | volatile organic compound |
| VUA | visitor use assistant |

CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

This “Purpose of and Need for Action” chapter explains what this *Off-Road Vehicle Management Plan / Environmental Impact Statement* (plan/EIS) intends to accomplish and why the National Park Service (NPS) is taking action at this time. This plan/EIS presents four action alternatives for managing off-road vehicle (ORV) use and assesses the impacts that could result from continuing current management (the two no-action alternatives) or implementation of any of the action alternatives. Upon conclusion of this plan/EIS and decision-making process, the alternative selected for implementation will become the ORV management plan, which will guide the management and control of ORVs at Cape Hatteras National Seashore (Seashore) for the next 10 to 15 years. It will also form the basis for a special regulation to manage ORV use at the Seashore. Brief summaries of both the purpose and need are presented here; more information is available in the “Administrative Background” section of this chapter.

PURPOSE OF THE PLAN

The purpose of this plan is to develop regulations and procedures that carefully manage ORV use/access in the Seashore to protect and preserve natural and cultural resources and natural processes, to provide a variety of visitor use experiences while minimizing conflicts among various users, and to promote the safety of all visitors.

NEED FOR ACTION

Cape Hatteras National Seashore provides a variety of visitor experiences. It is a long, essentially linear park, visitation is high, and parking spaces near roads are limited. Some popular beach sites, particularly those near the inlets and Cape Point, are a distance from established or possible parking spaces. Visitors who come for some popular recreational activities such as surf fishing and picnicking are accustomed to using large amounts and types of recreational equipment that cannot practically be hauled over these distances by most visitors without some form of motorized access. For many visitors, the time needed and the physical challenge of hiking to the distant sites, or for some even to close sites, can discourage or preclude access by nonmotorized means. As a result, ORVs have long served as a primary form of access for many portions of the beach in the Seashore, and continue to be the most practical available means of access and parking for many visitors.

In addition to these recreation opportunities, the Seashore is home to important habitats created by the Seashore’s dynamic environmental processes, including habitats for several federally listed species including the piping plover and three species of sea turtles. These habitats are also home to numerous other protected species, as well as other wildlife. The NPS is required to conserve and protect all of these species, as well as the other resources and values of the Seashore. In addition, the Seashore was designated a Globally Important Bird Area by the American Bird Conservancy (American Bird Conservancy 2005). This designation recognizes those areas with populations and habitat important at the global level.

The use of ORVs must therefore be regulated in a manner that is consistent with applicable law, and appropriately addresses resource protection (including protected, threatened, or endangered species), potential conflicts among the various Seashore users, and visitor safety. Section 4.10(b) of the NPS regulations in Title 36 of the Code of Federal Regulations (CFR), which implements Executive Orders 11644 and 11989, prohibits off-road use of motor vehicles except on designated routes or areas. It

*Off-road vehicle
(ORV) — Any
motorized vehicle
designed for or
capable of cross-
country travel on or
immediately over land,
water, sand, snow, ice,
marsh, swampland, or
other natural terrain.*

requires that “routes and areas designated for ORV use shall be promulgated as special regulations” in compliance with other applicable laws.

Therefore, in order to provide continued visitor access through the use of ORVs, the NPS must promulgate a special regulation authorizing ORV use at the Seashore. In order to ensure that ORV use is consistent with applicable laws and policies, the Seashore has determined that an ORV management plan is necessary as part of this process. Thus, the ORV plan and special regulation will:

- Bring the Seashore in compliance with Executive Orders 11644 and 11989 respecting ORV use, and with NPS laws, regulations (36 CFR 4.10), and policies to minimize impacts to Seashore resources and values.
- Address the lack of an approved plan, which has led over time to inconsistent management of ORV use, user conflicts, and safety concerns.
- Provide for protected species management in relation to ORV use by replacing the *Cape Hatteras National Seashore Interim Protected Species Management Strategy / Environmental Assessment* (Interim Strategy) (NPS 2006a), and associated Biological Opinion and amendments (USFWS 2006a, 2007a, 2008a) as modified by the consent decree.

OBJECTIVES IN TAKING ACTION

Objectives are what must be achieved to a large degree for the action to be considered a success (NPS 2001a). All alternatives selected for detailed analysis must meet project objectives to a large degree and resolve the purpose of and need for action. Objectives must be grounded in the Seashore’s enabling legislation, purpose, significance, and mission goals, and must be compatible with direction and guidance provided by the Seashore’s general management plan, strategic plan, and/or other management guidance. The following are objectives identified by Seashore staff for developing this plan/EIS.

MANAGEMENT METHODOLOGY

- Identify criteria to designate ORV use areas and routes.
- Establish ORV management practices and procedures that have the ability to adapt in response to changes in the Seashore’s dynamic physical and biological environment.
- Establish a civic engagement component for ORV management.
- Establish procedures for prompt and efficient public notification of beach access status including any temporary ORV use restrictions for such things as ramp maintenance, resource and public safety closures, storm events, etc.
- Build stewardship through public awareness and understanding of NPS resource management and visitor use policies and responsibilities as they pertain to the Seashore and ORV management.

NATURAL PHYSICAL RESOURCES

- Minimize impacts from ORV use to soils and topographic features, for example, dunes, ocean beach, wetlands, tidal flats, and other features.

THREATENED, ENDANGERED, AND OTHER PROTECTED SPECIES

- Provide protection for threatened, endangered, and other protected species (e.g., state-listed species) and their habitats, and minimize impacts related to ORV and other uses as required by laws and policies, such as the *Endangered Species Act* (ESA), the *Migratory Bird Treaty Act* (MBTA), and NPS laws and management policies.

VEGETATION

- Minimize impacts to native plant species related to ORV use.

OTHER WILDLIFE AND WILDLIFE HABITAT

- Minimize impacts to wildlife species and their habitats related to ORV use.

CULTURAL RESOURCES

- Protect cultural resources, such as shipwrecks, archeological sites, and cultural landscapes, from impacts related to ORV use.

VISITOR USE AND EXPERIENCE

- Ensure that ORV operators are informed about the rules and regulations regarding ORV use at the Seashore.
- Manage ORV use to allow for a variety of visitor use experiences.
- Minimize conflicts between ORV use and other uses.

VISITOR SAFETY

- Ensure that ORV management promotes the safety of all visitors.

SEASHORE OPERATIONS

- Identify operational needs and costs to fully implement an ORV management plan.
- Identify potential sources of funding necessary to implement an ORV management plan.
- Provide consistent guidelines, according to site conditions, for ORV routes, ramps, and signage.

PROJECT STUDY AREA

The geographic study area for this plan/EIS is Cape Hatteras National Seashore in North Carolina (figure 1), unless otherwise noted under each resource topic.

PURPOSE AND SIGNIFICANCE OF CAPE HATTERAS NATIONAL SEASHORE

All units of the national park system were formed for a specific purpose (the reason they are significant) and to conserve significant resources or values for the enjoyment of future generations. The purpose and

significance of the park provides the basis for identifying uses and values that individual NPS plans will support. The following provides background on the purpose and significance of the Seashore.

As stated in the Seashore's enabling legislation (the Act), Congress authorized the Seashore in 1937 as a national seashore for the enjoyment and benefit of the people, and to preserve the area. The Act states:

Except for certain portions of the area, deemed to be especially adaptable for recreational uses, particularly swimming, boating, sailing, fishing, and other recreational activities of similar nature, which shall be developed for such uses as needed, the said areas shall be permanently reserved as a primitive wilderness and no development of the project or plan for the convenience of visitors shall be undertaken which would be incompatible with the preservation of the unique flora and fauna or the physiographic conditions now prevailing in this area.

The Act also states:

...when title to all the lands, except those within the limits of established villages, within boundaries to be designated by the Secretary of Interior within the area of approximately one hundred square miles on the islands of Chicamacomico [Hatteras], Ocracoke, Bodie, Roanoke, and Collington, and the waters and the lands beneath the waters adjacent thereto shall have been vested in the United States, said areas shall be, and is hereby, established, dedicated, and set apart as a national seashore for the benefit and enjoyment of the people and shall be known as the Cape Hatteras National Seashore.

A 1940 amendment to the enabling legislation authorized hunting and re-designated the area as the Cape Hatteras National Seashore Recreational Area. (Note: The history of the Seashore's name is described in more detail in the next section of this chapter.)

Park significance statements capture the essence of the park's importance to the nation's natural and cultural heritage. Understanding park significance helps managers make decisions that preserve the resources and values necessary to the park's purpose. The following significance statements recognize the important features of the Seashore. As stated in the 2006–2011 Strategic Plan, the Seashore has the following significance (NPS 2007b):

This dynamic coastal barrier island system continually changes in response to natural forces of wind and wave. The flora and fauna that are found in a variety of habitats at the park include migratory birds and several threatened and endangered species. The islands are rich with maritime history of humankind's attempt to survive at the edge of the sea, and with accounts of dangerous storms, shipwrecks, and valiant rescue efforts. Today, the Seashore provides unparalleled opportunities for millions to enjoy recreational pursuits in a unique natural seashore setting and to learn of the nation's unique maritime heritage.

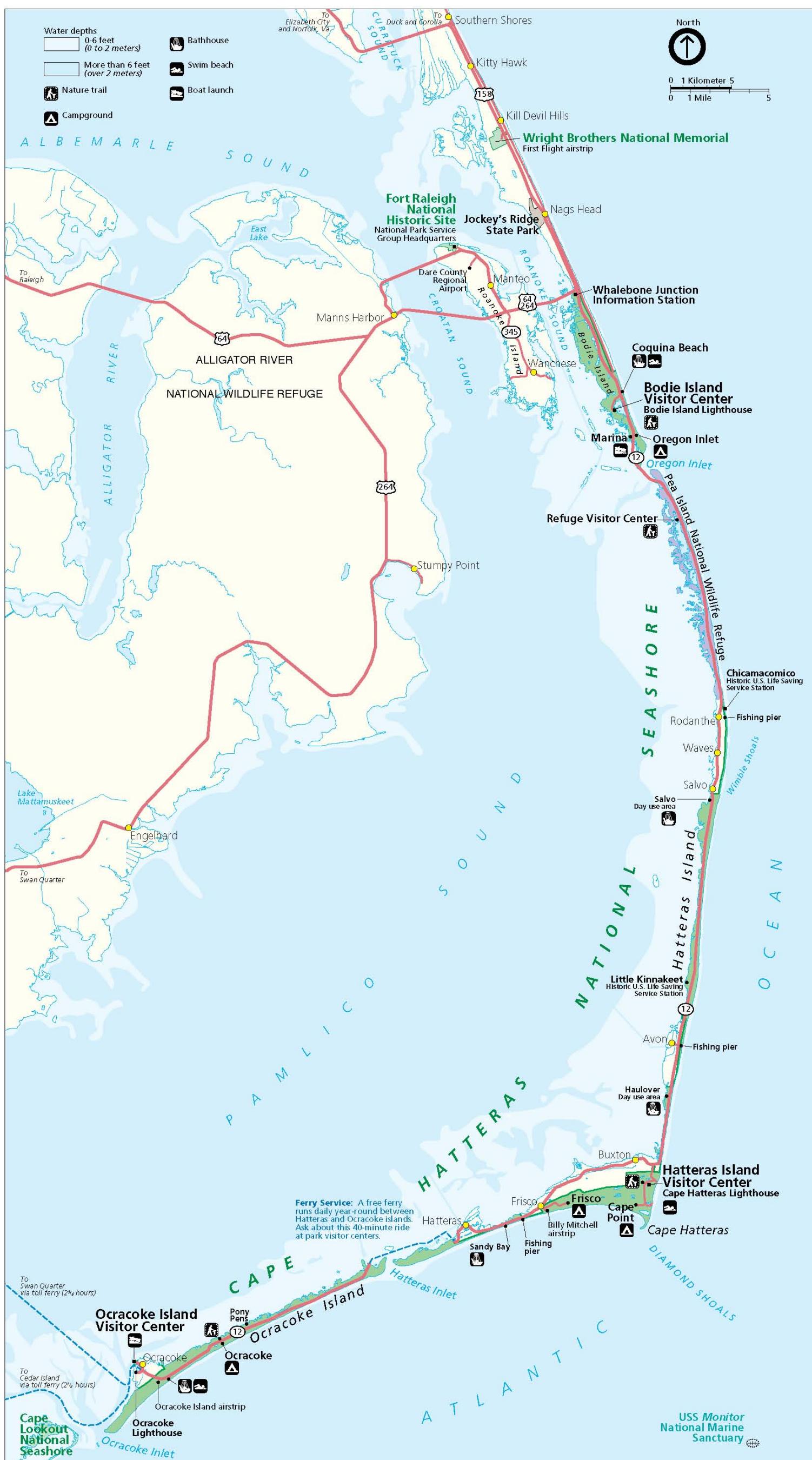


FIGURE 1. CAPE HATTERAS NATIONAL SEASHORE MAP

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DESIRED FUTURE CONDITIONS FOR THREATENED, ENDANGERED, STATE-LISTED, AND SPECIAL STATUS SPECIES

Desired future conditions (also called management targets) describe what park resources will look like once management goals have been achieved. They derive first from the overarching requirement of the *Organic Act* to conserve wildlife without impairment for the enjoyment of present and future generations. To meet the *Organic Act* mandate, the NPS will manage the Seashore to provide habitat and other conditions necessary to support sustainable populations of these species at the Seashore. Second, desired future conditions derive from NPS responsibilities as a federal agency under the ESA and the NPS *Management Policies 2006* to conserve listed species and to contribute recovery goals for them. Finally, they originate from the NPS policy to manage the same for state-listed species and species of park management concern as for federally listed species to the extent possible.

Desired future conditions are also a learning tool in the context of periodic review and adaptive management. They provide the basis for evaluation of progress and for the research hypotheses set in the adaptive management plan. The process of developing the desired conditions points out what is known and unknown about the resource and where additional research and adaptive management are appropriate. A definitive methodology for developing desired future conditions does not exist. Desired conditions are highly variable and therefore are based on conservative estimates that consider species variability, habitat availability, and environmental factors that could affect the success of any colony or nesting individual. The adaptive management initiatives that accompany these desired future conditions address the research that the Seashore may conduct to determine the conditions under which recreational use may be managed to enhance visitor experience without adversely affecting the achievement and maintenance of the desired future conditions. In the context of this plan/EIS, the following definitions are applied to desired future conditions:

- **Short-term** means 10 years (or two 5-year periodic review cycles) after implementation of plan.
- **Long-term** means 20 years (or four 5-year periodic review cycles) after implementation of plan.

When desired future conditions for resources are met or exceeded, it may allow for more flexible management of recreational use, provided adverse impacts of such use are effectively managed and wildlife populations remain stable. The populations of protected species that meet or exceed the goals set forth in this section would continue to be protected in accordance with applicable federal and state laws and regulations. Where progress is not being made toward the attainment of desired future conditions, periodic review and adaptive management may result in increased restrictions on recreational use. The management targets below are consistent with and contribute to the goals set forth by existing conservation plans such as U.S. Fish and Wildlife Service (USFWS) recovery plans (USFWS 1996a, 1996b), the Southeastern Coastal Plains–Caribbean Region Report U.S. Shorebird Conservation Plan (Hunter et al. 2002), the Waterbird Conservation Plan for the Mid-Atlantic/New England/Maritimes Region (MANEM 2006), and A Conservation Action Plan for the American Oystercatcher (*Haematopus palliatus*) for the Atlantic and Gulf coasts of the United States, Version 2.0 (Schulte et al. 2007).

The NPS considers the desired future conditions to be realistic, sustainable targets for piping plovers (table 1), nesting sea turtles (table 2), seabeach amaranth (table 3), and sensitive species of shorebirds (tables 4 and 5) at Cape Hatteras National Seashore.

TABLE 1. DESIRED FUTURE CONDITIONS FOR PIPING PLOVERS

| Variable | Short-Term Target | Long-Term Target | Source |
|--------------------------|--|--|---|
| Number of breeding pairs | 15 | 30 | Short-term target from highest number of pairs recorded at Cape Hatteras National Seashore (1989) and the Biological Opinion (USFWS 2006a) ^a ; Long-term target from the Piping Plover Recovery Plan (USFWS 1996a, appendix B) |
| Fledge rate | 5-year average of 1.0 chick per pair | 5-year average of 1.5 chicks per pair ^b | Short-term target from the Biological Opinion (USFWS 2006a); long-term target from the Piping Plover Recovery Plan (USFWS 1996a) |
| Depredation rate | 5-year average rate of mammalian depredation of eggs is <10% | Same as short-term target | Adapted from the Piping Plover Recovery Plan (USFWS 1996a) ^c |

^aThe information is in the 2006 Biological Opinion under: Effects of the Action, A. Piping Plovers, Nature of the effect (USFWS 2006a):

"The biologically appropriate measure of population impacts is not the size of the current remnant population, but rather the potential pairs and productivity foregone. The 15 pairs documented at the Seashore in 1989 and comparison of current habitat with 1989 aerial photos furnish empirical evidence of potential for a population of at least five times the current number [which was 3] (i.e., 15 pairs). However, the demonstrated population growth elsewhere in the range provides evidence that the potential contributions at the Seashore are two to four times that number (i.e., 30 to 60 pairs). The USFWS estimated carrying capacity for the Seashore to be [sic] 30 pairs. (See USFWS 1996a, appendix B. Actual population growth at many of the sites in other states has exceeded the projections made in this exercise.)"

^bIn the future, if the fledge rate target in the Piping Plover Recovery Plan is revised (e.g., revised for Southern Recovery Unit), the Cape Hatteras National Seashore target will be adjusted to conform to the recovery plan.

^cRecovery Plan: Recovery Tasks – Section 1.42 recommends "Deploy predator exclosures to reduce egg predation where appropriate" and states, in part: "Rimmer and Deblinger (1990) found that 24 of 26 nests (92%) protected by exclosures hatched at least one egg, while only six of 24 (25%) unexclosed nests hatched at a Massachusetts site over four years. Melvin et al. (1992) reported 90% (26/29) hatching of exclosed nests versus 17% (4/24) for unexclosed nests at six sites on Outer Cape Cod, Massachusetts."

TABLE 2. DESIRED FUTURE CONDITIONS FOR NESTING SEA TURTLES

| Variable | Short-Term Target | Long-Term Target | Source |
|--|---|--|---|
| Number of loggerhead nests | 94 ^a nests with an average annual rate of increase of 2% | 115 ^a nests with an average annual rate of increase of 2% | Adapted from 2008 Loggerhead Recovery Plan goal (NMFS and USFWS 2008) |
| Percent of North Carolina total sea turtle nests | 5-year average of 10% of North Carolina total | Same as short-term target | From the Biological Opinion (USFWS 2006a) |
| Ratio of false crawls to nests | 5-year average of 1:1 or less | Same as short-term target | From Dodd 1988 |
| Number of nests relocated | 5-year average of <30%; Minimize number of nests relocated for reasons other than "risk of daily overwash or well-documented risk of erosion" | Same as short-term target | From Godfrey pers. comm. 2008 |

^aTargets are based on 2% annual rate of increase from 2004-2008 average of 77.2 nests. Rate of increase of 2% for the Northern Recovery Unit is identified in the recovery plan. Based on this approach, the 50-year projection is 201 nests.

TABLE 3. DESIRED FUTURE CONDITIONS FOR SEABEACH AMARANTH

| Variable | Short-Term Target | Long-Term Target | Source |
|--|--|---|--|
| Number of suitable sites occupied by seabeach amaranth | Develop a seabeach amaranth restoration plan for 4 suitable sites ^a | At least 3 of 4 suitable sites are occupied for 5 consecutive years | From the Seabeach Amaranth Recovery Plan (USFWS 1996b) |

^a Suitable sites include Bodie Island Spit, Cape Point, Hatteras Inlet Spits (Hatteras Island Spit and North Ocracoke Spit) and Ocracoke Inlet Spits (Southern Ocracoke Island Spit).

TABLE 4. DESIRED FUTURE CONDITIONS FOR AMERICAN OYSTERCATCHERS

| Variable | Short-Term Target | Long-Term Target | Source |
|---|--|--|--|
| Number of nesting pairs | 5-year average of 30 nesting pairs | 5-year average of 45 nesting pairs | Targets based on American oystercatcher conservation action plan (Schulte et al. 2007) and recent Cape Hatteras National Seashore data ^a |
| Fledge rate (chicks fledged per nesting pair) | 5-year average of 0.40 chicks per pair or higher | 5-year average of 0.50 chicks per pair or higher | 3 % annual increase from current rate of 0.30 |
| Depredation rate | Percentage of nests lost that can be directly attributed to depredation of 30% or less | Percentage of nests lost that can be directly attributed to depredation of 20% or less | Average depredation rates over last 5 years: nests=31.2%, chicks=51.4% (NPS 2009n). The desired future condition is to reduce depredation rates while recognizing some depredation will continue to occur. |

^a From page 11 of the conservation action plan (Schulte et al. 2007): "We recommend that the population be stabilized and then gradually increased from its current level to at least 1.5 times its current size."

TABLE 5. DESIRED FUTURE CONDITIONS FOR COLONIAL WATERBIRDS

| Variable | Short-Term Target ^a | Long-Term Target ^b | Source |
|--|--------------------------------|-------------------------------|---|
| Annual peak number of least tern nests | 5-year average of 462 nests | 5-year average of 577 nests | Long-term target equals 2009 peak count. Short-term target is mid-point between recent average (2007-2010) and the long-term target. |
| Annual peak number of common tern nests | 5-year average of 292 nests | 5-year average of 533 nests | Long-term target equals the average number of nests that occurred in 1977-2004. Short-term target is the mid-point between recent average (2007-2010) and the long-term target. |
| Annual peak number of gull-billed tern nests | 5-year average of 21 nests | 5-year average of 40 nests | Long-term target equals the average number of nests that occurred in 1977-2004. Short-term target is the mid-point between recent average (2007-2010) and the long-term target. |
| Annual peak number of black skimmer nests | 5-year average of 132 nests | 5-year average of 244 nests | Long-term target equals the average number of nests that occurred in 1977-2004. Short-term target is the mid-point between recent average (2007-2010) and the long-term target. |

^aShort-term target is to achieve the midway point between the long-term target and the recent average of the data points from the Seashore's 2007 - 2010 counts.

^bExcept for least terns, the long-term target for the respective species is to achieve the average number of nests that occurred at the Seashore in 1977 – 2004. Least terns are currently nesting in greater numbers than the 1977-2004 average; therefore, the long-term target is to maintain a 5-year average count equal to the 2009 peak count.

ADMINISTRATIVE BACKGROUND

HISTORY OF CAPE HATTERAS NATIONAL SEASHORE

Officially authorized in 1937 along the Outer Banks of North Carolina, Cape Hatteras is the nation's first national seashore. Consisting of more than 30,000 acres distributed along approximately 67¹ miles of shoreline, the Seashore is part of a dynamic barrier island system. The Outer Banks of North Carolina formed as a result of changes in sea level, wave and wind action, and ocean currents. These factors continue to influence the islands today through the processes of erosion and accretion of the shoreline; overwash across the islands; and the formation, migration, and closure of the inlets (NPS 1979). Since the 1930s, these natural processes have been influenced by human actions such as building sand berms² to protect roads and homes, dredging inlets, and filling inlets newly created by storms.

The story of the creation of Cape Hatteras National Seashore is documented in the Seashore's administrative history, *The Creation and Establishment of Cape Hatteras National Seashore* (NPS 2007f). No national park is suddenly brought into being except by a chain of milestones that lay the basis for an act of Congress or a presidential proclamation (NPS 2007f).

On June 23, 1936, President Roosevelt signed an “act to authorize a study of the park, parkway, and recreational area programs in the United States, and for other purposes” (49 Stat. 1894). The *Park, Parkway, and Recreational Area Study Act of 1936* significantly expanded the range and type of lands that could be preserved and managed by the NPS. The Act recommended specific additions to the national park system to provide recreational opportunities. The national recreation study led the NPS to establish four new types of parks in the park system: Recreational Demonstration Areas, national parkways, national recreation areas, and national seashores. Supporters of the park, parkway and recreation study, which included much focus upon the protection and use of coastal areas for recreational purposes, saw Cape Hatteras as the foremost example of a possible seashore recreational park. Concurrent congressional interest in erosion control, as demonstrated by the passage of the *Beach Improvement Act* in June 1936, also motivated interest in a national park in the Outer Banks. Undoubtedly, the recreational study and erosion control acts of 1936 spurred Congressman Lindsay C. Warren, who represented Dare County from 1925 to 1940, to begin work on “an act to provide for the establishment of the Cape Hatteras National Seashore” (NPS 2007f). Representative Warren introduced the

The enabling legislation provides that the administration, protection, and development of the national seashore shall be exercised under the direction of the Secretary of the Interior by the NPS, subject to the provisions of the Organic Act.

¹ Due to the dynamic nature of the barrier island system, the mileage of shoreline in the Seashore is constantly changing. This mileage estimate includes ocean shoreline and some interdunal roads managed for public recreation by the NPS. Actual on-the-ground mileage may vary, especially around the inlets and spits, due to the increased potential for erosion and accretion in these areas.

² The word “berm” as used in this document refers to remnants of the man-made dune or dune ridge originally constructed in the 1930s by the CCC and the Works Progress Administration. NPS actively maintained this dune ridge until the early 1970s when NPS ended the dune stabilization policy after scientists concluded that the man-made berms constructed since the 1930s had actually served to foreshorten the seashore’s beaches and dramatically altered both the ecological and the topographical characteristics of the Outer Banks (NPS 2007f). “Berm” includes the man-made dune or dune ridge constructed to protect state highway NC-12 and interior sections of the island from ocean flooding and overwash during storms.

legislation in May 1937. It was subsequently approved by the House on August 2 and the Senate on August 14, then signed (50 Stat. 669) by President Roosevelt on August 17, 1937 (NPS 2007f).

In addition to articulating the recreation and preservation mission of the Seashore as stated in the “Purpose and Significance of Cape Hatteras National Seashore” section of this chapter, the enabling legislation provided that the administration, protection, and development of the national seashore shall be exercised under the direction of the Secretary of the Interior by the NPS, subject to the provisions of the *Organic Act*. It also provided that the legal residents of the villages shall have the right to earn a livelihood by fishing within the boundaries of the Seashore. The Act provided that the United States shall not use appropriated funds to purchase lands within the area, but such lands shall be secured by the United States only by public or private donation³. The Act authorized the Secretary to accept donations of land and funds to purchase lands, and to establish the national seashore contingent upon the acquisition of a minimum of ten thousand acres within the designated seashore area and provided that if such lands were not conveyed to the United States within ten years of the passage of the Act, the establishment of the national seashore may, at the discretion of the Secretary, be abandoned (NPS 2007f).

In March 1938, the NPS published the Prospectus of Cape Hatteras National Seashore in response to numerous requests for information concerning the area, which included the following recommendations for selection, use and development of the area (NPS 1938):

Inasmuch as the proposed Cape Hatteras National Seashore is the first area of its kind to be authorized by Congress, the National Park Service has adopted the following policy to be used in the selection, development and operation of this and other similar areas which may be acquired later.

Primarily a seashore is a recreation area. Therefore in its selection, the boundaries should be placed in such a manner that the maximum variety of recreation is provided. Thus while provision for bathing may be the first consideration of these areas, it must be kept in mind that a far greater number of people will be more interested in using a seashore area for other recreational purposes. It is desirable therefore to provide ample shoreline for all types of beach recreation. The Cape Hatteras National Seashore provides such an area in that there is extensive shoreline for all forms of recreation both for immediate use and for future development.

Secondarily, the area should include adjacent lands which by reason of historical, geological, forestry, wildlife, or other interests, have sufficient justification to be preserved by the Federal Government. It is important therefore to reach back into the hinterlands and acquire areas which will provide a variety of interests, scenic, scientific and historic. This principle has been followed in determining the boundaries of Cape Hatteras National Seashore.

Thirdly, it is important to include in the area, lands necessary for proper administration and lands which serve principally as a protection for the recreational and other developments which are the primary purpose of this area. Inasmuch as the Cape Hatteras National Seashore area is composed of islands and peninsulas, the land area in most cases is circumscribed by water, which fact in itself offers considerable protection. Inasmuch as control of much of the water in the Sounds may be desirable for fish and bird life, the

³ In March 1939, the North Carolina General Assembly created the North Carolina Cape Hatteras Seashore Commission to acquire seashore lands for eventual transfer to the federal government (NPS 2007f).

boundaries of Cape Hatteras National Seashore area will embrace a substantial portion of these waters.

The development and operation of the Seashore area shall follow the normal national park standards with the understanding that recreational pursuits shall be emphasized to provide activities in as broad a field as is consistent with the preservation of the area. It shall be the policy of the Service to permit fishing, boating and other types of recreation under proper regulations and in designated areas where such activities may not conflict with other factors of greater importance. Where natural landing fields occur, the use of land and sea planes may be permitted where not in conflict with the interests of wildlife or inconsistent with proper development and use of the area.

At the time, the NPS had envisioned the Seashore to incorporate lands and waters including portions of Currituck Sound, Nags Head, Roanoke Island, Bodie Island, Hatteras Island and Ocracoke Island. While certain sites were targeted for development of recreational facilities, certain sections were identified to remain undeveloped and preserved as the “primitive wilderness” that existed at that time. Such plans for general development were as described in the prospectus (NPS 1938):

While further study and planning is required, it is expected that intensive development for recreational purposes shall be undertaken on the Bodie section which is the portion of the area between Oregon Inlet and the Whalebone Inn. In this connection, arterial and subsidiary roads and facilities for bathing, fishing, boating, camping, and hiking probably will be provided in this section.

Other development which will be of secondary priority will be in the Nags Head section where provision may be made for a more appropriate and interesting entrance road and where facilities for bathing on Roanoke Island and for hiking, picnicking, fishing and boating may be made available. The Nags Head and Bodie sections are the most accessible and offer opportunities for all varieties of recreation which should be adequate to the needs of the public for many years.

The Currituck, Hatteras and Ocracoke sections will remain in their natural conditions with no development other than for administrative purposes. It is possible some additional accommodations will need to be provided for visitors to the Cape Hatteras Lighthouse and that some alterations will be required in the plans for the area which is now a State park (*Cape Hatteras State Park*). It is definitely the desire of the National Park Service that the section between Oregon Inlet and Hatteras Inlet remain in its natural condition without any roads so that future generations may see this and other undeveloped sections as they are in our day.

In the years after the enabling legislation was passed, a number of issues and local concerns arose that ultimately changed the early NPS vision for the Seashore and which complicated and delayed land acquisition and formal establishment. One such concern included whether or not hunting would be allowed to continue once the national seashore was established. On June 29, 1940, Congress amended the 1937 authorizing legislation for Cape Hatteras National Seashore to permit hunting. The amendment specifically referred to compliance with the MBTA. This provision would later be key in determining how the NPS actually interpreted “hunting” within the Seashore, but perhaps for the first time in the history of the NPS, legal hunting was now authorized within a national park. The same amendment also changed the formal title of the park to “Cape Hatteras National Seashore Recreational Area.” The term “recreational area” in the 1940 amendment was derived clearly from the Secretary’s justification to allow hunting and by the Service’s desire to limit the setting of any precedent for more traditional types of

parks. However, the NPS had already defined a “national seashore” as a recreational area in its 1937 brochure explaining the *Park, Parkway, and Recreational Study Act* and the anticipated recreational purposes of the park were established by Congress through Acting Secretary Chapman’s letter to the House Committee on Public Lands. Thus, including the term “recreational area” in the title was redundant. In 1954 the NPS authorized the original park name (“national seashore”) to be used for all administrative purposes except for formal memoranda and documents requiring the full legal name. Subsequently, the term “recreational area” fell from use in most official references to the park (NPS 2007f). In 1961, Congress authorized Cape Cod in Massachusetts as the second “national seashore” and subsequently created eight more “national seashores” between 1962 and 1975 for a total of ten. All such park units that followed Cape Hatteras were officially named “national seashores.” Since 1962, Cape Hatteras has been referred to as “national seashore” in Congressional legislation and “national seashore” has been the standard nomenclature for this type of park.

As envisioned in the 1930s, the NPS had hoped to preserve a far more natural environment than it was forced by compromise to accept in the 1950s (NPS 2007f). In 1952, fifteen years after he submitted the act to create Cape Hatteras National Seashore, former Congressman Lindsay C. Warren offered what may be the purest surviving expression of his intent in doing so: “When I introduced the bill for the Cape Hatteras National Seashore in 1937, I would have nothing to do with it unless the people were fully protected forever in their hunting and fishing rights, and unless there was a guarantee of a hard-surface road if the Government came into the picture, and unless all of the villages were exempt. At that time there was very little prospect for a paved road, but I extracted a promise from the NPS that they would favor such a road to be built, whenever possible, either through State or Federal Aid funds. Frankly, I think that this Park will mean more to the people of Dare County than anything that could ever happen to them. I do not say that because I was the author of the bill, but I say it because I had studied the history of all Parks, before I came into the picture back in 1937” (NPS 2007f).

In September 1952, Director Wirth acted to address serious criticism of the NPS and its failure to provide adequate information about the seashore project to inhabitants of the Outer Banks. At a meeting of the North Carolina Cape Hatteras Seashore Commission, he announced plans to visit the area in early October specifically to talk personally with anyone who was willing to do so, which included meeting with the villagers of Hatteras and Ocracoke Islands (NPS 2007f). The concerns that were expressed at those meetings included: (1) uncertainty about where the Seashore boundary would be drawn around the villages and whether there would be enough room left for community expansion; (2) concern about the rights of individuals to continue commercial and sport fishing; (3) concern as to whether present hunting rights would be affected; and (4) concern that once the Seashore is established, the local people would be denied access to the ocean beach (NPS 2007f).

On October 31, 1952, at the request of Director Wirth, D. Victor Meekins, who had headed the Cape Hatteras National Seashore Commission until 1945 and later became editor of *The Coastland Times*, published a special edition of the newspaper showing NPS maps and statements and assured Wirth that “every family within the project, whether a subscriber of the newspaper or not, got a copy.” In an open letter from the Director addressing all those affected by the proposal to create Cape Hatteras National Seashore, Wirth laid out the plans and intent of the NPS and made certain key promises (NPS 2007f).

Wirth outlined park boundaries that had been adjusted to address some of the concerns of residents that he had heard during his three-day tour. Once again, the total size of the park was reduced, this time to 28,500 acres. The new boundary left more room for expansion of the villages toward the ocean, which had been a major complaint, but left the beaches under NPS control. Wirth said the NPS would need “on the ocean side of the towns, only those lands along the ocean which are necessary to protect and control the sand dunes, to reestablish them where necessary, and hold them to protect the communities from the intrusion of the ocean.” The boundaries were also closer to the Pamlico Sound shoreline. The new tighter

boundaries recognized that, under the basic legislation authorizing the Seashore, fishing and hunting rights were reserved to the people. That being the case, there was no real need to include Pamlico Sound waters in the Seashore since state and federal fishing and hunting laws and regulations would still apply to waters both inside and outside the Seashore boundaries. Wirth simply set an arbitrary distance of 150 feet that would allow hunters and fishermen to clearly know when they were in or out of the park (NPS 2007f).

Residents had been concerned with beach access, as well. On this account, in the letter Wirth plainly stated that the Seashore would be a public park open to all, including those of the Banks and visitors. "However," he stated, "it will be necessary to establish certain regulations, such as to designate places for vehicles to get to the beach, in order to reduce sand dune erosion to a minimum; to manage ocean fishing where large numbers of bathers are using the beach; and to confine bathing to certain areas. These latter are safety measures, as it would be dangerous to permit surf fishing where there are large numbers of people in bathing and, likewise, fishermen would not want bathers to interfere with their fishing." For the future, Wirth noted "the National Park Service proposes to resume the sand fixation work; to re-establish the natural plant and wildlife within the area; and to provide access to the beach for everybody." Wirth's "Letter to the People of the Outer Banks" effectively countered the disinformation campaign waged by park opponents, laid out a clear vision of NPS management of the national seashore, and created a key document that was later often solemnly referenced by local residents in discussion with NPS officials on park matters (NPS 2007f).

Late in 1952 agreement was reached on the final boundaries of the Seashore area and in December 1952 the state-owned lands in the Seashore were transferred to the United States. In January 1953, Wirth recommended that Secretary of the Interior Oscar L. Chapman approve an order, consistent with Section 4 of the Act of August 17, 1937, directing that certain lands on the Outer Banks of North Carolina be "administered, protected, and developed by the National Park Service for national seashore recreational purposes for the benefit and enjoyment of the people." This order, dated January 12, 1953, marked the formal establishment of the Seashore (NPS 2007f).

Federal land ownership extends from ocean to sound across three barrier islands—Ocracoke, Hatteras, and Bodie (figure 1). The eight villages are excluded



Surf Fishing, 1935

Credit: NPS



High Tide on Ocracoke, 1936

Credit: NPS

from the Seashore boundaries. On the oceanside of the villages, federal ownership was established as a 500-foot strip measured landward from the mean low water at the time of acquisition. A larger area seaward of Buxton and Frisco includes portions of Buxton Woods. The 5,880-acre Pea Island National Wildlife Refuge, approximately 12 miles long and located at the northern end of Hatteras Island, lies within the Seashore boundary and is administered for refuge purposes by the USFWS in accordance with the *National Wildlife Refuge System Improvement Act of 1997* (USFWS 2006b). ORV use is not allowed in the refuge, but the 12 miles of ocean shoreline are generally open to pedestrian use, except when localized closures are in effect to protect shorebird and sea turtle nesting areas. This plan/EIS does not include the area within the refuge.

Today the Seashore serves as a popular recreation destination with more than 2.1 million visitors in 2008 (NPS 2008e), showing an 8-fold increase in visitation since 1955 (NPS 2007f). Seashore visitors participate in a variety of recreational activities, including beach recreation (sunbathing, swimming, shell collecting, etc.), fishing (surf and boat), hiking, hunting, motorized boating, nonmotorized boating (sailing, kayaking, canoeing), nature study, photography, ORV use (beach driving), shellfishing, sightseeing, watersports (surfing, windsurfing, kiteboarding, etc.), and wildlife viewing. Seashore visitors use ORVs for traveling to and from swimming, fishing, and surfing areas, and for pleasure driving. Over the past five years (2004–2008), visitation to the Seashore has averaged approximately 2.2 million visitors per year (NPS 2008e).

Current management practices at the Seashore allow ORV users to drive on the beach seaward of the primary dune line. Drivers must use designated ramps to cross between paved roads (such as North Carolina Highway 12 [NC-12]) that run behind the primary dune line and the beach. In some areas, NC-12 provides a way around full beach closures or areas where the high tide line limits beachfront access. In addition to a multitude of visitor opportunities, the Seashore provides a variety of important habitats created by its dynamic environmental processes, including habitats for the federally listed piping plover; sea turtles; and one listed plant species, the seabeach amaranth. The Seashore contains ecologically important habitats such as marshes, tidal flats, and riparian areas, and hosts various species of concern such as American oystercatcher, Wilson's plover, red knot, and colonial waterbirds, including the state-listed (as threatened) gull-billed tern.



Bodie Island Spit, Memorial Day Weekend 2007

Credit: NPS

SUMMARY OF OFF-ROAD VEHICLE USE AND MANAGEMENT AT CAPE HATTERAS NATIONAL SEASHORE

The legislation creating Cape Hatteras National Seashore did not specifically mention motor vehicle use or beach driving; however, the administrative history (NPS 2007f) contains numerous references to ORV use and related issues and concerns. The Act did, however, clearly establish the mandate for NPS to administer and protect the Seashore consistent with the *Organic Act* and the purposes for which the Seashore was established.

Before 1954, local residents and visitors drove on the beaches at the Seashore because there were few formal roads in this remote area. Historically, the main purpose of beach driving was transportation, and not recreation. Because the area was sparsely populated, the number of ORVs on the beach was much smaller than it is today. In 1954, NC-12 was paved, providing a formal transportation route. The paving of NC-12, the completion of the Bonner Bridge connecting Bodie and Hatteras islands in 1963, and the introduction of the State of North Carolina vehicle ferry system to Ocracoke Island facilitated visitor access to the sound and ocean beaches and resulted in increased vehicle use on beaches for recreational purposes (NPS 2004a). Residents adopted the use of ORVs for commercial netting of fish, while sport fishermen used ORVs to pursue migrating schools of game fish and reach more productive areas, such as Cape Point or the inlets, often a mile or more from the nearest paved surface. Presently, ORVs are used for activities such as commercial and recreational fishing, sightseeing, travel to and from swimming and surfing areas, and pleasure driving (NPS 2004b).

In 1937, then NPS Assistant Director for Land Planning, Conrad L. Wirth, published an eloquent description of the primitive qualities of the Outer Banks at a time when much of the area could still not be reached by road. In fact, at the automobile service station at Whalebone, which was a small shack distinguished by the huge skeleton of a whale propped up nearby, the road south to Cape Hatteras simply ended. “Here,” Wirth wrote, “the pavement swings to the right and leads into the village of Manteo about six miles to the west. Now you are at the point where the primitive begins. You drive off the road onto the sand, stop, and let about half of the air out of your tires, because the rest of the driving will be over the almost trackless beach” (NPS 2007f).

A similar description was written by Thomas W. Morse, Assistant in Charge of North Carolina State Parks. In the 1937 Master Plan Report for Cape Hatteras State Park, Morse stated, “...no major roads enter this area and it is reached by driving almost fifty miles over the sands from the Whale Bone Filling Station, south of Nags Head to the park. This trip involves crossing Oregon Inlet by ferry. While it is agreed that this method of entry is of great aesthetic value, it should be pointed out that it also involves considerable destruction of wildlife because of promiscuous driving” (NCDCD 1937).

This was how things remained until the late 1940s, when paved roads were first built to connect some of the villages on Hatteras Island. Later, NC-12 was completed south from Whalebone to the ferry at Oregon Inlet, and in late 1952 a road was completed from there through Pea Island to the village of Hatteras. The romantic trail Wirth had followed in 1937 was nothing but a memory, and “Whalebone Station,” sans the bones and station, had become “Whalebone Junction.” If Wirth regretted this loss—as did at least a few residents of the Outer Banks—he was willing, if not eager, to push the key improvements in public access that facilitated the Seashore’s establishment, seeing that improved access reinforced the Seashore’s success (NPS 2007f).

When Conrad L. Wirth became Director of the NPS in December 1951, he faced a park system severely taxed by the postwar travel boom, fueled by increasing personal incomes, leisure time, and automobile ownership. Visits to the national parklands mushroomed from 6 million in 1942 to 33 million in 1950 and 72 million in 1960. With few improvements since the Civilian Conservation Corps (CCC) era, the

deteriorating park roads, campgrounds, employee housing, sanitary systems, and other facilities were overwhelmed. Director Wirth's response to the increasing park problems was to initiate "Mission 66," a ten-year program to upgrade facilities, staffing, and resource management throughout the system by the 50th anniversary of the NPS in 1966 (NPS 1990).

In September 1953, Chief Park Ranger G. P. Hultman, in reviewing a field-operations manual, made several cogent observations about security and conservation at the Seashore and how to further these through interpretation. Many factors limited his recommendations, including that the land acquisition program was far from complete and that wildlife and waterfowl protection, including hunting, was an unsettled issue, and, therefore, "ultimate problems cannot be visualized." Hultman was nevertheless insightful in observing that commercial development over the previous decade had greatly reduced the area available for public seashore recreation, that plant growth was far more extensive than during the era of grazing, and that "the power and changing characteristics of sea and wind seem to be greatly underestimated." Moreover, Hultman recognized that "driving conditions, including sand and water on the very pavement serving as access to the area, are aggravated by unlimited access to the beach" and the ability of park visitors to drive off-road at will were likely to become an increasing problem (NPS 2007f).

On March 8, 1954, Allyn F. Hanks arrived at Cape Hatteras to assume his duties as the first operational superintendent of the Seashore (NPS 2007f). In April 1955, Superintendent Hanks submitted to Director Wirth and his "Mission 66 Committee" a draft of the policies and practices that should guide the Mission-66 program at Cape Hatteras National Seashore. Hanks thought increased visitation would eventually link most, if not all, of the islands of the Seashore. North Carolina was making important transportation improvements during the period of Mission 66 both around Pamlico Sound and along the Outer Banks, including the construction of major roads and bridges. Hanks therefore predicted visitation at the Seashore would reach two million by 1966, and as a result, he said, "it will become increasingly difficult to preserve unimpaired primitive wilderness conditions." While roads would fulfill the NPS promise to provide public access and economic opportunities for local residents, roads would also put millions of visitors within a day's drive of the Seashore and give them easy access to its natural areas. Hanks worried that motor vehicle use would conflict with recreational pursuits and preservation (NPS 2007f).



Beach fishing 1956

Credit: NPS

In the prospectus, Hanks laid out the Seashore's significance, as well as its needs in protection, interpretation, development, and operations. His plans encouraged park development near the villages for the convenience of the public, to promote village growth, and to concentrate development thus leaving miles of beach front undisturbed. In the end, Hanks' prospectus determined the location and layout of most major developments at the Seashore, including the fishing piers and camping sites. The Mission 66 prospectus also encouraged the development of a roadway along the entire length of the Seashore. Although the agency now acknowledged the popularity of roads, it sought to use them to channel traffic from

more sensitive areas in the Seashore. Wirth approved the Mission 66 prospectus for Cape Hatteras National Seashore on November 15, 1956 (NPS 2007f).

During Mission 66, the impact of driving on the beaches was a major concern. The Mission 66 prospectus stated, “The beach, as the area’s most significant resource, and the narrow margin which is the locale for man’s numerous activities, requires development planning that will promote use only by people on foot. Vehicular use must be rigidly controlled and permitted only under specified conditions” (NPS 1956). Superintendent Hanks declared, “driving along the ocean shore by the public must be controlled.” To reduce its impact on the recreational purposes, the park was established to meet, specifically picnicking, swimming, and surf-casting, all of which “require assurance of non-intervention by shore driving.” Hanks further noted, “such protection has long been recognized by the more developed areas north to Kitty Hawk.” There, local property owners had restricted beach driving because of the damage it caused. Hanks thus planned to limit driving, even by NPS personnel, except for emergencies. In addition, during Mission 66, the NPS was dedicated to maintaining its barrier dune system in the Outer Banks, and Hanks sought to limit “indiscriminate access over the dunes to the ocean where in the past has been a large contributing factor in deterioration of the original barrier dune. Such practice must be curtailed to obtain overall greater protection benefits.” At the same time, Hanks acknowledged that minimum shoreline driving and limited access over the dunes “must be flexible to allow commercial fishing in general as provided for in the original Act.” Because shoreline driving negatively affected recreational activities, the Superintendent told Director Wirth, “it may be necessary, however, to exclude commercial fishing from certain portions of the Seashore by Secretarial Order to protect those portions for recreational use.” NPS policy was to protect the dunes from damage and to provide for recreational needs, which meant that vehicle use along some portions of the beach had to be entirely excluded. In other areas, access would have to be allowed for commercial fishing by local residents using, for example, “haul nets” that required motorized power (NPS 2007f).

Mission 66 brought much development to Cape Hatteras National Seashore, even if some stretches of beach were left undeveloped. As envisioned in the 1930s, the NPS had hoped to preserve a far more natural environment than it was forced by compromise to accept in the 1950s. By then, the practical necessity for fairly robust park development to meet the needs of large beach crowds and other visitors brought in on modern roads and bridges was greatly increased. The need to accommodate large crowds demanded infrastructure, a reality that few contested (NPS 2007f). In March 1957, Superintendent Hanks issued a summary of the Mission 66 prospectus that re-emphasized that most other facets of the park’s development were “dependent upon success in the field of erosion control” (NPS 2007f). In September 1958, a major management review was conducted at the Seashore. The review was generally positive but it recommended that a revised Mission 66 prospectus be completed after the final master plan and interpretive development plan, both undergoing review, were completed. Among a number of findings, the review also determined that the park urgently needed to place vehicular access ramps that would allow commercial fishermen access to the beach and stop them from building their own makeshift access points (NPS 2007f).

Between 1955 and 1958, the NPS completed major developments that established the Seashore’s basic recreational infrastructure (NPS 2007f). The new facilities, along with the completion of NC-12 on Hatteras Island in 1954 and on Ocracoke Island in 1957, contributed to more than doubling park visitation between 1955 and 1961 (NPS 2007f). After the highway was completed, a major problem was the bottleneck at Oregon Inlet where a fast-growing volume of visitors quickly overran the existing state ferry operation. Eventually, congestion at the bottleneck of Oregon Inlet became so bad that a bridge was the only solution. Because the traffic jams caused such a problem for the NPS, and because a bridge would benefit other federal agencies working on the Outer Banks, Congress authorized the NPS to help fund the needed bridge (NPS 2007f). On August 30, 1961, the NPS issued a press release discussing its support for congressional legislation that would allow the agency to help the State of North Carolina build a bridge across Oregon Inlet. The bill was submitted by Bonner on May 1, 1961, and sent to the whole House on August 28, 1961 (HR 6729). Bonner’s motivation was simple—the congestion at Oregon Inlet could not be alleviated by additional ferries. The NPS was interested in helping to pay for the bridge, which

reversed its early position, if for no other reason than the congestion generated frequent criticism both by the public and in the press. Traffic congestion also put pressure on NPS facilities north of the inlet. Cape Hatteras National Seashore was thought the only example of a park where the state maintained a road within the NPS system. The NPS acknowledged that such a bridge was a long-sought goal of the state and those living in the Outer Banks but was a cost beyond their means. NPS staff also realized the park and its visitors would benefit from the elimination of the bottleneck at Oregon Inlet. There were some minor complications, however, that may have been reminiscent of NPS sensitivity over the issue of wilderness preservation in the 1930s, when the NPS had hoped to preserve a vast expanse of wild seashore on the Outer Banks. Compromise was unavoidable, namely as a result of an NPS agreement to allow road construction, which was necessary to secure local support for the Seashore (NPS 2007f).

On October 11, 1962, Congress authorized funds for construction of a bridge to cross Oregon Inlet within Cape Hatteras National Seashore. The law (Public Law 87-79; 76 Stat. 909) allowed the Secretary of the Interior to pay \$500,000 toward the cost of the bridge as long as this amount came only from funds specifically designated for that purpose and the state agreed to pay for upkeep. The remainder of the costs would be borne by the federal government. Construction of the bridge over Oregon Inlet took approximately two years and made a huge impact on the village life of Hatteras Island and on the island's wild flora and fauna. Upon completion, the bridge brought in waves of tourists whose numbers increased with each passing year, an indisputable and considerable economic benefit to all the villages on Hatteras and Ocracoke islands. It was a windy day in early May 1964 when the new causeway linking Bodie and Hatteras islands was duly dedicated as the Herbert C. Bonner Bridge (NPS 2007f).

In some ways, the Bonner Bridge had taken as long to create as the park itself. It might even be said that neither would have been possible without the other, since to some extent, the existence of the park was predicated upon the faith of Outer Banks residents in the NPS to protect and promote their interests, which included both the preservation of an idyllic coastal recreation environment that attracted increased tourism and the development of transportation links between the remote islands and the outside world. Access was a key issue if the growing potential of a tourist-based economy was actually to be realized. In the years ahead, this fundamental dilemma, common to many national park areas, would pose great challenges to managers of Cape Hatteras National Seashore (NPS 2007f).

Well before the end of Mission 66, NPS officials understood that the beach management (i.e., dune stabilization) situation was dire. The NPS was waging a fight against a fundamental force of nature, but what was not crisply understood was the futile nature of that struggle and how a commitment to preserve a "primitive wilderness" had been transformed into a commitment to protect human-made structures using techniques that actually undermined the preservation of natural beaches. As the work continued to stabilize dunes, vehicular access to the beaches became a more pressing issue. In March 1963, Director Conrad Wirth and Rep. Herbert Bonner discussed the use of automobiles on beaches, specifically regarding vehicle ramps. Bonner had received complaints from local residents who wanted ramps set near their own property. By then, according to Wirth, eighteen ramps had been set up to allow commercial fishermen beach access, which Wirth said was prescribed by the law creating the Seashore. While these ramps had been set up to allow commercial fishermen to access the beach, Wirth said that the public could use the ramps also to gain access to the shore. According to Wirth, "past history has shown that each vehicular access is a vulnerable spot for the ocean to break through and cause extensive damage to the barrier dune and natural features of the area." "To provide more access would jeopardize NPS stabilization efforts," Wirth said, "while providing ramps near one private property owner would only inspire others to ask for similar access" (NPS 2007f).

Automobile driving on the beach was an infrequent topic in NPS and congressional correspondence from this period, but clearly the NPS viewed vehicular access to the beach as necessary to fulfill an obligation to allow continued commercial fishing by legal residents of the villages. This position, however, was an

interpretation of the law authorizing the Seashore and its amendments, since neither made specific reference to automobiles or how beach access would be provided. It only specified that commercial fishing by legal residents was to be allowed. One practice in use by local residents was “haul fishing,” a technique whereby fisherman used a jeep or similar vehicle to drag a net from the sea to the beach. Vehicle use was integral to this practice and not merely a means for transportation. The NPS established beach access ramps to enable commercial fishermen to continue to use vehicles to fish from shore while mitigating damage to the barrier dunes by controlling the points of entry, but these ramps also allowed general visitors motorized access to the beach (NPS 2007f).

Within a decade of completion of the Bonner Bridge, the NPS was facing serious public complaints on two related fronts. The first concerned the presence of ORVs or “beach buggies,” especially at Cape Point near the famous Cape Hatteras Lighthouse. Such vehicles, then mainly used by fishermen, concentrated near the best fishing sites in groups of up to fifty or so, leaving piles of beach trash and making it difficult for other visitors to enjoy the scenic vista. The problem may have existed for a while, but by 1972, as one writer informed Director George B. Hartzog, Jr., a person “literally could not take a photograph of the waves by themselves without two or three hip-booted intruders in the viewfinder.” This visitor did not want a total ban on the buggies but did want some restrictions. He protested that the NPS mission was to leave the land “unimpaired” and noted that if there were fifty buggies this year, when would it stop? “You might as well call it the Hatteras Parking Lot,” he concluded (NPS 2007f).

The stock NPS response was that “in contrast to natural areas, the recreation area is supposed to serve many needs.” Indeed, according to Deputy Assistant Director Joseph C. Rumberg, Jr., “a closure of the cape to allow full aesthetic appreciation of the power and wonder of the ocean, at the expense of fishing and beach buggy use, would be a matter fraught with controversy.” Nevertheless, Director Hartzog directed the Southeast Regional Office in Atlanta to arrange with the Superintendent to study the possibility of changes, limitations, or even the elimination of beach buggies. Hartzog hoped the study would develop recommendations that might provide the park with a better means of controlling vehicle use on the beach (NPS 2007f).

The problem was actually more serious than suggested by visitors annoyed over compromised scenic views. The Bonner Bridge had also brought increasing numbers of fishermen who were not residents of the Outer Banks but were bent on using more sophisticated means to exploit commercial opportunities. The basic issue involved fishermen using dories loaded with nets that were pulled along the beach by truck until a school of fish was located. Then, a boat was launched and part or all of the school was surrounded by the net tied to the truck onshore, which hauled in the line. According to the account of a sport-fishing newsletter, an existing practice became an acute problem by 1972. During the 1930s, only a half-dozen local residents practiced this technique, some using nets that were up to 200 yards long. Between 1936 and the early 1960s, the number of fishermen had remained fairly constant, and with up to ten such fishermen working, their nets were still no longer than 400 yards (NPS 2007f).

After the Bonner Bridge opened in 1964, however, commercial fishermen from elsewhere began participating in the fish harvest, some from as far away as New York. Now as many as twenty commercial fishermen were using nets up to sixteen hundred yards in length. This activity was wiping out striped bass because such huge nets took in 20- to 50-pound fish in catches weighing up to 10,000 pounds. Worse, non-commercial fish were merely left to die and rot on the beach. By 1972, the problem was acute, and local fishermen began to complain, noting that they brought in cash much needed by the villagers whereas outside commercial fishermen merely depleted the fishing stock. After several years of competition between these various groups of fishermen, the situation began to threaten violence, and calls for new legislation were voiced (NPS 2007f).

In the coming years, many heated debates were to erupt between commercial, sports, environmental, and park-access groups. It should be noted, however, that between the 1930s until well into the 1960s, the public lodged few complaints about fishing, beach driving, or conflicts between vehicle-users and other beach-goers. At first, the few Outer Banks residents with vehicles, and occasional visitors, did not relish the notion of beach driving and did so simply because there were almost no roads on which to drive. After World War II, improved automotive technologies allowed more villagers and visitors to drive along the seashore, but without roads this activity still entailed the onerous rituals of deflating and re-inflating tires, digging out from occasional sandpits, and risking getting stuck. Such experiences were unpleasant but whether they bothered the typical “Hatterasman” as writer Ben Dixon MacNeill phrased it, was another question (NPS 2007f).



Beach driving 1933

Credit: NPS

Outer Banks residents were by tradition and necessity a people of the sea and were adept at using it for transportation. They did not need roadways for their own transportation or lifestyle needs, rather an absence of roads limited economic growth. As their traditional life ways declined, Outer Banks residents increasingly sought the roads and bridges needed to sustain a tourist-based economy. A major reason the NPS began to reappraise its opposition to an island parkway was that random beach driving led to destruction of the artificial dunes and harmed native flora and fauna. Ironically, the very road that boosted tourism and was supposed to better protect the environment by eliminating the chore of beach driving was also what made commercial and recreational access to the beach ever more possible and brought those separate interests into conflict. However, some commercial fishermen used jeeps early on to operate shore-based fishing nets while the NPS set up ramps to help channel sport fishermen away from the more sensitive dune areas. These early ramps also gave access to increasing numbers of tourists. Still, such uses did not begin to elicit great controversy until after the Bonner Bridge opened in 1964. With the bottleneck at Oregon Inlet removed, there was no limit to the number of park visitors who in a day's span could drive down the banks and out onto the beach. Completion of the Bonner Bridge, therefore, marks a key demarcation point in the history of the first national seashore (NPS 2007f).

In brief, residents adopted the use of ORVs for commercial netting of fish, while sport fishermen used ORVs to pursue migrating schools of game fish and reach more productive areas, such as Cape Point or the inlets, often a mile or more from the nearest paved surface. Presently, ORVs are used to access the beach for activities such as commercial and recreational fishing, sightseeing, travel to and from swimming and surfing areas, and pleasure driving (NPS 2004b).

Today ORVs access the ocean beaches and sound shoreline via a system of “ramps” located off NC-12 and other paved roadways. The ramps began as an informal system of unimproved access points connecting the roadway to the sounds and beaches. Over time, this system was formalized and the oceanside ramps are now numbered, maintained, and identified on the Seashore’s ORV route maps as official vehicle access routes for beach access. In 1978 there were 28 identified ramps, 22 of which were located on NPS lands. Although the NPS opened a new ramp to the public in 1998, the number of ramps

has decreased since 1978 as some were lost to erosion and others were closed to the public and are now used for administrative vehicle access only (NPS 2004a). The NPS currently has 17 oceanside access ramps available for public ORV use (NPS 2008g).

ORV use at the Seashore has historically been managed since the 1970s through various draft or proposed plans, though none were ever finalized or published as a special regulation as required by Executive Orders 11644 and 11989 and 36 CFR 4.10. In 1973, in response to Executive Order 11644, Use of Off-Road Vehicles on the Public Lands (February 8, 1972), the Seashore developed a draft ORV management plan (NPS 2004b) that included the following:

- Designation of 27 beach access routes or ramps.
- Identification of a permitted area for travel from the toe of the dune to the ocean.
- License requirements for vehicles and operators.
- Closure of one heavily eroded section of the beach near the Cape Hatteras Lighthouse year-round.
- Designation of seasonal closures in five areas heavily used by pedestrians between May 26 and September 10.

This management plan was not finalized or published as a special regulation, as required by Executive Order 11644 and 36 CFR 4.10.

A few years later, in response to Executive Order 11989, Off-Road Vehicles on Public Lands (May 24, 1977), the NPS began developing a draft ORV management plan for the Seashore. In response to the plan, which was released in January 1978, the North Carolina Beach Buggy Association and the Outer Banks Preservation Association each issued proposed alternative plans for ORV management at the Seashore. These proposed plans were considered by the Seashore, along with public comment, and in November 1978 the Draft Interim Management Plan: Off-Road Vehicle Use, Cape Hatteras National Seashore was issued (NPS 1978a). It proposed guidelines for the management of ORV use at the Seashore while the general management plan was under development. The draft interim ORV management plan identified zones of use for ORVs, as well as described conditions under which vehicles would be allowed or prohibited. The proposed zones of use were as follows:

- Zone 1 – Ocean Beach: In this zone ORVs will be permitted landward from 150 feet of the existing tide line, but no closer than 20 feet to the toe of the dune or vegetation line. Portions of Zone 1 may be closed seasonally (May 15 through September 15), or closed temporarily to protect nesting birds or sea turtles, or when the distance between the existing tide and the toe of the dune or the vegetation line is reduced to less than 100 feet. Permits must be issued for vehicles that have less than four weight-bearing wheels and do not meet all vehicular licensing and inspection requirements of their state of origin.
- Zone 1(a) – Seasonally closed areas include those Zone 1 areas which, due to seasonal heavy pedestrian, swimming, wildlife or other uses, are deemed seasonally unsuitable for ORV use.

Seasonally closed areas shall be identified by signs at both ends of the area, and shall be indicated on maps available for viewing at the offices of the Superintendent and of each District Ranger.

Dates of seasonal closures shall be May 15 through September 15 of each year, except on Pea Island National Wildlife Refuge, where the Refuge Manager shall post such closures as he may find necessary to implement the regulations of the USFWS.

Seasonally closed areas shall consist of, but not be limited to, the following areas: Bodie Island, milepost 0 to milepost 3; beach areas fronting the villages of Rodanthe, Waves, Salvo, and Avon;

northern boundary of Buxton to one mile south of the Cape Hatteras Lighthouse; beach fronting the villages of Frisco and Hatteras; milepost 49 to milepost 54; and Ocracoke Island milepost 65 to 70.

- Zone 1(b) – Temporarily closed sections include:

Those narrow beach sections of Zone 1 that have decreased in width to the point where the average distance from the existing tide to the toe of the dune or vegetation line is less than 100 feet (30 meters). These sections shall be marked at each end by signs reading “Beach Temporarily Closed to Vehicle Traffic” and shall be indicated on maps available for viewing at the offices of the Superintendent and each District Ranger.

Bird Nesting Areas – Portions of high beach and inlet flats where significant bird nesting is occurring. These areas shall be temporarily closed to all visitor use and shall be marked by posts and “Bird Nesting Area” signs.

Sea Turtle Nests – Locations on the beach where a sea turtle nest is discovered. A rectangular section of beach that includes the nest with 300 feet (92 meters) of tide line seaward of the nest shall be temporarily closed to ORV use from dune to existing tide line. Closures shall be marked at both ends by posting with signs indicating “no ORVs – temporary turtle nest.” The period of closure shall begin on posting, 50 days after the turtle lays, and shall end 25 days later on official removal of the signs. The purpose of the closure is to protect hatchling loggerhead turtles, listed as “threatened” under the ESA.

- Zone 2 – Soundside: Marsh and flat land west and northwest of NC-12. Vehicular traffic shall be confined to marked trails, posted as open. No permit shall be required.
- Zone 3 – Buxton Woods, Open Ponds: The area of grassed dunes and forest lands lying between Headquarters, Cape Hatteras Group Coast Guard, and Frisco Campground. The area is roughly bounded on the south by the ocean dunes; on the east by a northeast-southwest trending line lying west of the Cape Point Campground, Coast Guard Group Headquarters, and NPS residence-maintenance area complex; on the north by the NPS boundary through Buxton Woods; and on the west by a south-north trending line lying east of the Frisco campground. In this zone, limited vehicular access on ORV routes posted as open shall be permitted only upon application in person to the Hatteras District Ranger (or designee) and there shall be no more than 30 total ORVs in this zone at any one time. Limited access permits for vehicular entry shall not exceed 24 hours in duration and shall not be issued more than 7 days in advance. Permits are renewable upon request except when vehicular capacity has been reached.
- Zone 4 – Dunes and Sand Plains: All land and dune areas seaward of the right-of-way of NC-12, except Zone 1 and Zone 3 lands. ORV operation is permitted only on trails posted for ORV use. Permits must be issued for vehicles that have less than four weight-bearing wheels and do not meet all vehicular licensing and inspection requirements of their state of origin (NPS 1978a).

The 1978 draft interim ORV management plan also called for a posted speed limit of 25 miles per hour and for ORV operators to possess a current driver's license from their state of origin. The permitting portion of the 1978 draft plan was controversial and was removed before release of the 1978 Draft Interim Management Plan: Off-Road Vehicle Use, Cape Hatteras National Seashore (NPS 1978a). Except for Zone 1, the 1978 draft plan stated that no vehicle would enter any unpaved dirt or sand trail or path, or follow any vehicular tracks not posted as an ORV trail. Though the draft plan was not finalized or published as a special regulation as required by Executive Orders 11644 and 11989 and 36 CFR 4.10, the Seashore implemented the following plan components:

- Consolidating and clearly marking entrance and exit points to soundside areas;
- Establishing sea turtle and bird nesting protection zones;
- Increasing efforts to provide signage and other information concerning beach conditions and open and closed areas; and
- Providing better maintenance of access routes and ramps.

In 1980, the North District Ranger prepared the ORV Plan North District Cape Hatteras National Seashore (NPS 1980). During development of this draft plan, the North District Ranger asked concerned individuals for comments and suggestions regarding ORV use at the Seashore. Based on these comments and suggestions, the plan included recommendations for improvements and a general description and project status of each soundside and oceanside access point from Bodie Island to Hatteras Inlet. The plan recommended that the general management plan consider additional parking needs on the soundside and oceanside and at comfort station locations. It also recommended that the general management plan consider impacts of traffic flow changes as a result of corridor and road closures (NPS 1980). The 1984 general management plan would address these concerns by incorporating additional parking lots and parking turnouts along NC-12 (NPS 1984); however, the 1980 draft ORV plan was not finalized or published as a special regulation, as required by Executive Orders 11644 and 11989 and 36 CFR 4.10.

The 1984 General Management Plan / Development Concept Plan / Environmental Assessment: Cape Hatteras National Seashore (NPS 1984) addressed direct and indirect threats to the Seashore, with ORV use cited as one such threat. The General Management Plan specified five visitor experience zones. ORV use was listed as an appropriate activity in three of these five zones: ocean/beach, interior dunes/maritime forests, and marsh/sound. The General Management Plan called for ORV use to be regulated by the 1978 draft interim ORV management plan (NPS 1978a) which was drafted after consideration of public comment to the 1978 draft plan (NPS 1978b). The General Management Plan called for additional planning and research on ORV use and for monitoring impacts of ORVs, but did not set forth an ORV management plan or special regulation, as required by Executive Orders 11644 and 11989 and 36 CFR 4.10.

ORV use was managed by the above planning documents during the 1980s and 1990s. On December 9, 1999, a petition for rulemaking was submitted to the NPS that requested a ban on the use of all-terrain vehicles (ATVs), dune buggies, sand buggies, and other four-wheel drive vehicles on all off-road areas in the national park system, which included the Seashore. This petition was followed-up by a second petition in 2004. The second petition, specific to the Seashore, was submitted on June 7, 2004, and requested Rulemaking Governing Off-Road Vehicle Use in the Cape Hatteras National Seashore. Petitioners claimed the Seashore's informal authorization of ORV use violated the ESA, executive orders and federal regulations regarding ORV use in the national parks, the *Organic Act*, the *General Authorities Act of 1970*, the Cape Hatteras National Seashore enabling legislation, and various NPS management policies. Both of these petitions are part of the reason for developing this ORV plan/EIS.

Following the submission of the two petitions, in 2004 the Seashore issued Superintendent's Order 7, ORV Management, to resolve ORV issues created by Hurricane Isabel, which flattened sand berms and exposed areas of the Seashore to ORV use that the berms once protected from such use (NPS 2004c). After reviewing the 1984 General Management Plan, the Superintendent decided that parts of the 1978 draft interim ORV management plan (permitting sections excluded) would be used as Seashore guidance pending development of a long-term ORV management plan and special regulation.

To provide guidance for the proper management of protected species and to comply with the ESA, while providing for use of the Seashore's recreational resources until an ORV plan/EIS and special regulation could be completed, the Seashore began development of the Interim Strategy in late 2004. The species addressed in the Interim Strategy are those specifically affected by recreational and ORV use within the Seashore that are listed either federally or by the state as threatened, endangered, or species of special concern, or are of special concern to the Seashore.

While the Interim Strategy was being prepared, Defenders of Wildlife issued a notice of intent (NOI) to sue the NPS for alleged violations of the ESA at the Seashore in May 2005. After this NOI was issued, the Seashore continued to develop the Interim Strategy, which was published for public comment in January 2006.

In December 2006, after the first season that NPS had operated under the Interim Strategy and after the USFWS had issued the Biological Opinion, Defenders of Wildlife issued another NOI to sue NPS and USFWS (collectively referred to as Federal Defendants), alleging that the Biological Opinion did not meet the requirements of the ESA and re-asserting the previously stated claims against NPS from the earlier NOI to sue. NPS issued a Finding of No Significant Impact (FONSI) on the Interim Strategy in July 2007 (NPS 2007a).

Alternative D, as modified in the Interim Strategy FONSI, was identified as the selected alternative. Alternative D outlines a multifaceted strategy (including a program of increased monitoring, recreational and ORV closures, education and enforcement) for minimizing impacts to wildlife, including threatened and endangered species and other protected species, from visitor uses including ORV use. The USFWS Raleigh Field Office prepared a Biological Opinion associated with the Interim Strategy in response to their review of the Cape Hatteras National Seashore's biological assessment (NPS 2006b, January 6, 2006), the Interim Strategy (NPS 2006a, January 18, 2006), and other sources of published and unpublished biological information. The Biological Opinion evaluated the proposed action of the Interim Strategy and its potential impact to protected species at the Seashore. The USFWS concluded that incidental take of protected species would occur from management actions under the Interim Strategy, but the level of anticipated take during the limited period the Interim Strategy would be in effect is not likely to result in jeopardy to the species or destruction or adverse modification of designated or proposed critical habitat (USFWS 2006a). In March 2007 and December 2007, the NPS requested reinitiation of consultation with the USFWS. These consultations concluded with the USFWS issuing amendments to its original Biological Opinion in April 2007 and March 2008, respectively. Both amendments addressed performance measures for piping plover and loggerhead, green, and leatherback sea turtles.

In October 2007, Defenders of Wildlife and the National Audubon Society, represented by the Southern Environmental Law Center (collectively referred to as Plaintiffs), filed a lawsuit claiming the Interim Strategy violated the ESA and other laws, failed to protect species at Cape Hatteras National Seashore, and failed to comply with the requirements of the ORV executive orders and NPS regulations on ORV use. In December 2007, Dare County, Hyde County, and the Cape Hatteras Access Preservation Alliance, a coalition of ORV/access and fishing groups, were granted Intervenor-Defendant status in the lawsuit.

In April 2008, the Plaintiffs, Federal Defendants, and Intervenor-Defendants jointly submitted to the court a consent decree that would be signed by a U.S. District Court Judge on April 30, 2008, to settle the

lawsuit. The consent decree, which is enforceable by the court, provides for specific species protection measures and requires the NPS to complete the ORV management plan/EIS and required special regulation by December 31, 2010, and April 1, 2011, respectively. Consent decree modifications of the Interim Strategy included changes in the size of buffers provided for various species at the Seashore, as well as added restrictions related to night driving.

SUMMARY OF SCIENTIFIC LITERATURE ON OFF-ROAD VEHICLE USE

A literature review was prepared to support the development of an ORV management plan at Cape Hatteras National Seashore. The literature review (appendix A) provides a summary of available scientific information related to the potential effects of ORV use on natural and cultural resources similar to those found at the Seashore or in geographic locations with similar environmental conditions.

SCOPING PROCESS AND PUBLIC PARTICIPATION

An NOI to prepare an Environmental Impact Statement was published in the Federal Register on December 11, 2006, to announce the beginning of the ORV planning process. To determine the scope of issues to be analyzed in depth in this plan/EIS, meetings were conducted in February and March of 2007 with Seashore staff, other parties associated with preparing this document, and members of the public. Additional public meetings were held in January 2008 and a public comment period was held in January – February 2008 to examine the range of alternatives and provide input on alternative elements. In response to public input and issues raised during the scoping process, the interdisciplinary planning team reworked the preliminary alternatives to those analyzed in this plan/EIS except for alternative F, which was developed after the negotiated rulemaking process concluded. A notice of availability for the draft plan/EIS was published in the *Federal Register* on March 12, 2010. Following the release of the draft plan/EIS, a 60-day public comment period was open between March 12, 2010, and May 11, 2010. Chapter 5 of this plan/EIS provides more details about agency and public scoping activities that were an integral part of the planning process for this plan/EIS.

NEGOTIATED RULEMAKING PROCESS

The *Negotiated Rulemaking Act of 1990* (5 United States Code [USC] 561-570) establishes a statutory framework for agency use of negotiated rulemaking to reach a consensus with stakeholders on a proposed regulation. Concurrent with the *National Environmental Policy Act* (NEPA) process, the NPS used a negotiated rulemaking process in an effort to develop a proposed rule for long-term ORV management at the Seashore. Because negotiated rulemaking allows interested, affected parties more direct input into the development of the proposed regulation, the NPS had hoped that the negotiated rulemaking process would result in a rule that is sensitive to the needs and limitations of both the parties and the agency.

In December 2007, the Department of the Interior established a negotiated rulemaking advisory committee (Committee) to assist the NPS in the development of an ORV regulation for the Seashore. The Committee met 11 times from January 2007 through February 2009, and conducted numerous subcommittee and work group meetings and conference calls. The Committee discussed and explored options for the full spectrum of ORV management issues covered in this plan/EIS. As a result of these discussions, the NPS considered a variety of concepts and measures that either originated from Committee members or were discussed

The NPS used a negotiated rulemaking process in an effort to develop a proposed rule for long-term ORV management at the Seashore.

during Committee, subcommittee, or work group sessions. Although the Committee as a whole did not reach a consensus on a recommended alternative, in creating the alternatives in this plan/EIS, the NPS has made a management judgment as to which combination of concepts and measures would make an effective overall ORV management strategy.

ISSUES AND IMPACT TOPICS

Issues associated with implementing an ORV management plan at Cape Hatteras National Seashore were initially identified by Seashore staff during internal scoping and were further refined through the public scoping and negotiated rulemaking processes. The following text discusses the issues that formed the basis for the impact topics discussed in chapters 3 and 4 of this plan/EIS.

FLOODPLAINS AND WETLANDS

Although the entire ocean shoreline of the Seashore is classified as a marine or intertidal wetland (Cowardin et al. 1979), these areas are not measurably impacted by vehicle use due to the dynamic nature of the beach environment and the ability of the intertidal areas to “restore” themselves, since ruts from vehicle tires are filled in by wave action and moving sands. A study by Leatherman and Godfrey (1979) indicated that the intertidal ocean beach (sand beach area) is the most resistant to long-term vehicle impacts. While no definite conclusions were drawn from the study, they did indicate that natural changes to the beach appeared to overwhelm vehicle effects in this particular study. Given these studies, these types of wetlands were not analyzed in detail in this plan/EIS. However, vegetated wetlands along the soundside and interior of the islands are susceptible to direct damage from ORV use, and are discussed further under the “Wetlands” impact topic.

Estuarine wetlands are often denuded of vegetation when ORVs are driven and parked along the soundside shoreline. Also, many of the interior or interdunal roads are located near wetland areas that are often not noticeable to visitors. When standing water is present along these ORV routes, visitors often drive over adjacent vegetated areas in an attempt to avoid the standing water. This results in wider roads, new vehicle routes, and crushed or dead vegetation. Construction of new parking areas is also of concern for wetlands that may be located nearby.

Nearly all of the Seashore is located within the 100-year floodplain, with the exception of a small area at the Navy tower site on Bodie Island and larger areas around Buxton. In this plan/EIS, the issue of floodplains is considered under any alternative that includes development, such as constructing new parking lots or expanding existing parking lots, because these actions have the potential to impact the function and value of the floodplain. However, it is recognized that the barrier island floodplain systems function quite differently than inland floodplains, which primarily function by providing lowland areas for floodwater storage and conveyance. In contrast, floodplains at the Seashore are subject to coastal flooding caused by storm systems that can raise water levels substantially via storm surge.

WILDLIFE AND WILDLIFE HABITAT

Cape Hatteras National Seashore provides important habitats and plays a vital role in the survival of many wildlife species. Whether for nesting, resting, foraging, or feeding, the Seashore provides for a diverse assemblage of birds. Rich, varied habitats and the Seashore’s location along the Atlantic Flyway attract birds. In 1999, the American Bird Conservancy designated Cape Hatteras National Seashore as a Globally Important Bird Area in recognition of the Seashore’s value in bird migration, breeding, and wintering (American Bird Conservancy 2005). This diverse ecosystem includes both prey species that sensitive species rely on for survival, and predators of sensitive species. ORV use along the Seashore can disrupt

habitat or cause a loss of habitat in high use areas. Habitat loss due to ORV use could also occur indirectly as a result of the noise and disturbance from this activity.

Invertebrates are impacted by ORV use. A recent study at the Seashore researched the ghost crab (*Ocypode quadrata*) as an indicator of ecosystem health, since it may show the impacts of ORVs and other recreational uses (Hobbs et al. 2008). The study considered the impacts of ORVs on ghost crab population densities and recovery rates in relation to ORV use and usage regulations. Data to determine the impacts of ORVs on crab populations were collected in several areas in the Seashore. Closures of the beaches to vehicles were initiated to study short-term effects and recovery rates. It was found that ORVs had a detrimental impact on ghost crab populations at the Seashore and that areas subject to vehicle use had significantly fewer ghost crab burrows than those areas without vehicles. As shown by Steiner and Leatherman (1981), ghost crabs can be killed or mortally injured by ORVs driving over them, or by altering their environment. This study concluded that high-energy weather events change the dynamics of the population, allowing more ghost crabs to inhabit the area, but ORVs reduce the ability for ghost crabs to inhabit the area (Hobbs et al. 2008).

FEDERALLY LISTED THREATENED OR ENDANGERED SPECIES

ORV use at the Seashore could impact federally threatened or endangered species and their habitats on the Seashore's soundside and ocean beaches. Conflicts between listed species and recreational use (including ORV use) could create direct or indirect losses to a listed species. The Seashore is home to federally threatened or endangered species year-round. Increased year-round visitation results in a greater potential for conflicts between visitor use and listed species. The Seashore is used by both the endangered Great Lakes population of piping plover (considered threatened on wintering grounds, which include the Seashore) and the threatened Atlantic Coast population (for breeding and wintering, with breeding occurring at the Seashore). Seabeach amaranth, a federally listed threatened plant species, has been found in limited numbers at the Seashore in the recent past. However, no plants have been documented since 2005. According to the USFWS, seabeach amaranth has been eliminated from two-thirds of its historic range and ORVs are considered one of the more serious threats to its continued existence.

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Nesting sea turtles at the Seashore include the loggerhead, green, and leatherback turtles. Kemp's ridley and hawksbill turtles are known to occur only on the beaches of the Seashore through strandings. Threats to listed sea turtles, their nesting sites, and young include storm events, predation, artificial lighting, campfires, and recreational beach equipment; disturbance by pedestrians and pets; and direct and indirect impacts of ORVs. In May 2008, the red knot was identified by the USFWS as a candidate for the endangered or threatened species list. This species is a migrant and occasional winter resident at the Seashore.

Current and possible future management alternatives for ORV and other recreational uses would take into consideration the needs of federally listed threatened and endangered species in determining management measures.

STATE-LISTED AND SPECIAL STATUS SPECIES

Habitat for state-listed and special status species, such as the American oystercatcher and several species of colonial waterbirds, may be vulnerable to disturbances caused by recreational uses, including ORV use. As of May 2008, the American oystercatcher, Wilson's plover, least tern, common tern, and black skimmer were listed by the North Carolina Wildlife Resources Commission (NCWRC) as species of

special concern (15A NCAC 10I.0105). The NCWRC also lists the gull-billed tern as a state-threatened species. The American oystercatcher is listed as a species of concern by the Southeastern Shorebird Conservation Plan, and both the American oystercatcher and the Wilson's plover are identified in the U.S. Shorebird Conservation Plan as "Species of High Concern" (Schulte et al. 2007; Brown et al. 2001). All these state-listed or special status species have had historically low reproductive rates. The lack of large undisturbed areas for successful breeding contributes to these low rates at the Seashore. Frequent human disturbance can cause the abandonment of nest sites as well as direct loss of eggs and chicks. In addition to these breeding species, the Seashore is also home to migratory species such as the red knot, that use habitat at the Seashore during the winter or during migration. The red knot is currently a candidate for ESA protection (74 FR 57804).

All of the bird species that are described under the "State-Listed and Species Status Species" sections of the plan/EIS are listed in 50 CFR § 10.13, which indicates species that are subject to the protections of the MBTA. These species are also designated as Birds of Conservation Concern (USFWS 2008b) and/or Migratory Nongame Birds of Management Concern in the United States (USFWS 1995) which qualifies them as species of concern according to Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds. The Birds of Conservation Concern designation includes migratory and non-migratory species that are of concern due to population declines, naturally or human-caused small ranges or population sizes, threats to habitat, or other factors. The USFWS 1995 list of Migratory Nongame Birds of Management Concern in the United States lists species that are of concern because of (1) documented or apparent population declines, (2) small or restricted populations, or (3) dependence on restricted or vulnerable habitats. Therefore, the NPS is required to protect these species according the provisions of both the executive order and the MBTA.

In April 2010, the NPS signed a Memorandum of Understanding (MOU) with the USFWS to strengthen coordination for migratory bird conservation. The MOU helps identify and implement strategies to complement and support existing efforts and facilitate new collaborative migratory bird conservation partnerships and comprehensive planning strategies for migratory birds under the MBTA. The Seashore has consulted with the USFWS on this plan/EIS, as provided for under the MOU.

SOUNDSCAPES

Impacts related to soundscapes could occur wherever ORVs are allowed on the oceanside or the soundside. Vehicular noise has the potential to impact other recreational uses, such as bird watching or enjoying the solitude and natural soundscape of the Seashore. In addition to impacting soundscapes in relation to visitor enjoyment, vehicular noise could create unsuitable habitat for Seashore wildlife.

VISITOR USE AND EXPERIENCE

ORV use at the Seashore is an integral component of the experience for some visitors and may be impacted by ORV management activities. Other Seashore visitors who are not using ORVs may be impacted by ORV use. Currently, the mix of recreational users at the Seashore includes a variety of users such as ORV users, day-users without ORVs, swimmers, anglers, bird watchers, water sports enthusiasts, and other users. Although some visitors want to use an ORV to access the Seashore, other visitors wish to engage in recreational activities on foot and away from the presence of motorized vehicles. Restricting ORVs from areas of the Seashore could enhance the recreational experience for some and diminish the experience for others. Visitor experience could be affected by conflicts between motorized and nonmotorized recreation users. A further component of visitor experience is providing for the safety of all visitors at the Seashore.

Other issues related to visitor use and experience include viewsheds, aesthetics, and night skies. While the sight of ORVs can destroy the viewshed and aesthetics for some visitors, they also change the viewshed by altering the natural landscape. Some visual signs of ORVs include tire ruts and markings and trash left behind. ORV use impedes or destroys coastal features like wave or wind ripples in the sand, tide wrack lines, overwash deposits, wind sorted sediments, dune formation, etc. As an example, the burrows of ghost crabs, the most common beach inhabitants, are nearly absent from beaches where ORVs are allowed. Installing posts around closure areas for protected species from ORVs could also impact the views and aesthetics of the area for those who want a natural view without evidence of man-made materials.

Headlights and other artificial lights associated with nighttime ORV use may affect visitors' opportunities to enjoy night skies at the Seashore. Conversely, lack of artificial lights may make it more difficult to see, posing hazards to ORV users and pedestrians. Issues related to night skies include night driving, headlights, campfires, and all other light uses associated with human activity after dusk. The Seashore is one of the few places on the Atlantic Coast where visitors can experience the magnificence of a dark night sky. The Seashore has been ranked, along with Cape Lookout National Seashore, as the 9th best place to view the night sky by the NPS Night Sky Program. ORV use at night has the potential to affect visitor experience of the "brilliance" of the night sky. In addition to visitors, animals are also impacted by lights at night. The stars, planets, and moon are visible during clear nights and influence many species of animals, such as birds that navigate by the stars or prey animals that reduce their activities during moonlit nights. Additionally, the phosphorescence of waves on dark nights helps sea turtle hatchlings orient to the ocean. Excessive artificial light has the potential to disorient turtle hatchlings and disrupt their crawl to the ocean. Pursuant to NPS Management Policy 4.10 (NPS 2006c), to prevent the loss of natural night skies, the NPS should minimize light that emanates from park facilities, and also seek the cooperation of park visitors, neighbors, and local government agencies to prevent or minimize the intrusion of artificial light into the night scene of the ecosystems of parks. Furthermore, the NPS will not use artificial lighting in areas such as sea turtle nesting locations where the presence of the artificial lighting could disrupt a park's dark-dependent natural resource components (NPS 2006c). Impacts of artificial light sources on animals will be discussed in chapters 3 and 4 under the threatened and endangered species, state-listed and sensitive species, and wildlife and habitat impact topics.

SOCIOECONOMICS

Management or regulation of ORV use at the Seashore could impact the local economy by changing the demand for goods and services from ORV users in these communities. The eight villages located within the Seashore boundaries serve as access points to the Seashore for visitors, including ORV users. These villages receive economic benefit from the ORV users who take advantage of the goods and services these communities offer. The communities are concerned that if a permit system or other ORV restrictions are implemented that make it harder for ORV users to use the area, fewer tourists may come to the villages, resulting in impacts to the local economy.

Commercial fishermen currently have ORV access to areas that are closed to other ORV users because of safety reasons (i.e., narrow beach conditions), but they do not have access to areas closed for resource protection. On Ocracoke Island, two soundside access points have been identified for commercial use. Limits placed on ORV use at the Seashore may limit the activities of local commercial fishermen. Disrupting the ability of commercial fishermen to conduct business at the Seashore could negatively impact them.

SEASHORE MANAGEMENT AND OPERATIONS

Accommodating recreational uses while protecting sensitive species requires a sufficient number of personnel and an adequate level of funding. Past anecdotal evidence suggested that the Seashore did not have enough personnel to properly enforce existing ORV management decisions. If operational requirements increase under the new ORV management plan, it would require an increased commitment of limited NPS resources (staff, money, time, and equipment).

ISSUES CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS

The following issues were dismissed from further analysis.

Geologic Resources: ORV use may also impact the ocean beach at Cape Hatteras National Seashore by disturbing sand, compacting sand, creating ruts, and changing local topography. Studies have also shown that heavy ORV use could result in increased beach erosion (see the literature review in appendix A). However, the Seashore is part of a dynamic coastal barrier ecosystem, and visual effects of ORVs on ocean beaches can no longer be visible in a matter of hours due to daily tidal action, winds, rain, hurricanes, and other storm events. Although ORV use could impact geologic resources if ORVs are driven through dunes where there is no designated ramp, the use of ramps is strictly enforced and ORVs illegally cutting through dunes are rare occurrences at the Seashore, resulting in impacts that would be minor or less. ORV use can cause the collapse of beach escarpments and potentially affect sea turtle habitat. Ruts from ORV tires can also impact the behavior of piping plovers, and compaction of sand can impact invertebrate populations that are a food source for many of the shorebird species at the Seashore. However, these secondary impacts are addressed under the other impact topics in the plan/EIS including threatened or endangered species, state-listed and special status species, and wildlife and habitat. Therefore, the issue of geologic resources was not retained as an impact topic.

Geohazards: There are no known geohazards in the Seashore that would be affected by the implementation of an ORV management plan.

Vegetation: Numerous scientific studies have documented the impacts of ORV use on vegetation. However, because vegetation that exists near ORV use areas at the Seashore is almost exclusively wetland vegetation, impacts to vegetation were analyzed under the wetlands section in this plan/EIS. Potential impacts to the federally listed seabeach amaranth are addressed under the threatened and endangered species analysis in this document. Other vegetation that could be impacted from ORV use includes vegetation near the dunes, which functions to trap sand and facilitate natural dune building processes. All of the alternatives considered in this plan/EIS would include prohibitions from driving on the dunes, as well as mechanisms for establishing the ORV corridor so that any impacts to dune vegetation would be minimized. In addition, the plan/EIS would also include consultation and compliance under the *North Carolina Coastal Area Management Act* (CAMA), which includes provisions for minimization of impacts to natural dunes. Given the alternative elements that minimize dune impacts, as well as the alternatives compliance with the CAMA, impacts to vegetation associated with dune processes would be expected to be negligible to minor and were not carried forward for detailed analysis in this document.

Unique Ecosystems, Biosphere Reserves, World Heritage Sites: There are no known biosphere reserves, World Heritage sites, or unique ecosystems listed in the Seashore; therefore, implementation of an ORV management plan would have no effect. The Seashore is classified as a Globally Important Bird Area and potential impacts to bird species are included for discussion in this document.

Water Quality / Marine and Estuarine Resources: ORV use has the potential to impact water quality at the Seashore due to fluids leaking from submerged vehicles or tire ruts altering natural drainage patterns. However, water quality impacts from submerged vehicles would not rise above the level of negligible as long as the vehicle was removed from the water in a timely fashion. Also, due to the ephemeral (temporary) nature of tire ruts in beach sand, they would not result in impacts to water quality. Therefore, this impact topic was dismissed from further analysis.

Wildlife and Wildlife Habitat – Fish, Marine Mammals, and Mammals: Essential fish habitat at the Seashore is located on the soundside in areas of submerged vegetation. As previously discussed, water quality impacts from ORV use would be negligible at most and would be associated primarily with vehicle use on the ocean side. Therefore, there would be no impacts to essential fish habitat and it is not addressed as an impact topic in this plan/EIS. Mammalian species at the Seashore include red fox (*Vulpes vulpes*), gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), eastern cottontail (*Sylvilagus floridanus*), deer mice (*Peromyscus* spp.), white-tailed deer (*Odocoileus virginianus*), muskrat (*Ondatra zibethica*), nutria (*Myocastor coypus*), otter (*Lutra* spp.), mink (*Neovison vison*), and others. Impacts to mammals from ORV use and management would be expected to be negligible as most of these species do not use ORV routes and areas as habitat. The alternatives discussed in this ORV management plan do not involve the removal of mammalian predators. Any impacts to the potential for an increase of mammalian predators due to increased human activity are discussed as an indirect impact to wildlife species in chapter 4 of this document. Impacts associated with predator control efforts will be discussed in the Seashore's forthcoming Predator Control Program for Protected Species Management / Environmental Assessment and as a cumulative impact in chapter 4 of this document. Although harassment of resting or stranded marine mammals on the beach could occur from various park users, including those using ORVs, the plan will include measures to educate all visitors about marine mammal protection, resulting in negligible to minor impacts. For the reasons mentioned above, impacts to terrestrial and marine mammals were dismissed from further analysis in this document.

Air Quality: Currently, Cape Hatteras National Seashore is located in an area classified by the U.S. Environmental Protection Agency (EPA) as being in attainment for all six criteria air pollutants. Activities associated with ORV use (such as driving or idling engines) result in the emission of criteria air pollutants; the pollutants of most concern for this project include nitrogen oxides (NOx), volatile organic compounds (VOCs), and particulate matter (PM). For this reason, the NPS completed a modeling analysis to quantify the magnitude of annual emissions associated with ORV activities at Cape Hatteras National Seashore, and utilized these results to determine whether additional air quality modeling was necessary to estimate downwind pollutant concentrations and associated impacts.

Emission factor estimates were computed using the current EPA recommended model for mobile source emissions, the EPA-developed Mobile Source Emissions Model (MOBILE6), and ORV data specific to the Seashore. The results of this analysis show that for the current average vehicle use patterns on the Seashore, emissions of VOCs, NOx and PM are all individually below 5 tons per year (TPY). Emissions for these pollutants associated with the upper bound estimates for ORV use patterns (i.e., the highest estimates of observed ORV use anticipated to occur park-wide on an annual basis under any of the alternatives) are just above 5 TPY, but all below 7 TPY. Given these low annual emission levels, daily pollutant concentrations resulting from ORV use are anticipated to be extremely low. Accordingly, it was determined that implementation of the ORV management plan would result in negligible air quality impacts, and air quality was dismissed from further analysis and discussion. The MOBILE6 modeling results and report are available on the plan/EIS project website at <http://parkplanning.nps.gov/CAHA>.

Prime Farmlands: There are no designated prime farmland soils in the Seashore.

Streamflow Characteristics: Actions related to ORV management would not have an effect on streamflow characteristics. The proposed actions would not occur in any area that would impact streamflow.

Introduce or Promote Non-Native Species: While the potential for vehicles to bring non-native species to the Seashore occurs, only a small number of non-native species can live in the salt and wind of the seashore environment. Additionally, ORVs are prohibited from driving on vegetation at the Seashore. Therefore, the potential for spreading plants from one area of the Seashore to another by driving on Seashore vegetation is also very low. *Phragmites (Phragmites australis)*, a non-native plant species, is present at the Seashore, but is not likely to be transported by ORVs because its primary method of colonization is by rhizomes (underground root extensions) and not by seeds, which are prone to spreading by vehicle tires (Wisconsin DNR 2007). Therefore, because of the low potential for ORVs to promote non-native species in such a dynamic, salty environment, this topic was not carried forward for analysis in this EIS.

Archeological Resources: Archeological resources are the remains of past human activity and records documenting the scientific analysis of these remains. Archeological features are typically buried but may extend above ground; they are commonly associated with prehistoric peoples but may be products of more contemporary society (NPS 1998). Cape Hatteras National Seashore is rich in prehistoric and historic culture. The Outer Banks are rich with history of humankind's attempt to survive at the edge of the sea, and with accounts of dangerous storms, shipwrecks, and valiant rescue efforts. As of fiscal year 2007, the NPS Archeological Sites Management Information System listed 28 archeological sites within the Seashore, ranging from a single projectile point (spear, dart, or arrow tip), to cemeteries, to the Cape Hatteras Lighthouse Complex, as well as shipwrecks. The condition of almost all of the extant resources was listed as good (NPS 2007d).

None of the archeological remains associated with structures, such as lighthouse complexes, are in immediate danger of damage from ORVs because those areas are not frequented by ORV users. Other archeological sites, such as cemeteries, are on the soundside of the island and are also not in areas frequented by ORV users. Therefore, the impact to these types of sites is considered negligible.

Thousands of shipwrecks have occurred along the coast. As a result of the ongoing research, the North Carolina Office of State Archaeology (OSA) Underwater Archaeology Branch catalog lists 63 historic shipwreck remains on beaches at the Seashore as of January 2008 (OSA 2008). At this time, none of the shipwrecks within the boundaries of the Seashore are listed in the National Register of Historic Places (National Register). One shipwreck, the Laura A. Barnes on Bodie Island Beach, was considered eligible for the National Register until its recent destruction by beach erosion during Hurricane Isabel (Stover pers. comm. 2009).

Shipwrecks on the beach are the resources of most concern because many of these shipwreck sites are ephemeral; in other words, they are uncovered and covered by storms, winds, and tides. This makes it difficult for NPS to manage them. If visible, the location of the resource is marked and protected, but many times the sand will move again before this is possible. Once resources are covered, or partially covered, it is possible that they could be run over or hit by ORV users who are unable to see them under the sand. In addition to unintentional impacts on the Seashore's cultural resources, some resources have been knowingly disturbed and even destroyed. ORV access also allows visitors to reach a shipwreck and take portions of the shipwreck that would normally be too large or heavy to remove if on foot (Stover pers. comm. 2009). During inventories of the condition of known shipwreck locations over the past seven years, NPS has found that an average of 25 to 30 of the 63 known shipwrecks are constantly being damaged by natural and human forces (Stover pers. comm. 2008).

The impact from unintentional ORV damage or intentional vandalism may be measurable or perceptible, but it is localized within a relatively small area of the site. Therefore, impacts on shipwrecks are considered minor. In general, impacts do not affect the character-defining features of any listed or eligible National Register archeological site at the Seashore. Therefore, this topic was not carried forward for further analysis.

Cultural Landscapes: The NPS defines cultural landscapes as settings that humans have created in the natural world. They reveal fundamental ties between people and the land. They are special places: expressions of human manipulation and adaptation of the land. Although only one Cultural Landscape Report has been prepared for the Cape Hatteras Light Station (NPS 2003a), there are five cultural landscapes within the Seashore's official database: Bodie Island Light Station, Little Kinnakeet Life Saving Station, Cape Hatteras Light Station, Hatteras Weather Bureau Station, and Ocracoke Light Station (NPS 1997; Stover pers. comm. 2008). None of these cultural landscapes is in the areas of routine ORV use under any of the proposed action alternatives, and none should be impacted by the implementation of an ORV management plan. In addition, because the oceanside ORV use areas under all alternatives are close to one mile from the Cape Hatteras Light Station, there should be no cultural landscape viewshed impacts from the base or the top of the lighthouse resulting from ORV use (Stover pers. comm. 2008).

Historic Structures and Districts: According to Director's Order 28, structures are defined as material assemblies that extend the limits of human capability. In plain language, this means a constructed work, usually immovable by nature or design, consciously created to serve some human activity. Examples are buildings, monuments, dams, roads, railroad tracks, canals, millraces, bridges, tunnels, locomotives, nautical vessels, stockades, forts and associated earthworks, Indian mounds, ruins, fences, and outdoor sculpture. The Seashore contains 36 historic structures, 20 of which are in good condition (NPS 2007b). Structures at the Seashore range from cemeteries to entire complexes. For example, three historic U.S. Life Saving Service stations still stand at Chicamacomico, Little Kinnakeet, and Bodie Island. The Hatteras Weather Bureau Station and Ocracoke Light Station are listed in the National Register. The Bodie Island Light Station, Bodie Island Lifesaving/Coast Guard Station, and Cape Hatteras Light Station are listed in the National Register as historic districts. In general, ORV use does not occur in the areas surrounding standing structures, because structures are located off the beach in the dunes or on the soundside of the Seashore. There are two tower concrete pad foundations (not standing structures). One is at Cape Point and the other is near Frisco Bath House. Only the foundation at Cape Point is in an area of ORV use but it is often buried and only becomes visible when the sands shift. Neither of these foundations is in danger of impact from ORVs.

Ethnographic Resources: An ethnographic study for the Seashore was completed in late 2005 (Impact Assessment, Inc. 2005). The study looked at the eight villages in the Seashore that reflect the nearly 300-year history and culture of the Outer Banks to support the Seashore in interpretation of its cultural resources, stewardship of ethnographic resources, and community relations with the villages. Archival/documentary research and ethnographic fieldwork was completed as part of the study to further socio-cultural understanding of the villages adjoining the Seashore. The villages contain a mix of populations that have evolved from the original British settlers, European seafarers, farmers, and other more recent migrants to the Outer Banks. No discrete, continuous ethnic groups or traditionally associated peoples (NPS *Management Policies* 2006, chapter 5) are documented for the Seashore; therefore, no ethnographic resources (NPS *Management Policies* 2006) would be impacted by the implementation of an ORV management plan.

In 2008, the Cape Hatteras Preservation Alliance submitted a request to the North Carolina Department of Cultural Resources (NCDCR), State Historic Preservation Officer (SHPO) for Bodie Island Spit and adjoining beaches, Cape Point and adjoining beaches, Hatteras Inlet and adjoining beaches, and South

Point Ocracoke and adjoining beaches to be recognized as Traditional Cultural Properties (TCPs), eligible for inclusion in the National Register. The NCDCR/SHPO responded to this request in a letter dated June 2, 2009, stating that a significance ascribed to a property in only the last 50 years cannot be considered traditional, and that the application focused on the past 50 years. The NCDCR/SHPO also stated that in order to make the case that the sites qualify as TCPs worthy of preservation, documentation must be presented to substantiate the community's historically rooted beliefs, customs, and practices as they relate to recreational fishing and identify the "living community of people" who have established a pattern of land use reflected in the cultural traditions valued by its long-term residents. Further, documentation must show that the four sites are the specific places that played a significant role in the community's historically rooted beliefs, customs, and practices and that those beliefs, customs, and practices are integral to the community's cultural identity. The letter pointed out that most of the application's text appeared to focus on the past 50 years when recreational fishing at the sites has almost completely supplanted commercial fishing, a long-established practice (although not necessarily a traditional cultural practice as interpreted by the NPS) and the application provided no historical documentation to establish that recreational fishing practices of the past 50 years have a direct relationship and continuity with the traditional beliefs, customs, or practices associated with historical commercial fishing patterns on the Outer Banks. The NCDCR/SHPO concluded that, based on the limited information in the application, there appears to be little if any justification that the properties qualify as TCPs.

The NPS concurs with this analysis, and has not found or been presented either with sufficient evidence that Outer Banks communities have cultural practices and beliefs associated with specific beaches or with a sufficient demonstration of an association with cultural practices and beliefs that are integral to the continuing cultural identity of any community. On October 21, 2009, the NPS further replied to this request stating that there is not sufficient evidence as to whether there are Outer Banks communities that have cultural practices and beliefs associated with specific beaches or sufficient information demonstrating an association between any community's cultural practices and beliefs that are integral to the continuing cultural identify of that community. Following an additional review, NPS determined the areas ineligible and provided its determination to the NCDCR/SHPO, and the NCDCR/SHPO offered no opinion. Because no TCPs were found to exist at the Seashore, this topic was not carried forward for analysis.

Museum Collections: Museum objects are manifestations and records of behavior and ideas that span the breadth of human experience and depth of natural history. The Seashore has collections of artifacts on display at the Cape Hatteras Lighthouse and at each visitor center. The official Seashore archives and artifact collections are housed at Fort Raleigh National Historic Site at Manteo. These various collections are not located on the ocean or soundside beaches and would not be impacted by implementation of an ORV management plan. Therefore this topic was not carried forward for further analysis.

Indian Trust Resources. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights. No Indian trust resources have been identified for Cape Hatteras National Seashore. Therefore, this impact topic is eliminated from further consideration.

Sacred Sites. Of the federally acknowledged tribes recognized pursuant to Public Law 103-454, 108 Statute 4791, the Tuscarora Nation is the only tribe affiliated with the Seashore. NPS is not aware of any historic properties that may be of religious and cultural significance to the Tuscarora Nation that would potentially be affected by the management alternatives described in the draft plan/EIS. The Seashore has consulted with the Tuscarora Nation about the ORV management draft plan/EIS, and the Tuscarora Nation has not informed the Seashore of sacred sites or other historic properties of religious or cultural significance to them which would be potentially affected. Therefore, the topic of sacred sites has been dismissed from further consideration.

Environmental Justice: On February 11, 1994, the President of the United States issued Executive Order 12898: Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. The executive order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. Environmental justice analyses are performed to identify the disproportionate effects of high and adverse environmental or health impacts from proposed federal actions on minority or low-income populations, and to identify alternatives that could mitigate these impacts.

Data from the U.S. Department of Commerce 2000 Census of Population and Housing (U.S. Census Bureau 2008) identify minority populations as Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and other Pacific Islander; of some other race; of two or more races; and Hispanic or Latino. Poverty status, used in this plan/EIS to define low-income status, is reported as the number of persons with income below poverty level. The 2000 Census defines the poverty level as an annual income of \$8,794, or less, for an individual and an annual income of \$17,603, or less, for a family of four.

Dare and Hyde counties in North Carolina had a population of 35,793 in the year 2000, of whom 4,185 people (12%) were minorities and 3,271 (9%) were living below poverty level. People of Hispanic or Latino origin composed 787 (2%) of the total population; 2,854 (8%) were Black or African American; 107 (0.3%) were American Indian or Alaskan Native; 143 (0.4%) were Asian; 0 were Native Hawaiian or other Pacific Islander; 317 (0.8%) were of some other race; and 347 (0.9%) were of two or more races. It should be noted that persons of Hispanic or Latino origin may be of any race. The only village at the Seashore that is a Census Designated Place is Ocracoke Village. Ocracoke had a population of 769 in the year 2000, of whom 30 (3.9%) were minorities and 68 (9.3%) were living below poverty level.

The census block group containing the villages of Rodanthe, Waves, Salvo, and Avon had a population of 1,600 in the year 2000, of whom 55 people (3%) were minorities and approximately 11% were living below the poverty level. The census block group containing Hatteras Village had a population of 709 in the year 2000, of whom four people were minorities and approximately 3% were living below the poverty level. The census block group containing the villages of Buxton and Frisco had a population of 1,692 in the year 2000, of whom 24 were minorities and approximately 5% were living below the poverty level.

The data for the counties and the areas containing the villages indicate poverty rates that are lower than the national and state average of 12% in the year 2000. None of the minority populations in the area of the Seashore were above the state or national averages for those populations (U.S. Census Bureau 2008). Therefore, based on the definitions provided in the executive order for minority or low-income populations, there are no such populations that would be disproportionately impacted by the implementation of this plan/EIS.

Energy Resources: This topic involves assessing energy requirements and the potential for energy conservation associated with the various alternatives, but is most relevant to facility construction projects. The majority of ORV use at the Seashore involves gaining access to fishing areas, where vehicles are then turned off once the desired fishing spot is reached. Because vehicular access to the beach would be maintained under this plan/EIS at current or reduced levels, there would only be negligible impacts on energy resources, as public fuel consumption would not change to a large degree as a result of the implementation of this plan. However, due to differences in management intensity among the alternatives, there would be differences in energy (fuel) consumption from implementation of the ORV management plan. The Seashore would continue to operate under the wise energy use guidelines and requirements stated in the NPS 2006 Management Policies, Executive Order 13123 (Greening the Government Through Effective Energy Management), Executive Order 13031 (Federal Alternative Fueled Vehicle

Leadership), Executive Order 13149 (Greening the Government Through Federal Fleet and Transportation Efficiency), and the 1993 NPS Guiding Principles of Sustainable Design.

Green House Gas Emissions and Climate Change: There is strong evidence linking global climate change to human activities, especially greenhouse gas emissions associated with the burning of fossil fuels (IPCC 2007). Some of the activities associated with ORV management and use would result in fossil fuel consumption, for example, vehicular trips by Seashore personnel conducting monitoring and management activities such as erecting, moving, or removing species closures; marking ORV corridors; and law enforcement patrol and response in ORV areas would consume fossil fuels. Equipment used to construct and maintain ramps, interdunal roads, and parking areas would also consume fossil fuels. Additionally visitors driving ORVs on the Seashore beaches would result in fossil fuel consumption and release of greenhouse gas emissions. However, greenhouse gas emissions associated with the plan would be negligible in comparison to local, regional, and national greenhouse gas emissions. Therefore, the issue of the contribution of ORV management and use activities to climate change through greenhouse gas emissions was dismissed from further analysis.

Urban Quality, Gateway Communities: A gateway community is defined by the NPS *Management Policies 2006* as a community that exists in close proximity to a unit of the national park system whose residents and elected officials are often affected by the decisions made in the course of managing the park. Because of this, there are shared interests and concerns regarding decisions. Gateway communities usually offer food, lodging, and other services to park visitors. They also provide opportunities for employee housing and a convenient location to purchase goods and services essential to park administration. The communities within and adjacent to the Seashore would fall under this definition, and the issues and interests that would be impacted by this plan are addressed under the Socioeconomics impact topic.

Paleontological Resources: No paleontological resources are located within the Seashore that would be impacted by ORV use; therefore, paleontological resources would not be impacted by implementation of an ORV management plan.

Health and Safety: Large numbers of vehicles and pedestrians use many of the same Seashore beaches at the same time, increasing the potential for visitor use conflicts and safety issues. Health and safety issues related to ORV use are discussed under the Visitor Use topic.

Topography and Soils: Issues related to topography and soils include impacts to the sand and beach environment, which are discussed above under geologic resources. Since no other impacts would occur to soils or topographic conditions, these were not included as separate impact topics.

FEDERAL LAWS, POLICIES, REGULATIONS AND PLANS DIRECTLY RELATED TO OFF-ROAD VEHICLE MANAGEMENT

Executive Order 11644: Use of Off-Road Vehicles on the Public Lands

On February 8, 1972, President Richard Nixon issued Executive Order 11644 to “establish policies and provide for procedures that will ensure the use of ORVs on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.”

The executive order directs agencies to develop and issue regulations and administrative instructions to designate the specific areas and trails on public lands on which ORV use may be permitted, and areas in which ORV use may not be permitted. The location of areas and trails shall:

- minimize damage to soil, watershed, vegetation, or other resources of the public lands;
- minimize harassment of wildlife or significant disruption of wildlife habitats;
- minimize conflicts between ORV use and other existing or proposed recreational uses of the same on neighboring public lands, and ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors; and
- not be located in officially designated wilderness areas or primitive areas and shall be located in areas of the national park system, natural areas, or national wildlife refuges and game ranges only if the respective agency head determines that ORV use in such locations will not adversely affect their natural, aesthetic, or scenic values.

Executive Order 11989: Off-Road Vehicles on Public Lands

This executive order, issued on May 24, 1977, by President Jimmy Carter, directs agencies to immediately close off-road areas or trails when it is determined that the use of ORVs is causing or will cause considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat or cultural or historic resources to the type of ORV causing such effects, until such time as determined that such adverse effects have been eliminated and measures have been implemented to prevent future recurrence. Also included in the executive order is the authority to adopt the policy that portions of the public lands under an agency's jurisdiction shall be closed to use by ORVs except those areas or trails that are suitable and specifically designated as open to such use.

Code of Federal Regulations, Title 36, Section 4.10: Travel on Park Roads and Designated Routes

This CFR section states, "operating a motor vehicle is prohibited except on park roads, in parking areas and on routes and areas designated for off-road motor vehicle use." Additionally, routes and areas designated for ORV use shall be promulgated as special regulations, with designations complying with Executive Order 11644 and 36 CFR 4.10. Routes and areas may be designated only in national recreation areas, national seashores, national lakeshores, and national preserves. As a result of the plan/EIS and special regulation, the Seashore will be in compliance with this regulation.

OTHER APPLICABLE FEDERAL LAWS, POLICIES, REGULATIONS AND PLANS

This plan/EIS must conform to the following federal laws, policies, regulations, and plans described in this section. Although some of the following documents may not be directly related to ORV management, they are relevant to issues at the Seashore that may be indirectly influenced by or associated with ORV use.

Code of Federal Regulations, Title 36

Title 36, chapter 1, provides the regulations "for the proper use, management, government, and protection of persons, property, and natural and cultural resources within areas under the jurisdiction of the National Park Service." These regulations are utilized to fulfill the statutory purposes of the units of the national park system: to conserve scenery, natural and historical objects, and wildlife, and to provide for the

enjoyment of those resources in a manner that will leave them unimpaired for the enjoyment of future generations. Part 2 of these regulations establishes resource protection, public use, and recreation regulations applicable to public use of units of the national park system. Part 4 of these regulations establishes vehicle and traffic safety regulations applicable to areas within a park that are open to public traffic, which under this plan/EIS will include designated ORV routes.

Coastal Zone Management Act, 1966

The *Coastal Zone Management Act* (CZMA) (16 USC 1451 et seq.) seeks to preserve and protect coastal resources. Through the CZMA, states are encouraged to develop coastal zone management programs (CZMPs) to allow economic growth that is compatible with the protection of natural resources, the reduction of coastal hazards, the improvement of water quality, and sensible coastal development. The CZMA provides financial and technical incentives for coastal states to manage their coastal zones in a manner consistent with CZMA standards and goals. CZMA Section 307 states, “Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs.”

The Coastal Zone Management Act (CZMA) seeks to preserve and protect coastal resources.

The CAMA (G.S. 113A) established the state’s cooperative program of coastal area management, including unified policies, criteria, standards, methods, and processes for dealing with land and water use decisions of more than local significance. This Act established the Coastal Resources Advisory Council and North Carolina Coastal Resources Commission, under the state’s Department of Environment and Natural Resources (NCDENR). The NCDENR Division of Coastal Management uses the rules and policies of the North Carolina Coastal Resources Commission to protect, conserve, and manage North Carolina’s coastal resources through an integrated program of planning, permitting, education, and research. These activities are carried out through the state’s responsibilities under the CAMA, the North Carolina Dredge and Fill Law (G.S. 113-229), and the federal CZMA in the 20 coastal counties. The CAMA program was federally approved in 1978 and is the state’s CZMP under the CZMA. Localities are responsible for planning while the state establishes areas of environmental concern. A project must obtain a CAMA permit if it:

- is in one of the 20 counties covered by the Act (including Dare and Hyde counties),
- is considered “development” under the Act,
- is in or affects an area of environmental concern (AEC), and
- does not qualify for an exemption.

As a part of this program, the Coastal Resources Commission designated “areas of environmental concern” in the 20 coastal counties and set rules for managing development in these areas. An AEC is an area of natural importance that may be easily destroyed by erosion or flooding or that may have environmental, social, economic, or aesthetic values that make it valuable to North Carolina. At least 90 days prior to taking action, NPS would provide a consistency determination stating how the plan/EIS is, to the maximum extent practicable, consistent with the enforceable policies of the CAMA.

Endangered Species Act of 1973, as Amended

The 1973 ESA provides for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend. Section 7 of this Act requires all federal agencies to consult

with the Secretary of the Interior on all projects and proposals with the potential to impact federally endangered or threatened plants and animals. It also requires federal agencies to use their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of endangered and threatened species. Federal agencies are also responsible for ensuring that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat. Section 9 of the Act makes it unlawful for a person to “take” a listed animal without a permit. The term “take” is defined in the Act as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” Through regulations, the term “harm” is defined as “an act which actually kills or injures wildlife. Such an Act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.” Listed plants are not protected from take, although it is illegal to collect or maliciously harm them on federal land. The Act also imposes civil and criminal penalties for violations of any provisions of the Act.

Critical Habitat Designation for Piping Plovers

Under the authority of Section 4 of the ESA, the USFWS must, to the maximum extent prudent and determinable, designate critical habitat for protected species. “Critical habitat” refers to (1) specific geographic areas occupied by the species at the time it is listed as threatened or endangered that contain features essential for the conservation of a threatened or endangered species and that may require special management or protection; and (2) areas outside the areas occupied by the species at the time it is listed that are nonetheless determined to be essential to the conservation of the species. On October 21, 2008 (73 FR 62816), the USFWS published a revised designation for the following areas as critical habitat for the wintering population of the piping plover in the Seashore: (1) Unit NC-1, Oregon Inlet; (2) Unit NC-2, Cape Hatteras Point; (3) Unit NC-4, Hatteras Inlet; and (4) Unit NC-5, Ocracoke Island. Unit NC-1 is approximately 5 miles long, and consists of about 485 acres of sandy beach and inlet spit habitat on Bodie Island and Pea Island. Unit NC-2 comprises 646 acres and extends south approximately 2.8 miles from the ocean groin near the old location of the Cape Hatteras Lighthouse to the point of Cape Hatteras, and then extends west 4.7 miles along South Beach to the edge of ramp 49 near the Frisco campground. Unit NC-4 is approximately 5 miles long and consists of 410 acres of sandy beach and inlet spit habitat on the western end of Hatteras Island and the eastern end of Ocracoke Island. Unit NC-5 consists of 502 acres on the western portion of Ocracoke Island beginning at the beach access point at the edge of ramp 72 (South Point Road), extending west approximately 2.1 miles to Ocracoke Inlet, and then back east on the Pamlico Sound side. On February 6, 2009, Cape Hatteras Access Preservation Alliance and Dare and Hyde Counties, North Carolina filed a legal challenge to the revised designation. On August 18, 2010, a U.S. District Court granted the government’s motion for summary judgment and dismissed the case with prejudice, and the critical habitat designation for these four units remains in effect. Under Section 7(a)(2) of the ESA, if a federal action may affect a listed species or its critical habitat, the responsible federal agency must enter into consultation with the USFWS to ensure that the affected critical habitat would remain functional to serve its intended conservation role for the species.

Antideficiency Act

The *Antideficiency Act* is a series of statutes (originating from 16 Stat. 251 in 1870) that prohibit federal managers from making or authorizing expenditures in excess of the amount available to them from appropriations or other funds, unless authorized by law. Based on this, the plan/EIS created must be able to be implemented through expected funding sources.

Marine Mammal Protection Act, 1972

The *Marine Mammal Protection Act* (MMPA) prohibits, with certain exceptions, the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States. The MMPA defines “take” as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal.” It defines harassment as “any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild; or has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.” The MMPA recognizes that some marine mammal species or stocks may be in danger of extinction or depletion as a result of human activities, and that these species or stocks must not be permitted to be depleted. The MMPA, as amended in 1994, provides for certain exceptions to the take prohibitions, such as Alaska Native subsistence and permits and authorizations for scientific research; a program to authorize and control the taking of marine mammals incidental to commercial fishing operations; preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; and studies of pinniped-fishery interactions.

This Act is relevant to this plan/EIS in two ways. ORVs are often used to respond to stranded marine mammals, and can be essential for quick and humane response. These actions are coordinated by the National Oceanic and Atmospheric Administration (NOAA) and/or the Seashore with government vehicles, and are considered beneficial for the protection and management of marine mammals on the Seashore. ORVs also have the potential to impact resting or stranded marine mammals due to the fact that ORVs facilitate access to and increase visitor presence in relatively remote sections of the beach, which could bring people and vehicles into direct, short-term contact with resting or stranded marine mammals. This increases the potential for resting or stranded marine mammals to be disturbed or harassed. For example, harassment of resting seals has been documented numerous times on the Seashore, and ORVs would most likely continue to contribute to this as the area’s winter seal population continues to increase.

Migratory Bird Treaty Act of 1918 and Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds

Migratory birds are of great ecological and economic value to this country and to other countries. They contribute to biological diversity and bring tremendous enjoyment to millions of people who study, watch, feed, or hunt these birds throughout the United States and other countries. The United States has recognized the critical importance of this shared resource by ratifying international, bilateral conventions for the conservation of migratory birds. These migratory bird conventions impose substantive obligations on the United States for the conservation of migratory birds and their habitats, and through the MBTA, the United States has implemented these migratory bird conventions with respect to the United States. Executive Order 13186 directs executive departments and agencies to take certain actions to further implement the MBTA. The MBTA implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under this Act, it is prohibited, unless permitted by regulations, to “pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention...for the protection of migratory birds...or any part, nest, or egg of any such bird” (16 USC 703). Subject to limitations in the Act, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

National Environmental Policy Act, 1969, as Amended

NEPA is implemented through regulations of the Council on Environmental Quality (CEQ) (40 CFR 1500–1508). The NPS has in turn adopted procedures to comply with NEPA and the CEQ regulations, as found in Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision Making, and its accompanying handbook (NPS 2001a). Section 102 (2)(C) of NEPA requires that an EIS be prepared for proposed major federal actions that may significantly affect the quality of the human environment.

National Historic Preservation Act of 1966, as Amended

Section 106 of this Act requires federal agencies to consider the effects of their undertakings on properties listed or potentially eligible for listing on the National Register of Historic Places. All actions affecting the Seashore's historic, archaeological, and cultural resources must comply with this legislation. For this plan/EIS, compliance with Section 106 is being combined with NEPA compliance.

**Section 102(2) (C) of
the National
Environmental Policy
Act requires that an
EIS be prepared for
proposed major
federal actions that
may significantly
affect the quality of
the human
environment.**

National Parks Omnibus Management Act of 1998

Both the *National Parks Omnibus Management Act of 1998* (NPOMA) (16 USC 5901 et seq.) and NEPA are fundamental to NPS park management decisions. Both acts provide direction for articulating and connecting the ultimate resource management decision to the analysis of impacts, using appropriate technical and scientific information. Both also recognize that such data may not be readily available and provide options for resource impact analysis in this case.

NPS Organic Act, as Amended

By enacting the *Organic Act of 1916*, Congress directed the U.S. Department of the Interior and NPS to manage units of the national park system “to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations” (16 USC 1). The 1978 *Redwood Amendment* reiterates this mandate by stating that the NPS must conduct its actions in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress” (16 USC 1 a-1). Congress intended the language of the *Redwood Amendment* to reiterate the provisions of the *Organic Act*, not to create a substantively different management standard. The House Committee report described the *Redwood Amendment* as a “declaration by Congress” that the promotion and regulation of the national park system is to be consistent with the *Organic Act*. The Senate Committee report stated that under the *Redwood Amendment*, “The Secretary has an absolute duty, which is not to be compromised, to fulfill the mandate of the 1916 Act to take whatever actions and seek whatever relief as will safeguard the units of the national park system.” Although the *Organic Act* and the *Redwood Amendment* use different wording (“unimpaired” and “derogation”) to describe what the NPS must avoid, both acts define a single standard for the management of the national park system—not two different standards. For simplicity, NPS *Management Policies 2006* uses “impairment,” not both statutory phrases, to refer to that single standard.

Despite these mandates, the *Organic Act* and its amendments afford the NPS latitude when making resource decisions to allow appropriate visitor use while preserving resources. By these acts Congress “empowered [the NPS] with the authority to determine what uses of park resources are proper and what

proportion of the park's resources are available for each use" (*Bicycle Trails Council of Marin v. Babbitt*, 82 F.3d 1445, 1453 [9th Cir. 1996]).

Courts consistently interpret the *Organic Act* and its amendments to elevate resource conservation above visitor recreation. *Michigan United Conservation Clubs v. Lujan*, 949 F.2d 202, 206 (6th Cir. 1991) states: "Congress placed specific emphasis on conservation." The court in *National Rifle Association of America v. Potter*, says "in the *Organic Act* Congress speaks of but a single purpose, namely, conservation." The NPS *Management Policies 2006* also recognize that resource conservation takes precedence over visitor recreation. The policy dictates: "when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant" (NPS 2006c, sec. 1.4.3, 10). This policy has been further reiterated in a recent court ruling on the Yellowstone Winter Use Plan/EIS (*National Parks Conservation Association v. National Park Service – No. 07-2112*) that states,

The *Organic Act* charges the NPS with the duty to provide for the enjoyment: of the parks' resources and values in "such manner and by such means as will leave them unimpaired for the enjoyment of future generations" 16 U.S.C. Section 1. This is not blanket permission to have fun in the parks in any way the NPS sees fit. As Plaintiffs articulated at the hearing, the "enjoyment" referenced in the *Organic Act* is not enjoyment for its own sake, or even enjoyment of the parks generally, but rather the enjoyment of "the scenery and natural and historic objects and the wild life" in the parks in a manner that will allow future generations to enjoy them as well.

Because conservation remains predominant, the NPS seeks to avoid or to minimize adverse impacts on park resources and values. Yet, the NPS has discretion to allow negative impacts when necessary (NPS 2006c, sec. 1.4.3, 10). While some actions and activities cause impacts, the NPS cannot allow an adverse impact that constitutes resource impairment (NPS 2006c, sec. 1.4.3, 10). Specifically, NPS *Management Policies 2006*, section 1.4.3.1 states: "In the administration of authorized uses, park managers have the discretionary authority to allow and manage the use, provided that the use will not cause impairment or unacceptable impacts." The *Organic Act* prohibits actions that permanently impair park resources unless a law directly and specifically allows for the action (16 USC 1a-1). An action constitutes "an impairment" when its impacts "harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values" (NPS 2006c, sec. 1.4.5, 11). To determine impairment, the NPS must evaluate "the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts" (NPS 2006c, sec. 1.4.5, 11).

Park managers must also not allow uses that would cause unacceptable impacts (NPS 2006c, sec. 1.4.7, 12) These are impacts that fall short of impairment, but are still not acceptable within a particular park's environment. For the purposes of these policies, unacceptable impacts are impacts that, individually or cumulatively, would

- be inconsistent with a park's purposes or values, or
- impede the attainment of a park's desired future conditions for natural and cultural resources as identified through the park's planning process, or
- create an unsafe or unhealthful environment for visitors or employees, or
- diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values, or

- unreasonably interfere with
 - park programs or activities, or
 - an appropriate use, or
 - the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park, or
 - NPS concessioner or contractor operations or services.

Because park units vary based on their enabling legislation, natural resources, cultural resources, and missions, management activities appropriate for each unit, and for areas in each unit, vary as well. An action appropriate in one unit could impair or cause unacceptable impacts to resources in another unit. Since publication of the DEIS in March 2010, the NPS has issued Interim Guidance for Impairment Determinations in NPS NEPA documents (NPS 2010h). Consistent with the Interim Guidance, a draft plan/EIS written impairment determination only for the preferred alternative is included in appendix E of this final plan/EIS, and the impact analysis for the no-action alternative A in the final/plan EIS discusses the potential of alternative A to result in impairment to sea turtles, common tern, gull-billed tern, and black skimmer.

Executive Order 11990: Protection of Wetlands

This executive order directs federal agencies to avoid, to the extent possible, the long-term and short-term adverse impacts associated with the destruction or modification of wetlands, and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

Executive Order 11988: Floodplain Management

This executive order directs federal agencies to avoid, to the extent possible, the long-term and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.

NPS Management Policies 2006

NPS Management Policies 2006 address management of ORVs in section 8.2.3.1, Off-Road Vehicle Use. This section states (NPS 2006c):

Off-road motor vehicle use in national park units is governed by Executive Order 11644 (*Use of Off-Road Vehicles on the Public Lands*, as amended by Executive Order 11989), which defines off-road vehicles as “any motorized vehicle designed for or capable of cross-country travel on or immediately over, land, water, sand, snow, ice, marsh, swampland, or other natural terrain” (except any registered motorboat or any vehicle used for emergency purposes). Unless otherwise provided by statute, any time there is a proposal to allow a motor vehicle meeting this description to be used in a park, the provisions of the executive order must be applied.

In accordance with 36 CFR 4.10(b), routes and areas may be designated only in national recreation areas, national seashores, national lakeshores, and national preserves, and only by special regulation. In accordance with the executive order, they may be allowed only in locations where there will be no adverse impacts on the area’s natural, cultural, scenic, and esthetic values, and in consideration of other existing or proposed recreational uses.

The criteria for new uses, appropriate uses, and unacceptable impacts listed in sections 8.1 and 8.2 must also be applied to determine whether off-road vehicle use may be allowed. As required by the executive order and the *Organic Act*, superintendents must immediately close a designated off-road vehicle route whenever the use is causing, or will cause, unacceptable impacts on the soil, vegetation, wildlife, wildlife habitat, or cultural and historic resources.

NPS administrative off-road motor vehicle use will be limited to what is necessary to manage the public use of designated off-road vehicle routes and areas; to conduct emergency operations; and to accomplish essential maintenance, construction, and resource protection activities that cannot be accomplished reasonably by other means.

Management policies relating to resource protection also were considered in developing this plan/EIS. For example, NPS *Management Policies 2006* instructs park units to maintain, as parts of the natural ecosystems of parks, all plants and animals native to park ecosystems, in part by minimizing human impacts on native plants, animals, populations, communities, and ecosystems, and the processes that sustain them (NPS 2006c, sec. 4.4.1).

NPS *Management Policies 2006* directs park units to determine all management actions for the protection and perpetuation of federally, state, or locally listed species through the park management planning process, and to include consultation with lead federal and state agencies as appropriate. Section 4.4.2.3, Management of Threatened or Endangered Plants and Animals, specifically states:

The NPS will survey for, protect, and strive to recover all species native to national park system units that are listed under the *Endangered Species Act*. The NPS will fully meet its obligations under the *Organic Act* and the *Endangered Species Act* to both proactively conserve listed species and prevent detrimental effects on these species. To meet these obligations, the NPS will:

- Cooperate with both the USFWS and the National Marine Fisheries Service (NMFS) to ensure that NPS actions comply with both the written requirements and the spirit of the *Endangered Species Act*. This cooperation should include the full range of activities associated with the *Endangered Species Act*, including consultation, conferencing, informal discussions, and securing of all necessary scientific and/or recovery permits.
- Undertake active management programs to inventory, monitor, restore, and maintain listed species' habitats; control detrimental non-native species; control detrimental visitor access; and re-establish extirpated populations as necessary to maintain the species and the habitats upon which they depend.
- Manage designated critical habitat, essential habitat, and recovery areas to maintain and enhance their value for the recovery of threatened and endangered species.
- Cooperate with other agencies to ensure that the delineation of critical habitat, essential habitat, and/or recovery areas on park-managed lands provides needed conservation benefits to the total recovery efforts being conducted by all the participating agencies.
- Participate in the recovery planning process, including the provision of members on recovery teams and recovery implementation teams where appropriate.

- Cooperate with other agencies, states, and private entities to promote candidate conservation agreements aimed at precluding the need to list species.
- Conduct actions and allocate funding to address endangered, threatened, proposed, and candidate species.

Section 4.4.2.3 of the NPS *Management Policies 2006* also states, “NPS will inventory, monitor, and manage state and locally listed species in a manner similar to its treatment of federally listed species, to the greatest extent possible. In addition, the Service will inventory other native species that are of special management concern to parks (such as rare, declining, sensitive, or unique species and their habitats) and will manage them to maintain their natural distribution and abundance” (NPS 2006c, sec. 4.4.2.3).

Cape Hatteras National Seashore Enabling Legislation, 1937

This legislation was an act of Congress that provided for the authorization of the Cape Hatteras National Seashore. Section 3 of the Seashore’s enabling legislation (the Act) states, “the administration, protection, and development of the aforesaid national seashore shall be exercised under the direction of the Secretary of the Interior by the National Park Service, subject to the provisions of the Act of August 25, 1916 (39 Stat. 535),” which is more commonly known as the *Organic Act*. Section 3 continues by stating, “that the legal residents of villages...shall have a right to earn a livelihood by fishing within the boundaries to be designated by the Secretary of the Interior, subject to such rules and regulations as the said Secretary may deem necessary in order to protect the area for recreational use as provided for in this Act.” Section 4 of this legislation states, “Except for certain portions of the area, deemed to be especially adaptable for recreational uses, particularly swimming, boating, sailing, fishing, and other recreational activities of similar nature, which shall be developed for such uses as needed, the said areas shall be permanently reserved as a primitive wilderness and no development of the project or plan for the convenience of visitors shall be undertaken which would be incompatible with the preservation of the unique flora and fauna or the physiographic conditions now prevailing in this area.”

Code of Federal Regulations Title 36, Section 7.58, Commercial Fishing

Section 7.58 contains the regulations governing commercial fishing at the Seashore. This section includes details on the requirements for commercial fishing permits, sport fishing zones, beach sanitation, and conservation of aquatic life.

Code of Federal Regulations Title 36, Section 2.2, Wildlife Protection

Section 2.2 address the protection of wildlife at the Seashore and prohibits the following: the taking of wildlife, except by authorized hunting and trapping activities conducted in accordance with paragraph (b) of Section 2.2; the feeding, touching, teasing, frightening or intentional disturbing of wildlife nesting, breeding or other activities; and possessing unlawfully taken wildlife or portions thereof.

NPS Director’s Order 12: Conservation Planning, Environmental Impact Analysis, and Decision Making and Handbook

Director’s Order 12 and its accompanying handbook (NPS 2001a) lay the groundwork for how the NPS complies with NEPA. Director’s Order 12 and handbook set forth a planning process for incorporating scientific and technical information and establishing a solid administrative record for NPS projects.

Director’s Order 12 requires that impacts to park resources be analyzed in terms of their context, duration, and intensity. It is crucial for the public and decision makers to understand the implications of those

impacts in the short and long term, cumulatively, and within context, based on an understanding and interpretation by resource professionals and specialists.

NPS Director's Order 28: Cultural Resource Management

Director's Order 28 sets forth the guidelines for management of cultural resources, including cultural landscapes, archeological resources, historic and prehistoric structures, museum objects, and ethnographic resources. This order calls for the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship in accordance with the policies and principles contained in the NPS *Management Policies 2006*.

NPS Director's Order 77: Natural Resource Protection

Director's Order 77 addresses natural resource protection, with specific guidance provided in Reference Manual 77: Natural Resource Management. Natural Resource Management Reference Manual 77 offers comprehensive guidance to NPS employees responsible for managing, conserving, and protecting the natural resources found in National Park System units. The Reference Manual serves as the primary guidance on natural resource management in units of the National Park System. Reference Manual chapters that are particularly relevant to this plan/EIS include endangered, threatened, and rare species management; geologic resources management; native animal management; shoreline management; vegetation management; special use permitting; wetland protection (Director's Order 77-1); and floodplain management (Director's Order 77-2).

RELATIONSHIP TO OTHER CAPE HATTERAS NATIONAL SEASHORE PLANNING DOCUMENTS, POLICIES AND ACTIONS

The following plans, policies, and actions occurring at the Seashore were considered during the development of this plan/EIS.

Past Off-Road Vehicle Planning Efforts

As described under "Summary of Off-Road Vehicle Use and Management at Cape Hatteras National Seashore" earlier in this chapter, the Seashore has engaged in various ORV management activities since it was established. All of these past planning efforts were taken into consideration during the development of this plan/EIS.

General Management Plan

The 1984 General Management Plan / Development Concept Plan / Environmental Assessment for Cape Hatteras National Seashore was developed to guide the preservation, use, development, and operation of the Seashore for a 5- to 10-year period. The relationship of the General Management Plan to ORV use at the Seashore is described in greater detail under "Summary of Off-Road Vehicle Use and Management at Cape Hatteras National Seashore" earlier in this chapter.

Resource Management Plan

The 1997 resource management plan states that the use of ORVs at the Seashore is a matter of growing controversy, and impacts from these vehicles on natural resources and pedestrian visitors are informally monitored on a continual basis. The plan noted, but did not cite, a study examining the effects of human-related disturbances, including vehicles, on migrating shorebirds and waterbirds, and stated that more detailed studies would be required to establish effective ORV management.

Visitor Services Project Report

The visitor services project report, or the Outer Banks Group Parks Visitor Study Cape Hatteras National Seashore Visitors, resulted from a visitor study conducted at the Seashore July 12 through 18, 2002. The study found that the most popular activities for current and past visitors were sunbathing/swimming and visiting historic sites. The three most important reasons for visiting the Seashore were the lighthouses, swimming, and uncrowded / solitude / low population. Also, when asked about crowding, 27% of visitors said they felt “crowded” to “extremely crowded” while 43% of visitors felt “somewhat crowded.” Many visitor groups (49%) felt that crowding “detracted from their park experience” (NPS 2002a).

Long-Range Interpretation Plan

A long-range interpretation plan for the Seashore was completed in September 2007. The Long-Range Interpretation Plan recommends actions to be taken over the next five to seven years to improve the Seashore’s personal services program and interpretive media, and provides an achievable implementation strategy (NPS 2007d). Because the plan addresses exhibits, interpretive information, outreach, and education, it was considered in the development of this plan/EIS.

RELATIONSHIP TO OTHER FEDERAL PLANNING DOCUMENTS AND ACTIONS

In addition to the laws and policies above, other federal planning documents exist that directly or indirectly relate to ORV use at the Seashore, and were taken into consideration during the development of this plan/EIS.

Piping Plover Atlantic Coast Population Recovery Plan

ORV management activities described in this plan/EIS considered the 1996 USFWS Piping Plover Atlantic Coast Population Recovery Plan (USFWS 1996a). This population of piping plovers was listed as threatened in 1986 and has increased from approximately 800 pairs to almost 1,350 pairs in 1995. However, pressure on Atlantic Coast beach habitat from development and human disturbance is pervasive and unrelenting, and the species is sparsely distributed. Increased human activity in Atlantic Coast parks, which includes increased ORV use, is cited as one of the many reasons the piping plover was listed.

Recovery Plan for the Great Lakes Piping Plover

This plan/EIS considered the USFWS Recovery Plan for the Great Lakes Piping Plover. The Great Lakes population, members of which are believed to overwinter at the Seashore, was listed as endangered under provisions of the ESA on January 10, 1986. The Great Lakes population had declined from a historic size of several hundred breeding pairs to 17 at the time of listing. From 1986 through 2002, the population fluctuated between 12 and 51 breeding pairs, with breeding areas remaining largely confined to Michigan. The restricted breeding range of this population creates a gap in the distribution of piping plovers across North America, with the Great Lakes population isolated from the two other breeding populations (Atlantic and Northern Great Plains) (USFWS 2003).

Atlantic Green, Hawksbill, Leatherback, Kemp’s Ridley, and Loggerhead Turtle Recovery Plans

The USFWS and the NMFS recovery plans for the U.S. population of Atlantic green, hawksbill, leatherback, Kemp’s ridley, and loggerhead sea turtles were considered when developing this plan/EIS. Each of these species is federally listed and the Seashore considered the individual recovery plans (NMFS and USFWS 1991, 1992a, 1992b, 1993, 2008).

Marine Mammal Recovery Efforts by the National Marine Fisheries Service

This plan/EIS considered the Marine Mammal Recovery Efforts of the NMFS. The NMFS Office of Protected Resources is charged with implementing the MMPA and the ESA with respect to marine mammal species under the NOAA Fisheries jurisdiction which includes whales, dolphins, porpoises, seals, and sea lions. These efforts are relevant to this plan/EIS because ORVs are often used to respond to stranded marine mammals, and can be essential for quick and humane response. These actions are coordinated by NOAA and/or the Seashore with government vehicles, and are considered beneficial for the protection and management of marine mammals on the Seashore. ORVs also have the potential to impact resting or stranded marine mammals due to the fact that ORVs facilitate access to and increase visitor presence in relatively remote sections of the beach, which could bring people and vehicles into direct, short-term contact with resting or stranded marine mammals. This increases the potential for resting or stranded marine mammals to be disturbed or harassed. For example, harassment of resting seals has been documented numerous times on the Seashore, and ORVs will most likely continue to contribute to this as the area's winter seal population continues to increase.

Cape Lookout National Seashore Interim Protected Species Management Plan / Environmental Assessment and Off-Road Vehicle Management Plan / Environmental Impact Statement

Located south of Ocracoke Inlet, Cape Lookout National Seashore also developed an interim protected species management plan / environmental assessment. The Cape Lookout National Seashore Interim Protected Species Management Plan / Environmental Assessment will guide management practices for the protection of special status species occurring at Cape Lookout National Seashore until a long-term ORV management plan/EIS and regulation is developed. Prior to the implementation of the interim protected species management plan in 2007, Cape Lookout conducted a range of species management activities that were less protective, but still provided a level of protection to the Seashore's federally listed species, state-listed species, and species of special concern through species monitoring and management and protective buffers. Cape Lookout National Seashore is developing a long-term ORV management plan/EIS. The Cape Lookout National Seashore ORV Management Plan/EIS is being developed during the same timeframe as the Cape Hatteras National Seashore ORV management plan/EIS, and will cover similar issues.

RELATIONSHIP TO OTHER STATE AND LOCAL PLANNING DOCUMENTS, POLICIES, ACTIONS, LAWS, AND REGULATIONS

The following state and local documents, policies, actions, laws, and regulations are directly or indirectly related to ORV use, and were therefore considered during the development of this plan/EIS.

North Carolina Division of Marine Fisheries Regulations

Recreational fishing at the Seashore is guided by the North Carolina Division of Marine Fisheries regulations. The North Carolina Division of Marine Fisheries manages all marine and estuarine resources in the state. As part of this function, the division publishes an annual recreational fishing guide that sets minimum lengths and bag limits for various species. Beginning January 1, 2007, the State of North Carolina required recreational anglers to have a license for saltwater fishing.

North Carolina Wildlife Resources Commission Nongame and Endangered Wildlife Program

The Nongame and Endangered Wildlife Program, established in North Carolina in 1983, aims to prevent species from becoming endangered through maintaining viable, self-sustaining populations of all native wildlife, with an emphasis on species in decline. The NCWRC has a Comprehensive Wildlife Strategy to

protect state-listed species. This strategy includes securing funding for state fish and wildlife agencies to take preventative actions that help keep rare species from becoming endangered, and keep common species common (NCWRC 2005). Species listed through this program as state threatened, endangered, or of special concern were taken into consideration during the development of this plan/EIS. Endangered and threatened wildlife and wildlife species of special concern are protected under Article 25 of chapter 113 of the *North Carolina General Statutes*.

North Carolina Wildlife Resource Commission Handbook for Sea Turtle Volunteers in North Carolina

The NCWRC published the Handbook for Sea Turtle Volunteers in North Carolina (NCWRC 2006). The handbook provides guidance to volunteers in conducting biologically sound management projects to benefit sea turtles and to help ensure compliance with laws pertaining to rare and endangered species at all levels of government. An annual permit is issued to the Seashore by the NCWRC under the authority of the USFWS. This handbook was considered in the development of this plan/EIS because turtle management is guided by this document.

North Carolina Natural Heritage Program

Among other responsibilities, the North Carolina Natural Heritage Program (NCNHP) identifies the most important places for the conservation of rare species and high quality natural communities in the state. As of January 2008, the NCNHP had identified more than 2,400 of these places, officially referred to as Significant Natural Heritage Areas (SNHAs). If a natural area cannot be purchased by NCNHP, its ecological significance can be recognized through a registry agreement, which is a voluntary agreement with the landowner that provides limited protection but recognizes the owner's commitment to conservation of the area. There are 10 SNHAs located within the boundaries of the Seashore. The NPS signed two agreements with NCNHP for the formal protection of nine of these areas. The Buxton Woods SNHA was registered in 1979 and eight other SNHAs were registered in the 1987 agreement. The purpose of the agreements was to "express the sincere intentions of the National Park Service to refrain from making or permitting changes that negatively affect the natural values for which this area was registered within the boundaries outlined." It specifically stated, "Vehicular traffic on beach locations will be regulated to prevent damage to nesting colonies of water birds." The registered SNHAs potentially relevant to this plan/EIS are Turtle Pond and Cape Hatteras Lighthouse Pond, Cape Hatteras Point, Hatteras Sand Flats, Ocracoke Island - Eastern End, and Ocracoke Island - Western End Sand Flats. The unregistered Hatteras Island - Middle Section SNHAs is also in the Seashore. The significance of these SNHAs is primarily the habitat that they provide for shorebirds such as piping plover, American oystercatchers, and several species of colonial waterbirds, although several sensitive plant communities are also identified as part of these ecological communities. All of the action alternatives in this EIS provide increased levels of shorebird protection than what was occurring at the time the NPS and NCNHP signed the agreement to register and protect these natural areas. However, at this time, the exact on-the-ground location of any proposed improvements is not known, although general locations have been identified for each alternative in chapter 2 of this document. The NPS will consult with NCNHP when the Seashore begins the process to identify exact locations for constructing or relocating ramps, interdunal roads, or parking lots that are in an SNHA to ensure that the construction avoids impacts to any sensitive species.

North Carolina Department of Transportation

The North Carolina Department of Transportation (NCDOT) has various projects related to NC-12 and other Outer Banks access issues. The NCDOT is considering some long-term projects in response to the changing physical landscape of the area such as a bridge from Avon to Buxton, which is a possible area

for a future inlet. The Outer Banks Task Force has developed a long-term management plan for NC-12 that was considered during the development of this plan/EIS. NC-12 connects the communities located within Cape Hatteras National Seashore to the mainland of North Carolina. Island residents depend on the roadway for off-island community services, such as hospitals, emergency response, and waste collection. NC-12 is also the primary evacuation route for all permanent and temporary residents on the island when severe weather is approaching. Storms frequently cause the ocean to overwash NC-12 and deposit large quantities of sand over portions of the roadway. The storms sometimes damage NC-12, which interrupts access and services to the island and causes hardships for island residents. NC-12 must be continually repaired and maintained to prevent permanent loss of access on Hatteras Island. To address these issues a task force was formed comprising the NCDOT, NPS, U.S. Army Corps of Engineers (Corps), USFWS, NMFS, Federal Highway Administration (FHWA), Dare and Hyde counties, and the NCDENR. The mission of this task force is to develop a long-range protection and maintenance plan for the transportation system on the Outer Banks. As part of this task force, hot spots for erosion have been identified and include Northern Pea Island, Sandbag area, Rodanthe "S" curves, Buxton / Canadian Hole, Hatteras Village, and Ocracoke (OBTF 2009).

The NCDOT is proposing to build a new bridge to replace the existing Herbert C. Bonner Bridge, originally built in the 1960s, over Oregon Inlet before the end of the bridge's reasonable service life. The NCDOT and the FHWA released a supplemental draft EIS regarding this replacement, and a supplement to the EIS was released in 2007 (OBTF 2007; FHWA 2007). In September 2008, NCDOT announced its preferred alternative, known as the Parallel Bridge with Phased Approach / Rodanthe Bridge Alternative. This alternative includes constructing a new Oregon Inlet bridge (Phase I) west of the existing structure, and later elevating NC-12 onto a series of bridges during Phases II-IV. Replacement of the Oregon Inlet bridge is expected to be complete in 2014 (NCDOT 2008).

North Carolina Coastal Area Management Act

Details regarding the CAMA were presented earlier in this document under the CZMA description on page 40.

Dare and Hyde County Planning Documents

The development and implementation of this plan/EIS considered the planning efforts of Dare and Hyde counties, primarily with respect to the cumulative impacts analysis and consistency determination. Since 1974, when the North Carolina General Assembly ratified the CAMA, each of the local governments in the twenty-county coastal region have been developing and updating land use plans. These land use plans have directed development in these areas and are responsible for the pattern of development we see today in Dare and Hyde counties. Both of these plans recognize the development that has occurred and the corresponding need for an increase in services as a result. These past patterns of land use development have influenced the amount of land available for habitat throughout the county, including portions of the counties located within the Seashore.

In Dare County, the County Planning Board serves as an advisory board to the Dare County Board of Commissioners. In compliance with the CAMA, Dare County prepared guidance and policies for land use development, known as the Land Use Plan (Dare County 2003), which provides local elected officials with a set of guidelines for development patterns and other land use issues that are important to the community. The Land Use Plan includes policies on various topics and implementation activities such as policies on water quality, residential and commercial development patterns, beach access, oceanfront and estuarine development, stormwater management, wastewater, and transportation. The latest version of the Dare County Land Use Plan was certified by the North Carolina Coastal Resources Commission in July 2003, and must be updated every five years. The 2008 plan update was submitted to the state for review

in mid-January 2009 and as of February 1, 2010, was still under review (Owens pers. comm. 2010). The Land Use Plan applies to the unincorporated portions of Dare County, while each of the municipalities in Dare County adopts its own plans for its respective planning jurisdiction. The Dare County Land Use Plan works in conjunction with the zoning ordinance, as well as the CAMA. Except for the mainland villages and Wanchese, the remainder of unincorporated Dare County is zoned. Detailed zoning maps have been adopted for the villages of Duck, Collington, Roanoke Island, Avon, Buxton, and Hatteras. The villages of Rodanthe, Waves, Salvo, and Frisco are zoned S-1, which is a minimal zoning district that allows all uses but does establish some building setbacks and height limitations. In addition, the county adopted a Special Environmental District (SED-1) for the Buxton Woods maritime forest. This zoning district establishes special standards for land clearing and vegetation removal that are intended to protect the vegetative canopy of the Buxton Woods forest (Dare County 2003).

The Hyde County Land Use Plan, written in 1986, was updated in 1992, 1997, and 2006. Hyde County Land Use Plan, in compliance with the CAMA, analyzes land development in the area to plan for future uses. The plan sets forth the following vision for the Island of Ocracoke (Hyde County 2006).

The vision of Ocracoke Island in the 21st century is a community that ensures livability and economic viability by offering the discerning vacationer a preferable alternative to the over commercialized beach destinations while providing improved attention to Ocracoke residents. The mission of county government should be to facilitate and support:

- Efforts to maintain the historic village assets.
- Efforts to preserve traditional native occupations and crafts including hunting and commercial fishing.
- Efforts to enhance the Island shopping opportunities with small locally owned shops and businesses.
- Efforts to provide affordable housing.
- Cooperative efforts with the community, NPS, and DOT to maintain access to the Island and provide necessary amenities. Ocracoke and Mainland should emphasize access.
- Support village craftsmen.

Outer Banks Scenic Byway

In the early 1990s, the NCDOT declared the Outer Banks corridor a state scenic byway. In September 2003, NCDOT completed an Outer Banks Scenic Byway Corridor Management Plan in preparation for seeking National Scenic Byway status. The Corridor Management Plan, updated in 2008, explored the “six intrinsic qualities” of the byway – scenic, natural, cultural, historic, archaeological, and recreational. The corridor management plan recognized the Seashore as one of the important natural components of the byway. The 2008 plan included recommendations for stewardship of the natural and cultural resources at the Seashore. Based on these planning efforts, the Outer Banks road corridor was officially designated as a National Scenic Byway on October 16, 2009.

Off-Road Vehicle Regulations for Duck, Kill Devil Hills, Nags Head, Kitty Hawk, and Southern Shores

Each municipality on the Outer Banks has its own individual rules for ORV use. Generally all municipalities that allow beach driving share the following rules:

- ORV users are requested to observe a suggested speed limit of 15 miles per hour;
- ORVs users must enter and leave the beach only at designated ramps (never between ramps or on the dunes);
- ORVs should be driven only on the portion of beach that lies between the foot of the dunes and the ocean;
- ORV users are requested to proceed with caution and consideration of other beach visitors;
- ORVs must have a state road registration and valid license plate; and
- ORV operators must have a current driver's license.

In addition to these general guidelines, the surrounding municipalities have individual ORV regulations, as shown in table 6.

TABLE 6. ORV REGULATIONS FOR OUTER BANKS MUNICIPALITIES

| Regulation/Guideline | Duck | Kill Devil Hills | Nags Head | Kitty Hawk and Southern Shores ^a |
|--|------|------------------|-----------|---|
| Observe 15 miles-per-hour (mph) speed limit | X | X | X | |
| Use designated ramps to enter/exit the beach | X | X | X | |
| Drive only between foot of dunes and ocean | X | X | X | |
| Be cautious/considerate of other visitors | X | X | X | |
| Vehicle must be registered with valid license plate | X | X | X | |
| Operator must have current license | X | X | X | |
| No permit is required between October 1 and April 30 | X | X | | |
| Vehicle must have 4-wheel drive | | X | | |
| Night driving is permitted | | X | | |
| Government, law enforcement, emergency, rescue services exempt | X | X | X | X |
| Commercial fishermen exempt | | | | X |
| ORV must be permitted by regulations governing ORVs | | | X | |

^a No motorized vehicles are allowed on beaches at Kitty Hawk and Southern Shores except for commercial fishermen and government/emergency vehicles.

CHAPTER 2: ALTERNATIVES

NEPA requires federal agencies to explore a range of reasonable alternatives that address the purpose of and need for the action. The alternatives under consideration must include the “no-action” alternative as prescribed by 40 CFR 1502.14. Two no-action alternatives are included for analysis in this plan/EIS, because management changed partway through the planning process in May 2008, after the consent decree was signed (see chapter 1 of this document for more information). Action alternatives may originate from the proponent agency, local government officials, or members of the public at public meetings or during the early stages of project development. Alternatives may also be developed in response to comments from coordinating or cooperating agencies.

The alternatives analyzed in this document, in accordance with NEPA, are the result of internal scoping, public scoping meetings, and information developed during the negotiated rulemaking process. Public and agency comments on the draft plan/EIS were analyzed and considered. As a response to these comments, NPS has made changes to the alternatives, where appropriate, which are reflected in this final plan/EIS. A copy of the original draft plan/EIS showing all additions, deletions, and other changes that have been made in the preparation of this final /EIS, including changes to the alternatives, is available electronically at <http://parkplanning.gov/caha>.

The action alternatives meet the management objectives of the Seashore, while also meeting the overall purpose of and need for proposed action. Alternative elements that were considered but were not technically or economically feasible, did not meet the purpose of and need for the project, created unnecessary or excessive adverse impacts to resources, and/or conflicted with the overall management of the Seashore or its resources were dismissed from further analysis.

The NPS explored and evaluated six alternatives in this plan/EIS, as follows:

- **Alternative A: No Action—Continuation of Management under the Interim Protected Species Management Strategy.** Under this no-action alternative, management of ORV use and access at the Seashore would be a continuation of management based on the 2007 Cape Hatteras National Seashore Interim Protected Species Management Strategy/EA and the Superintendent’s Compendium 2007, as well as elements from the 1978 draft interim ORV management plan that were incorporated in Superintendent’s Order 7.
- **Alternative B: No Action—Continuation of Terms of Consent Decree Signed April 30, 2008, and amended June 4, 2009.** Under alternative B, management of ORV use would follow the terms described under alternative A, except as modified by the provisions of the consent decree, as amended. Modifications in the consent decree include changes to resource protection buffers and closures for various species at the Seashore and added restrictions related to night driving.
- **Alternative C: Seasonal Management.** Alternative C would provide visitors to the Seashore with a degree of predictability regarding areas available for ORV use, as well as vehicle-free areas, based largely on the seasonal resource and visitor use characteristics of various areas in the Seashore.
- **Alternative D: Increased Predictability and Simplified Management.** Under alternative D, visitors to the Seashore would have the maximum amount of predictability regarding areas available for ORV use and vehicle-free areas for pedestrian use. Restrictions would be applied to larger areas over longer periods of time to minimize changes in designated ORV and vehicle-free areas over the course of the year.

- **Alternative E: Variable Access and Maximum Management.** Alternative E would provide use areas for all types of visitors to the Seashore with a wide variety of access for both ORV and pedestrian users, but often with controls or restrictions in place to limit impacts on sensitive resources. Interdunal road and ramp access would be improved, and more pedestrian access would be provided through substantial additions to parking capacity at various key locations that lend themselves to walking on the beach.
- **Alternative F: The NPS Preferred Alternative.** The NPS considered a variety of concepts and measures that either originated during the negotiated rulemaking process from members of the negotiated rulemaking advisory committee (Committee) or were discussed during Committee, subcommittee, or work group sessions. Although the Committee as a whole did not reach a consensus on a recommended alternative, in creating this action alternative the NPS made management judgments as to which combination of concepts and measures would make an effective overall ORV management strategy. This alternative is designed to provide visitors to the Seashore with a wide variety of access opportunities for both ORV and pedestrian users. Alternative F would provide a reasonably balanced approach to designating ORV routes and vehicle-free areas, while providing for the protection of park resources. To support access to both vehicle-free areas and designated ORV routes, alternative F would involve the construction of new parking areas, pedestrian access trails, ORV ramps, and improvements and additions to the interdunal road system. Based in part on public and agency comments on the draft plan/EIS, this alternative has been modified within the range of alternatives described in the draft plan/EIS.

ELEMENTS COMMON TO ALL ALTERNATIVES

The following describes elements of the alternatives that are common to all alternatives, including the no-action alternatives.

Vehicle/Operator Requirements

- **Vehicle Requirements.** All vehicles operating in any area of the Seashore must comply with the following:
 - Meet all requirements to operate legally on state highways where the vehicle is registered, including any required vehicle equipment.
 - Have a valid vehicle registration, insurance, and license plate.
- **Operator Requirements.** Any person operating a vehicle in any area of the Seashore must comply with the following:
 - Observe any law applicable to vehicle use on a paved road in the state of North Carolina.
 - Hold a current driver's license (Superintendent's Compendium, Section 4.2(a)).
 - Use a seatbelt.
- **Operator and Passenger Requirements.** Any vehicle operator and/or passenger in a vehicle operating in any area of the Seashore must comply with the following:
 - Open containers of any type of alcoholic beverage are prohibited in vehicles.
 - ORV drivers and/or passengers are prohibited from sitting on the tailgate or roof or hanging outside of moving vehicles. Those in truck beds must be seated on the floor with the tailgate closed; children in truck beds must be accompanied by an adult.

- **Right-of-Way Requirements.** Right-of-way between vehicles is not defined by the Seashore, and the standard driving rules must be followed.

Ramp Configuration

- If Bonner Bridge construction closes ramp 4, a new ramp 3 would be constructed north of the Oregon Inlet campground and day-use parking would be provided.

Boat Access

- Launch sites, as designated under 36 CFR 3.8(a)(2), are identified in the Superintendent's Compendium. Launching or recovery of vessels is prohibited within resource closures.

National Park Service Regulations

Title 36: Parks, Forests, and Public Properties of the U.S. Code of Federal Regulations is applicable in all national parks, including Cape Hatteras National Seashore. These regulations include those in Title 36 applicable to the operation of ORVs in the Seashore and those applicable to individuals recreating at the Seashore. Of particular note are the provisions of 36 CFR 1.5 and 1.6, which state that the superintendent may impose public use limits, or close all or a portion of a park area to all public use or to a specific use or activity; designate areas for a specific use or activity; or impose conditions or restrictions on a use or activity, and may establish a permit, registration, or reservation system.

Enforcement

Violations could result in fines or mandatory court appearances as defined in the Collateral Schedule, Eastern District of North Carolina, National Park Service.

Areas of Vehicle Operation

During the shorebird and turtle breeding seasons, standard resource protection buffers would apply, which could restrict ORV access to certain areas of the Seashore. Refer to table 37-2 on page 295 of this document for a description of access closures that occurred during the 2007-2010 seasons.

Visitors accessing the Seashore by ORV must drive only on marked ORV routes, comply with posted restrictions, and adhere to the following:

- Driving or parking outside of marked and maintained ORV routes is prohibited.
- Operating a vehicle of any type within safety or resource closures is prohibited.
- Accessing the beach and designated ORV routes is allowed only via designated beach access ramps and soundside access roads.
- Reckless driving—for example, cutting circles or defacing the beach—is prohibited.
- Observing pedestrian right-of-way is required.

Commercial Fishing / Permitted Uses

- Commercial fishing permit holders with ORVs would be allowed to enter administrative and safety closures, but not resource closures or lifeguarded beaches. Two designated commercial

fishing access points exist on the soundside of Ocracoke Island, where only vehicular access for commercial fishing is allowed.

- Kite flying, kiteboards, and ball and Frisbee tossing are prohibited within or above all bird closures.

Protected Species Management

- In general, because of the dynamic nature of the Seashore beaches and inlets, protected species management could change by location and time; new sites (bars, islands) could require additional management, or management actions may become inapplicable for certain sites (e.g., habitat changes with vegetation growth, new overwash areas).
- Areas with symbolic fencing (string between posts) would be closed to recreational access.
- Data collection would continue to document breeding and nest locations.
- Essential vehicles could enter restricted areas subject to the guidelines in the Essential Vehicles section of the USFWS Piping Plover (*Charadrius melanotos*), Atlantic Coast Population, Revised Recovery Plan (USFWS 1996a). Due to the soft sand conditions of the Seashore, essential vehicles would be allowed to travel up to 10 mph.

Accessibility for Visitors with Disabilities

The Seashore would provide access to visitors with disabilities as follows:

- Beach access points and boardwalks would be provided at Coquina Beach, the Frisco Boathouse, the Ocracoke Pony Pen, and the Ocracoke day use area.
- Beach access would be provided through the issuance of special use permits for areas in front of the villages to allow ORVs to transport visitors with disabilities to the beach and then return the vehicle back to the street.
- Beach wheelchairs could be checked out at each District on a first-come, first-served basis.

Infrastructure

- The Seashore has four campgrounds at Oregon Inlet, Frisco, Cape Point, and Ocracoke. The campgrounds would be open seasonally. Dates the campgrounds open or close would be subject to change.
- Fishing piers are located near Frisco and at Avon and Rodanthe on Cape Hatteras Island, and a marina is located at Oregon Inlet on Bodie Island. These would continue to be available to the public.⁴

⁴ The Frisco pier was closed for public safety reasons due to deteriorating conditions, and then further damaged by Hurricane Earl in September 2010. The future of this pier is not known at this time.

Education and Outreach

Under all alternatives, the Seashore would continue to

- Post signage in the Seashore so information on beach closures and Seashore resources is readily available and presented in a clear manner to the public.
- Post signs regarding applicable ORV regulations at ORV access ramps, beach routes, and soundside areas.
- Notify the public of species management closures and beach access status through weekly resource and beach access reports, press releases, email updates, and postings at the Seashore visitor centers and other NPS visitor facilities and on the Seashore website.
- Provide education and outreach materials regarding protected species (including seabeach amaranth) and measures taken by the Seashore to protect nesting birds and sea turtles at Seashore visitor centers and other NPS visitor facilities, on ORV access ramp bulletin boards, in the Seashore newspaper, and on the Seashore website. These materials include regulations regarding trash disposal, wildlife feeding, fireworks, and pets, and the impacts of such activities on sensitive Seashore species.
- Provide education and outreach materials regarding visitor safety at Seashore's visitor centers and other NPS visitor facilities, on ORV access ramp bulletin boards, in the Seashore newspaper, and on the Seashore website.
- Provide education and outreach materials regarding ORV-driving requirements at Seashore visitor centers and other NPS visitor facilities, on ORV access ramp bulletin boards, in the Seashore newspaper, and on the Seashore website.
- Solicit input from interested parties regarding how to convey information about the species management program.
- Conduct educational programs during the bird and sea turtle hatching season, such as having public school students participate in post-hatching sea turtle nest examinations in order to learn about sea turtles.
- Publish annual protected species reports on the Seashore website regarding the previous breeding season.

NO-ACTION ALTERNATIVES

The no-action alternative is developed for two reasons. First, a no-action alternative may represent the agency's past and current actions or inaction on an issue continued into the future, which may represent a viable alternative for meeting the agency's purpose and need. Second, a no-action alternative may serve to set a baseline of existing impacts continued into the future against which to compare the impacts of action alternatives. For most agency decisions, one no-action alternative can serve both of these purposes. Here, however, the situation is more complex.

As stated in chapter 1, "in order to provide continued visitor access through the use of ORVs, NPS must promulgate a special regulation authorizing ORV use at the Seashore," and the purpose of this plan is to develop such a regulation. Without a special regulation, continued ORV use would conflict with NPS regulations (36 CFR 4.10). The consent decree recognizes this and sets a deadline of April 1, 2011, for the promulgation of a final special regulation. As the district court has recognized in another case, absent an ORV plan and regulation, as a legal matter ORV use is "prohibited." The NPS acknowledges that if it

does not promulgate a special regulation to authorize ORV use, then ORV use would, in fact, be prohibited at the Seashore.

“No ORV use” thus could represent a result of NPS past inaction continued into the future, and thus might satisfy the first purpose of a no-action alternative. It is not, however, a viable alternative for meeting the purpose and need for this action. It was considered but dismissed in the broader range of alternatives that were identified. See page 82 for a discussion of the reasons that, for this plan/EIS, “Prohibit the Use of Off-Road Vehicles” is not considered a reasonable alternative.

NPS also does not believe that a “no ORV use” alternative would fully serve the function of a no-action alternative, because it would not satisfy the second purpose. It would not serve as an environmental baseline of existing impacts continued into the future against which to compare the impacts of action alternatives. ORV use has occurred continuously before and since the Seashore was authorized and established. Given this history, a complete ORV prohibition cannot be considered as the “current management direction or level of management intensity” or as “continuing with the present course of action,” which is how CEQ describes this role of the “no-action” alternative under NEPA.

Because there is no history of prohibition at the Seashore, there is also no Seashore monitoring data for an analysis of its effects. Extrapolation from other sites that prohibit ORV use, and from experience with resource closures in limited locations and limited times at the Seashore, indicates that prohibition would likely benefit the Seashore’s wildlife more than the other alternatives, though benefits could be similar to those from alternative D. Prohibition would be easier for the Seashore to administer than the other alternatives, though it might increase the need for additional parking areas, with their attendant costs and effects. It would detract from the experience of those visitors who prefer ORVs for access, while enhancing the experience of other visitors who prefer beaches without the presence of vehicles. Prohibition would adversely affect the economies of the villages in the Seashore more than the other alternatives because ORV users would not have the opportunity to shift their visits to different areas of the Seashore or to different dates or times of day when driving would be allowed. These conclusions, however, are largely speculative and cannot substitute for a baseline of existing impacts.

Similarly, using the management measures enforced in 2004 (which were adopted from the 1978 draft plan) as a no-action alternative would fail to meet the agency’s purpose and need to regulate ORVs in a manner that is consistent with applicable law, and would not appropriately address resource protection (including protected, threatened, or endangered species), potential conflicts among the various Seashore users, and visitor safety. In addition, it would neither bring the Seashore into compliance with the criteria of Executive Orders 11644 and 11989 for designation of ORV routes nor meet the second purpose of a “no-action” alternative to serve as a baseline of existing impacts continued into the future against which to compare the impacts of action alternatives.

For this plan/EIS the range of alternatives includes two no-action alternatives. Alternative A represents continuing management as described in the Interim Strategy. This management strategy was challenged in court and subsequently modified by the consent decree that was signed on April 30, 2008. Alternative B represents continuing management as described in the consent decree. These two no-action alternatives are analyzed to capture the full range of management actions that occurred and are currently occurring during the planning process for this plan/EIS. Tables 7 and 8 at the end of this chapter compare the actions that would be taken under each alternative, and figure 2 includes the maps of all alternatives.

ALTERNATIVE A: NO ACTION—CONTINUATION OF MANAGEMENT UNDER THE INTERIM PROTECTED SPECIES MANAGEMENT STRATEGY

Under this no-action alternative, management of ORV use and access at the Seashore would be a continuation of management based on the selected alternative identified in the July 2007 Finding of No Significant Impact (FONSI) for the 2006 Interim Strategy and the 2007 Superintendent's Compendium, as well as elements from the 1978 draft interim ORV management plan that were incorporated in Superintendent's Order 7, as amended in 2006. These actions would include providing ORV access throughout the Seashore, except in areas of temporary resource, safety, or administrative closures. Under alternative A, all the ocean and inlet shoreline and existing soundside routes would be designated as a route or area and would be open 24 hours a day year-round, but subject to temporary resource closures, seasonal ORV closures in front of the villages, and temporary ORV safety closures. As described in the FONSI, the Interim Strategy provides for the use, if feasible and if alternative routes are not available, of short-term bypasses when resource closures for shorebirds block the ORV corridor at Cape Point and the spits, and when a turtle nest hatching could lead to the blocking of access to the spits, Cape Point, or South Beach. The FONSI describes the following criteria for bypasses:

- a. The bypass area will be routed around dunes and vegetation if possible. If necessary, ground leveling, consistent with the state coastal management program, may be considered if dune fields do not exceed 36 inches in height. Leveling will be done by hand (no machinery will be used).
- b. The bypass will take advantage of natural terrain (e.g., blowouts) to minimize ground altering disturbance to the natural areas and avoid impacts to wetlands.
- c. The bypass will be at a minimum wide enough to allow one ORV to safely pass, and a maximum of two lanes if “line of sight” vision is compromised.
- d. Natural area disturbance to accommodate avoidance of turtle or bird nesting will not exceed 6,000 square feet.
- e. Minimal vegetation impact will be allowed.
 - Federal or state-listed plants or plants falling under the category of special concern (e.g., seabeach amaranth, dune blue curls) will not be compromised.
 - Vegetation in altered areas will be expected to recover within the following growing season. If vegetation does not recover within one growing season, or by other natural process (such as overwash creating habitat), the Seashore will initiate restoration of vegetation.
 - Any vegetation removal will be performed with hand tools (no machinery will be used).

Areas will be restored if predicted recovery period exceeds one season. Bypass routes will not infringe upon or fragment an adjacent resource/safety closure. Bypass routes will not disturb or impact any cultural resource (i.e., shipwrecks).

Vehicles would be allowed on the beach overnight only if someone associated with the vehicle is actively fishing. The ORV corridor would be marked by posts placed approximately 150 feet landward from the average, normal high tide line, or if less than 150 feet of space is available, at the vegetation or the toe of the remnant dune line, except during breeding season in protected species areas. Existing ORV safety closures would be maintained and new closures established as needed to address safety conditions such as debris on the beach or narrow beaches. Narrow beaches would be reopened as the beach widens. The beach in front of Cape Hatteras Lighthouse and Buxton Woods Road would remain closed to ORV access

for administrative purposes. Suitable interior habitats for piping plovers at spits and at Cape Point would be closed year-round to all recreational users to provide for resting and foraging for all species.

This no-action alternative would not require vehicles to have permits and would not involve any carrying-capacity restrictions. The speed limit would be 25 mph (unless otherwise posted) on Seashore beaches for public and private vehicles, although the speed limit in front of villages from September 16 to May 14 would be 10 mph. There would be no increase in parking facilities associated with this alternative. Under this no-action alternative, all the ocean and inlet shoreline and existing soundside routes would, for purposes of the rulemaking process, be a designated route or area, subject to temporary closures. Alternative A is analyzed as a baseline for comparison with the other alternatives in the plan/EIS following the requirements in 40 CFR 1502.14(d). Details of the management actions under this alternative are described in tables 8 and 9.

ALTERNATIVE B: NO ACTION—CONTINUATION OF TERMS OF THE CONSENT DECREE SIGNED APRIL 30, 2008, AND AMENDED JUNE 4, 2009

A consent decree was signed on April 30, 2008, in U.S. District Court, whereby the parties involved in the lawsuit challenging NPS's management of beach driving under the Interim Strategy along Cape Hatteras National Seashore agreed to a settlement of the case. Terms of the consent decree required the NPS to complete an ORV Management Plan for the Seashore by December 31, 2010, complete and promulgate the final Special Regulation by April 11, 2011, and provide details of specific species-protection measures to take place until the plan was completed. Under alternative B, management of ORV use and access at the Seashore would be based on the management under alternative A, but modified by specific species-protection measures from the consent decree that are required until the ORV plan and final Special Regulation are completed. These management modifications included increasing the size of the buffers provided to various species at the Seashore, as well as adding restrictions related to night driving. On June 4, 2009, the following changes were made to the consent decree, as approved by the courts and agreed to by the parties involved in the lawsuit and settlement:

- Commercial fishermen would be granted access to beaches at 5:00 a.m. instead of 6:00 a.m., provided certain conditions from the modified consent decree are met.
- After September 15, all unhatched turtle nests would only require full beach closures from sunset until 6:00 a.m., instead of 24 hours a day.
- The NPS would not be required to expand a buffer for vandalism if the violator is apprehended. If the buffer has been expanded and then the violator is caught, the NPS can retract the expansion.

All other provisions in the consent decree remain the same. Under alternative B, beaches would be closed to all ORV use between the hours of 10:00 p.m. and 6:00 a.m. from May 1 to September 15, and open to ORV use from 10:00 p.m. to 6:00 a.m. with a permit from September 16 to November 15. This permit could be obtained online or at NPS offices or local tackle shops. From March 15 to November 30, an ORV-free zone at least 10 meters wide would be located in the ocean backshore wherever there is sufficient beach width to allow an ORV corridor at least 20 meters wide above the mean high tide line. Under alternative B, buffers for protected species would be larger than those identified in alternative A, and would include a required 1,000-meter buffer for unfledged piping plover chicks. In addition to ORV use, this 1,000-meter buffer would also apply to pets, as well as to kite flying, Frisbee throwing, and similar activities. Under this alternative, beach fires would be prohibited within 100 yards of turtle nest protection areas, as specified in the Superintendent's compendium. As in alternative A, suitable interior habitats for piping plovers at spits and at Cape Point would be closed year-round to all recreational users to provide for resting and foraging for all species. In case of a conflict between the Interim Strategy and

the measures described in the consent decree, the consent decree would prevail. Details of the management actions under this alternative are described in tables 8 and 9.

ACTION ALTERNATIVES

The action alternatives would establish areas that allow ORV use and vehicle-free areas where ORV use is prohibited. Although ORV areas are specifically identified, these areas do not prohibit other uses, in effect making both ORV and vehicle-free areas multi-use recreation areas.

ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

The action alternatives, alternatives C, D, E, and F, provide a range of reasonable alternatives. The following describes elements of the management actions common to all the action alternatives.

Ramp Configuration

- A new ramp would be constructed at mile 32.5.
- Ramp 2 would be relocated approximately 0.5 mile south of Coquina Beach.

Off Road Vehicle Access and Routes

The following would apply:

- Visitors accessing the Seashore by ORV must use only designated beach access ramps and soundside access routes to enter designated ORV routes and areas.
- ORV operators must drive only on designated and marked ORV routes and must comply with posted restrictions.

Seashore Management and Operations

- Based on experience with implementing ORV management since 2007, staffing at the Seashore would need to increase under any action alternative to address basic functions of implementing an ORV management program. Staff would be hired to accomplish the following functions: coordination/management of the ORV program, coordination of science and adaptive management and resource education, and assistance with public information.

Education and Outreach

The Seashore would

- Improve signage related to beach closures and Seashore resources so that it is more readily available and presented in a clear manner to the public.
- Work with local organizations and businesses, including real estate rental agencies and hotels/motels, to ensure wider distribution of ORV and resource protection educational information. This would include encouraging these businesses to provide information about removal of beach equipment from the beaches at night.
- Provide information about and encourage the use of turtle friendly lighting.

- Encourage the Visitors Bureau and local tackle shops to link their websites to the Seashore's website to ensure that different segments of the visiting public have up-to-date information on beach closures and, if an ORV permitting system is developed, ORV permitting information.
- Develop a user-friendly ORV educational program (e.g., video or DVD) that could be administered as part of the ORV permitting process.
- Implement more educational programs in local schools and expand the Junior Ranger program to include more web-based options to interest youth in Seashore resources and stewardship.

Vehicle Requirements

The following requirements would apply:

- Four-wheel drive would be recommended, although two-wheel-drive vehicles would be allowed.
- When driving on designated routes, operators would be required to lower tire pressure sufficiently to maintain adequate traction within the posted speed limit (20 pounds per square inch (psi) is recommended for most vehicles).
- Motorcycles would be prohibited on the ocean beachfront.
- There would be a limit on the number of axles allowed for vehicles and trailers.
- Only U.S. Department of Transportation listed and/or approved tires would be allowed.

Equipment Requirements

- Vehicles would be equipped with a jack, jack support, shovel, and low-pressure tire gauge.

Speed Limits

- The speed limit would be 15 mph, unless otherwise posted. Emergency vehicles would be exempt when responding to a call.

Parking Areas for Pedestrian Access

- Any new parking areas would be located near vehicle-free areas and away from eroding areas or potential inlet areas.
- New parking areas would implement environmentally appropriate design standards to minimize stormwater runoff.
- New or expanded parking areas for ocean-side locations are identified in table 7 and table 7-1.

Beach Fires

- Beach fires would be prohibited year-round during hours specified for each alternative in table 8. A permit would be required for all beach fires to ensure that users are informed of basic safety and resource protection measures. Where fires are permitted, they would be prohibited within 100 yards of turtle nest protection areas.

Nighttime Beach Use

- Camping, as defined in 36 CFR 1.4, would be prohibited on Seashore beaches.
- Unattended beach equipment (chairs, canopies, volleyball nets, watersport gear, etc.) would be prohibited on the Seashore at night. Turtle patrol and law enforcement would tag equipment found at night. Owners would have 24 hours to remove equipment before it is removed by NPS staff.

Temporary Emergency Beach Closures

- A temporary emergency beach closure may be implemented if any of the following conditions are observed:
 - ORV traffic backing up on the beach access ramps, either on- or off-beach bound, which threatens to impede traffic flow.
 - ORV traffic on the beach is parked in such a way that two-way traffic is impeded.
 - Multiple incidents of disorderly behavior are observed or reported.

Accessibility for Visitors with Disabilities

- Some existing boardwalks would be retrofitted with accessible ramps to the extent that funding allows so visitors with disabilities can have more opportunities to access or view the beach. When new parking areas are developed, additional handicap parking spaces would be included, as appropriate.

Construction Measures

- Prior to any construction under the action alternatives, wetland delineations would occur and wetland habitats would be avoided.

Species Management

- Management of protected shorebirds would be accomplished through the implementation of the species management measures described in tables 10 and 10-1 at the end of this chapter.
- Management activities during the breeding season would focus on beach-nesting bird species such as the piping plover, Wilson's plover, American oystercatcher, least tern, common tern, gull-billed tern, and black skimmer; however, there would be ongoing evaluation of the breeding shorebird species addressed by this plan as part of the periodic review process.
- Prenesting areas for piping plover, American oystercatcher, Wilson's plover, and colonial waterbirds would be established in areas of suitable habitat that have had concentrated and recurring use by multiple individuals and/or multiple species of protected shorebirds during the breeding season in two or more of the past five years. Alternatives C, D, and E would not allow for ORV use in CWB prenesting areas, while alternative F would allow for ORV use on the lower beach until nesting activity occurs. These areas would be managed to reduce or minimize human disturbance. These areas would be re-evaluated as part of the periodic review process as described in tables 10 and 10-1.
- Areas of suitable nonbreeding habitat would be managed to reduce human disturbance during the nonbreeding season. This may include portions of prenesting areas that provide suitable

nonbreeding habitat during periods of overlap between the breeding and migrating season; designated vehicle-free areas that are set aside to provide pedestrians with the opportunity for a natural beach experience; and resource closures at some points and spits, based on an annual nonbreeding habitat assessment conducted after the breeding season.

- Management and monitoring protocols are provided for turtles and seabeach amaranth. Details of all species management strategies can be found in tables 10 and 10-1 at the end of this chapter.
- Incorporation of the Piping Plover Recovery Plan, Appendix G: Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the ESA. Appendix G of the Piping Plover Recovery Plan was used as a basis for determining appropriate management measures under all of the action alternatives. This document provides guidance to beach managers and property owners seeking to avoid potential violations of Section 9 of the ESA (16 USC 1538) and its implementing regulations (50 CFR 17) that could occur as the result of recreational activities on beaches used by breeding piping plovers along the Atlantic Coast. These guidelines were developed by the Northeast Region, USFWS (or Service), with assistance from the U.S. Atlantic Coast Piping Plover Recovery Team. The guidelines are advisory, and failure to implement them does not, of itself, constitute a violation of the law. Rather, they represent the USFWS best professional advice to beach managers and landowners regarding the management options that will prevent direct mortality, harm, or harassment of piping plovers and their eggs due to recreational activities. Appendix G makes the following recommendations:

Management of Nonmotorized Recreational Use – On beaches where pedestrians, joggers, sunbathers, picnickers, fishermen, boaters, horseback riders, or other recreational users are present in numbers that could harm or disturb incubating plovers, their eggs, or chicks, areas of at least 50 meter-radius around nests above the high tide line should be delineated with warning signs and symbolic fencing. Only persons engaged in rare species monitoring, management, or research activities should enter posted areas. These areas should remain fenced as long as viable eggs or unfledged chicks are present. Fencing is intended to prevent accidental crushing of nests and repeated flushing of incubating adults, and to provide an area where chicks can rest and seek shelter when large numbers of people are on the beach.

Available data indicate that a 50 meter buffer distance around nests will be adequate to prevent harassment of the majority of incubating piping plovers. However, fencing around nests should be expanded in cases where the standard 50 meter-radius is inadequate to protect incubating adults or unfledged chicks from harm or disturbance. Data from various sites distributed across the plover's Atlantic Coast range indicates that larger buffers may be needed in some locations. This may include situations where plovers are especially intolerant of human presence, or where a 50 meter-radius area provides insufficient escape cover or alternative foraging opportunities for plover chicks. In cases where the nest is located less than 50 meters above the high tide line, fencing should be situated at the high tide line, and a qualified biologist should monitor responses of the birds to passersby, documenting his/her observations in clearly recorded field notes. Providing that birds are not exhibiting signs of disturbance, this smaller buffer may be maintained in such cases. On portions of beaches that receive heavy human use, areas where territorial plovers are observed should be symbolically fenced to prevent disruption of territorial displays and courtship. Since nests can be difficult to locate, especially during egg-laying, this will also prevent accidental crushing of undetected nests. If nests are discovered outside fenced areas, fencing should be extended to create a sufficient buffer to prevent disturbance to incubating adults, eggs, or unfledged chicks. Pets should be leashed and under control of their owners at all times from April 1 to August 31 on beaches where piping plovers are present or have traditionally nested. Pets should be prohibited on these beaches from April 1 through August 31 if, based on observations and experience, pet owners fail to keep pets leashed and under control. Kite flying should be prohibited within 200 meters of nesting or territorial adult or unfledged juvenile piping plovers

between April 1 and August 31. Fireworks should be prohibited on beaches where plovers nest from April 1 until all chicks are fledged.

Motor Vehicle Management – The Fish and Wildlife Service recommends the following minimum protection measures to prevent direct mortality or harassment of piping plovers, their eggs, and chicks on beaches where vehicles are permitted. Since restrictions to protect unfledged chicks often impede vehicle access along a barrier spit, a number of management options affecting the timing and size of vehicle closures are presented here. Some of these options are contingent on implementation of intensive plover monitoring and management plans by qualified biologists. It is recommended that landowners seek concurrence with such monitoring plans from either the Service or the State wildlife agency.

Protection of Nests – All suitable piping plover nesting habitat should be identified by a qualified biologist and delineated with posts and warning signs or symbolic fencing on or before April 1 each year. All vehicular access into or through posted nesting habitat should be prohibited. However, prior to hatching, vehicles may pass by such areas along designated vehicle corridors established along the outside edge of plover nesting habitat. Vehicles may also park outside delineated nesting habitat, if beach width and configuration and tidal conditions allow. Vehicle corridors or parking areas should be moved, constricted, or temporarily closed if territorial, courting, or nesting plovers are disturbed by passing or parked vehicles, or if disturbance is anticipated because of unusual tides or expected increases in vehicle use during weekends, holidays, or special events.

If data from several years of plover monitoring suggests that significantly more habitat is available than the local plover population can occupy, some suitable habitat may be left unposted if the following conditions are met:

1. The Service OR a State wildlife agency that is party to an agreement under Section 6 of the ESA provides written concurrence with a plan that:
 - A. Estimates the number of pairs likely to nest on the site based on the past monitoring and regional population trends.

AND

- B. Delineates the habitat that will be posted or fenced prior to April 1 to assure a high probability that territorial plovers will select protected areas in which to court and nest. Sites where nesting or courting plovers were observed during the last three seasons as well as other habitat deemed most likely to be pioneered by plovers should be included in the posted and/or fenced area.

AND

- C. Provides for monitoring of piping plovers on the beach by a qualified biologist(s). Generally, the frequency of monitoring should be not less than twice per week prior to May 1 and not less than three times per week thereafter. Monitoring should occur daily whenever moderate to large numbers of vehicles are on the beach. Monitors should document locations of territorial or courting plovers, nest locations, and observations of any reactions of incubating birds to pedestrian or vehicular disturbance.

AND

2. All unposted sites are posted immediately upon detection of territorial plovers.

Protection of Chicks – Sections of beaches where unfledged piping plover chicks are present should be temporarily closed to all vehicles not deemed essential. (See the provisions for essential vehicles below.) Areas where vehicles are prohibited should include all dune, beach, and intertidal habitat within the chicks' foraging range, to be determined by either of the following methods:

1. The vehicle-free area should extend 1,000 meters on each side of a line drawn through the nest site and perpendicular to the long axis of the beach. The resulting 2000 meter-wide

area of protected habitat for plover chicks should extend from the ocean-side low water line to the bay-side low water line or to the farthest extent of dune habitat if no bay-side intertidal habitat exists. However, vehicles may be allowed to pass through portions of the protected area that are considered inaccessible to plover chicks because of steep topography, dense vegetation, or other naturally-occurring obstacles.

OR

2. The Service OR a State wildlife agency that is party to an agreement under Section 6 of the ESA provides written concurrence with a plan that:
 - A. Provides for monitoring of all broods during the chick-rearing phase of the breeding season and specifies the frequency of monitoring.

AND

- B. Specifies the minimum size of vehicle-free areas to be established in the vicinity of unfledged broods based on the mobility of broods observed on the site in past years and on the frequency of monitoring. Unless substantial data from past years show that broods on a site stay very close to their nest locations, vehicle-free areas should extend at least 200 meters on each side of the nest site during the first week following hatching. The size and location of the protected area should be adjusted in response to the observed mobility of the brood, but in no case should it be reduced to less than 100 meters on each side of the brood. In some cases, highly mobile broods may require protected areas up to 1000 meters, even where they are intensively monitored. Protected areas should extend from the ocean-side low water line to the bay-side low water line or to the farthest extent of dune habitat if no bay-side intertidal habitat exists. However, vehicles may be allowed to pass through portions of the protected area that are considered inaccessible to plover chicks because of steep topography, dense vegetation, or other naturally-occurring obstacles. In a few cases, where several years of data documents that piping plovers on a particular site feed in only certain habitat types, the Service or the State wildlife management agency may provide written concurrence that vehicles pose no danger to plovers in other specified habitats on that site.

Timing of Vehicle Restrictions in Chick Habitat – Restrictions on use of vehicles in areas where unfledged plover chicks are present should begin on or before the date that hatching begins and continue until chicks have fledged. For purposes of vehicle management, plover chicks are considered fledged at 35 days of age or when observed in sustained flight for at least 15 meters, whichever occurs first. When piping plover nests are found before the last egg is laid, restrictions on vehicles should begin on the 26th day after the last egg is laid. This assumes an average incubation period of 27 days, and provides a 1 day margin of error. When plover nests are found after the last egg has been laid, making it impossible to predict hatch date, restrictions on vehicles should begin on a date determined by one of the following scenarios:

1. With intensive monitoring: If the nest is monitored at least twice per day, at dawn and dusk (before 0600 hrs and after 1900 hrs) by a qualified biologist, vehicle use may continue until hatching begins. Nests should be monitored at dawn and dusk to minimize the time that hatching may go undetected if it occurs after dark. Whenever possible, nests should be monitored from a distance with spotting scope or binoculars to minimize disturbance to incubating plovers.

OR

2. Without intensive monitoring: Restrictions should begin on May 15 (the earliest probable hatch date). If the nest is discovered after May 15, then restrictions should start immediately.

If hatching occurs earlier than expected, or chicks are discovered from an unreported nest, restrictions on vehicles should begin immediately. If ruts are present that are deep enough to restrict movements of plover chicks, then restrictions on vehicles should begin at least 5 days prior

to the anticipated hatching date of plover nests. If a plover nest is found with a complete clutch, precluding estimation of hatching date, and deep ruts have been created that could reasonably be expected to impede chick movements, then restrictions on vehicles should begin immediately.

Essential Vehicles – Because it is impossible to completely eliminate the possibility that a vehicle will accidentally crush unfledged plover chicks, use of vehicles in the vicinity of broods should be avoided whenever possible. However, the Service recognizes that life-threatening situations on the beach may require emergency vehicle response. Furthermore, some “essential vehicles” may be required to provide for safety of pedestrian recreationists, law enforcement, maintenance of public property, or access to private dwellings not otherwise accessible. On large beaches, maintaining the frequency of plover monitoring required to minimize the size and duration of vehicle closures may necessitate the use of vehicles by plover monitors. Essential vehicles should only travel on sections of beaches where unfledged plover chicks are present if such travel is absolutely necessary and no other reasonable travel routes are available. All steps should be taken to minimize number of trips by essential vehicles through chick habitat areas. Homeowners should consider other means of access, e.g., by foot, water, or shuttle services, during periods when chicks are present. The following procedures should be followed to minimize the probability that chicks will be crushed by essential (non-emergency) vehicles:

1. Essential vehicles should travel through chick habitat areas only during daylight hours, and should be guided by a qualified monitor who has first determined the location of all unfledged plover chicks.
2. Speed of vehicles should not exceed five miles per hour.
3. Use of open 4-wheel motorized ATVs or nonmotorized all-terrain bicycles is recommended whenever possible for monitoring and law enforcement because of the improved visibility afforded operators.
4. A log should be maintained by the beach manager of the date, time, vehicle number and operator, and purpose of each trip through areas where unfledged chicks are present. Personnel monitoring plovers should maintain and regularly update a log of the numbers and locations of unfledged plover chicks on each beach. Drivers of essential vehicles should review the log each day to determine the most recent number and location of unfledged chicks.

Essential vehicles should avoid driving on the wrack line, and travel should be infrequent enough to avoid creating deep ruts that could impede chick movements. If essential vehicles are creating ruts that could impede chick movements, use of essential vehicles should be further reduced and, if necessary, restricted to emergency vehicles only.

- **Incorporation of the 2008 Loggerhead Sea Turtle Recovery Plan.** The following elements from the Loggerhead Sea Turtle Recovery Plan were considered in development of the action alternatives:

2225. Prohibit recreational equipment on nesting beaches at night. Sea turtles prefer to nest on the mid to upper beach, protecting their nests from repeated and prolonged high tides. Recreational equipment (e.g., beach furniture, umbrellas, marine craft, tents) that are left on the beach at night can prevent nesting turtles from reaching the mid to upper beach. Therefore, at night, all recreational equipment should be completely removed from the beach by hand and stored behind the primary dune. Regulations should be developed and enforced to ensure these types of impediments to nesting are managed or eliminated.

Maintain at least the current length and quality of protected nesting beach. As of 2007, 1,581 km of nesting beach in the U.S. were identified as being within conservation lands in public (Federal, state, or local government) ownership and privately owned conservation lands (e.g., non-profit conservation foundations). Most of these lands are generally managed in a way that benefits sea turtle conservation. Public lands that have lighted development, armoring, or other profound threats to sea turtle nesting have not been included. In compiling the list of conservation lands, human visitation was not considered a profound threat to sea turtle nesting.

Therefore, public lands designated for human recreation have been included. At a minimum, the amount of nesting beach in such protected status should be maintained.

251. Develop, fully implement, and effectively enforce light management plans to address direct and indirect (e.g., sky glow, uplighting) artificial lighting on nesting beaches.

2511. Implement and enforce lighting ordinances on lands under local government jurisdiction. Where lighting ordinances have been adopted and adequately enforced, hatchling disorientation has been managed at acceptable levels. All coastal counties and communities with nesting beaches should adopt and fully enforce ordinances from March through October in Brevard through Broward counties, Florida, and from May through October elsewhere. The State of Florida's Model Lighting Ordinance [<http://myfwc.com/seaturtle>] should be used as a template for developing new or revising existing lighting ordinances. In addition, Port Authorities should develop and enforce lighting management plans to ensure their direct and indirect lighting does not impact nesting and hatchling turtles on nearby beaches.

61. Minimize impacts to sea turtles on nesting beaches.

6113. Use the least manipulative method to protect nests. Until such time as a management plan for protecting nests is developed, the least manipulative method should be employed to protect nests. Because the incubation environment greatly influences the developing embryo, nest relocation can involve the transfer of eggs from an appropriate environment to an inappropriate one. As a general rule, nests should only be relocated if they are low enough on the beach to be washed daily by tides or if they are situated in well documented highrisk areas that routinely experience serious erosion and egg loss (e.g., nests laid near river mouths or beneath eroding sea walls).

Natural events, like storms, that accelerate beach erosion and accretion can sometimes reduce hatching success in existing nests. While damage from storm events can be severe, it is difficult to predict the precise areas where the storm is most likely to inflict damage. Because of the negative effects of relocating eggs and the unpredictability of storm events, nests should not be moved out of areas threatened by storms. Nests should not be relocated in areas where heavy foot traffic, lighting problems, or beach cleaning are a concern. Foot traffic generally is not a problem for nests, but depending on the nesting substrate, pedestrian traffic over nests near the time of emergence can cause the nests to collapse and result in hatchling mortality. Therefore, in areas where foot traffic is heavy, nests can be marked so pedestrians can avoid them. If a nest is made near a light that may misorient the hatchlings, efforts should focus on getting the light turned off or shielded (if protection is necessary, the nest should be caged). If nests are deposited on beaches that are periodically raked with mechanical equipment, beach raking should be discontinued or the nests should be marked clearly so they can be avoided by the beach cleaners.

6114. Discontinue the use of hatcheries as a nest management technique. Relocation of sea turtle nests to hatcheries located higher on the beach was once a common practice throughout the southeast U.S. to mitigate the effects of naturally occurring events, such as erosion and vegetation encroachment, predation, and a variety of human-induced factors. In some areas, the extent and type of coastal development have resulted in significant light pollution problems. As a result, a few hatcheries are still used to protect hatchlings from disorientation. However, relocating nests into hatcheries concentrates eggs in an area and makes them more susceptible to catastrophic events and predation from both land and marine predators. Therefore, in areas where hatcheries are still being used to protect nests and hatchlings from light pollution, management efforts should be shifted to eliminate the lighting problems and phase out the use of hatcheries. At Cape Romain [National Wildlife Refuge (NWR)] in South Carolina, hatcheries are being used as a last resort in response to severe erosion. In this case, the conservation benefits (i.e., embryo survivorship) are believed to outweigh the potential conservation risks (e.g., hatchling predation). Given these circumstances, the use of hatcheries at Cape Romain

NWR is currently considered appropriate until sufficient habitat for successful incubation is available. Continued use of hatcheries on the refuge should be based on periodic quantitative assessments of their effectiveness as a management tool.

6121. Prohibit nighttime driving on beaches during the loggerhead nesting season. Vehicles on the beach have the greatest potential to come into contact with nesting females and emerging hatchlings at night. In areas where beach driving is still allowed, nighttime vehicle use should be limited to essential vehicles (e.g., emergency or permitted research vehicles) only. When essential vehicles are allowed on the beach at night during the sea turtle nesting season, their potential for harming turtles should be minimized by driving at speeds of 5 miles per hour or less (except when higher speeds are necessary for law enforcement, human safety, or medical emergencies), and by driving seaward of the wrack or debris line or just above it during high tide conditions. In addition, regardless of the time of year, vehicles or equipment driven or used on the beach should be equal to or less than 10 pounds per square inch (psi) based on ground loading characteristics (e.g., all terrain vehicles) to minimize the potential for sand compaction.

6123. Manage daytime driving to minimize impacts to loggerheads. In addition to prohibiting nighttime driving of non-essential vehicles on the beach, other measures should be implemented to minimize the potential for impacts to sea turtles. Examples of minimization measures include the designation and enforcement of no-driving zones in areas where the greatest concentration of nests are typically located (e.g., conservation zones near the dunes), monitoring and marking of all sea turtle nests for avoidance, and developing and implementing a vehicle rut removal program seaward of nests during periods when hatchlings are expected to emerge.

614. Minimize harassment of nesting females and hatchlings. Resident and visitor use of nesting beaches can adversely affect nesting sea turtles, incubating egg clutches, and hatchlings. Intentional and unintentional disturbance and harassment of nesting females and hatchlings is an increasing problem on many beaches. Problem areas where repeated incidents of turtle harassment have been reported should be identified, and law enforcement efforts should be focused there.

6142. Conduct public education campaigns to minimize harassment of nesting females and hatchlings. Resident and visitor use of nesting beaches can adversely affect nesting sea turtles and hatchlings. The most serious threat caused by human presence on the beach is the disturbance of nesting females. Disturbance of nesting females can cause them to leave the beach without finishing nesting and thus delay egg laying, shift their nesting beaches, and select poor nesting sites. Hatchlings rely on a store of energy and nutrients within their retained yolk sac to make their way from the nest to their offshore developmental habitat. Any delays they encounter on the beach by pedestrians may impair their ability to migrate offshore. Beachgoers should be informed through presentations and educational materials about the potential impacts to sea turtles from pedestrians on the beach and how to avoid frightening or disorientating any nesting and hatchling turtles encountered. In addition, signage at access points to the beach is recommended to further inform residents and visitors about proper nesting beach etiquette.

6143. Increase the number of interpretive turtle walks to meet demand and minimize overall disturbance to nesting females and hatchlings. In the U.S., numerous state-permitted organizations conduct organized turtle walks to allow the public to view the nesting process. Thousands of coastal visitors and local residents attend these organized turtle watches each year; however, thousands more are turned away due to the limited number of walks available. As a result, numerous unsupervised individuals who were unable to get into a turtle walk often try to find turtles by themselves and inadvertently end up harassing them. Interpretive turtle walks also are a mechanism for garnering

support for sea turtle conservation through education and should be expanded to accommodate the high public demand for participation.

6144. Enforce laws to minimize harassment of nesting females and hatchlings. Intentional and unintentional disturbance and harassment of nesting turtles and hatchlings is an increasing problem on many beaches. Problem areas should be identified and law enforcement efforts should be focused in these areas to deter harassment of nesting turtles and hatchlings.

615. Develop and enforce guidelines for special events on the beach to minimize impacts on nesting females, nests, and hatchlings. A wide variety of special events (e.g., volleyball tournaments, concerts) take place on the beach. Some of these events considerably increase the number of people and equipment in a given area. Many events are scheduled outside of the sea turtle nesting period, but some do occur during the nesting season. State resource agencies and local governments should develop and enforce guidelines for special events that will occur during the nesting season to ensure there will be no direct or indirect impacts on nesting turtles, nests, and emerging hatchlings.

- **Establishment of Buffer Distances.** The potential impacts of human disturbance on beach-nesting birds and their chicks are well documented and described in chapter 3 of this document. A buffer is an area surrounding a sensitive resource, such as bird nests or chicks, which is restricted (or closed) to visitor access during critical life cycle stages in order to reduce human disturbance and the risk of mortality due to pedestrians and ORVs. The sensitivity of beach-nesting birds to human disturbance varies by species and can vary among individual birds of the same species depending upon the circumstances. Buffer distances for managed species are detailed in table 11. The buffer distances identified in the action alternatives were developed after consideration of the best available science, which includes existing guidelines and recommendations, such as the Piping Plover Recovery Plan (USFWS 1996a) and the USGS Open-File Report 2009-1262 (2010) on the management of species of special concern at the Seashore, as well as relevant scientific literature (research, studies, reports, etc.) for the respective species. In addition, buffer distances were developed using the practical knowledge gained by NPS resources management staff during two years of implementing the Interim Strategy (2006–2007) and three years implementing the consent decree (2008–2010). In 2007 under the Interim Strategy, which identified the buffer distances that would be used under alternative A, NPS staff implemented a total of 126 shorebird management actions that involved establishing, modifying, or removing fencing around resource closures. In 2009 and 2010 under the consent decree, which identified the buffer distances that would be used under alternative B, NPS staff implemented a total of 202 and 164 shorebird management actions, respectively.

The buffer distances are intended to provide adequate protection to minimize the impacts of human disturbance on nesting birds and chicks in the majority of situations, given the level of visitation and recreational use in areas of sensitive wildlife habitat at the Seashore and issues related to non-compliance with posted resource protection areas. For example, under the action alternatives the buffer distance for nesting piping plovers is set at 75 meters, and would be expanded upon disturbance or when chicks are present. A 1992 study at Assateague Island National Seashore (Loegering 1992), a national seashore with a similar type of barrier island habitat and recreational use as Cape Hatteras, found that on average, incubating plovers flushed from their nests at a distance of 78 meters (256 feet), although some birds flushed when researchers were as far as 174 meters (571 feet) away. Researchers reported that the minimum agitation distance to nesting piping plover was 50 meters, and suggested a buffer radius of 225 meters. The recommended buffers for piping plover under this plan/EIS not only took into consideration the Piping Plover Recovery Plan, but also studies in similar environments such as Assateague Island. Buffers for the other bird species were developed in a similar manner, taking

into consideration the best available studies, combined with Seashore staff observations of how the species react in the specific environment of the Seashore. The action alternatives' buffers, when combined with the Species Management Areas (SMAs) under alternatives C, D, and E and the prenesting areas and vehicle-free areas for all action alternatives, are designed to be effective for species protection and operationally feasible to implement and sustain.

ORV Permits

- Permits would be required for vehicular use on designated ORV routes.
- There would be no limit on the number of permits issued.
- Permits would be available at designated permit issuing stations.
- Permit stickers would be affixed to vehicles in a manner approved by the NPS.
- Permits could be revoked for violation of applicable Seashore regulations or terms and conditions of the permit.

ADAPTIVE MANAGEMENT APPROACHES INCLUDED IN THE ACTION ALTERNATIVES

The Department of the Interior requires that its agencies “use adaptive management to fully comply” with CEQ guidance that requires “a monitoring and enforcement program to be adopted … where applicable, for any mitigation” (516 DM 1.3 D (7); 40 CFR 1505.2). Adaptive management is based on the assumption that current resources and scientific knowledge are limited. Nevertheless, adaptive management attempts to apply available resources and knowledge and adjusts management techniques as new information becomes available.

Adaptive management incorporates scientific experimental methods into the management process while providing flexibility to adjust to changes in the natural environment. It is based on a continuing, iterative process of

- Applying management actions.
- Monitoring consequences.
- Evaluating monitoring results against plan objectives.
- Adjusting management.
- Using feedback to make future management decisions.

All action alternatives incorporate adaptive management initiatives (outlined in table 10 and table 10-1) that are designed to assist the Seashore in meeting the objectives of this plan/EIS and desired future conditions as outlined in chapter 1 of this document. These species-specific initiatives include implementing additional research and monitoring for piping plover, sea turtles, and seabeach amaranth, based on available funding. Information obtained from the implementation of adaptive management initiatives would be integrated into future decision making.

PERIODIC REVIEW UNDER THE ACTION ALTERNATIVES

A systematic review of data, annual reports, and other information would be conducted by NPS every five years, after storms or events that Seashore management determines to be a major modification of habitat

quantity or quality, or if necessitated by a significant change in protected species status (e.g., listing or de-listing), in order to evaluate the effectiveness of management actions in making progress toward the accomplishment of stated objectives and desired future conditions (see chapter 1 of this document). Periodic review could result in changes to the management actions in order to improve effectiveness. When desired future conditions for resources are met or exceeded, periodic review and adaptive management may allow for more flexible management of recreational use, provided adverse impacts of such use are effectively managed and wildlife populations remain stable. Where progress is not being made toward goals, periodic review and adaptive management may result in increased restrictions on recreational use. Components subject to periodic review vary among the action alternatives.

DISCUSSION OF ACTION ALTERNATIVES

ALTERNATIVE C: SEASONAL MANAGEMENT

This alternative is designed to provide visitors to the Seashore with a degree of predictability regarding areas available for ORV use, as well as vehicle-free areas, based largely on the seasonal resource- and visitor-use characteristics of various areas in the Seashore. This alternative would manage ORV use by identifying areas that historically do not support sensitive resources or that historically have lower visitor use. Many of these areas would generally be designated as ORV routes year-round. Areas of high resource sensitivity and high visitor use would generally be designated as seasonal ORV routes, with restrictions based on seasonal resource and visitor use or as year-round vehicle-free areas. Some areas would be designated as vehicle free year-round to provide opportunities for non-ORV users to experience the Seashore without the presence of vehicles. The establishment of ORV routes and vehicle-free areas would be based largely on seasonal resource requirements and year-round visitation patterns and would provide the public and the Seashore with a structured management approach that clearly states what areas are available for ORV use and when they are open. The public would have clear direction as to what would be open seasonally or year-round; however, it would require some effort on the public's part to be informed and to understand what areas are open and when use is permitted. Implementation would require an increase in Seashore staff and resources for public education and enforcement, but would provide for efficient Seashore operations with the identification of defined use areas.

Generally, most areas where there is a seasonally designated ORV route would be open to ORVs from October 15 to March 14, primarily due to concerns about resource protection for birds and turtles during breeding and hatching/fledging periods and to minimize conflicts with high visitor use periods. Areas that would be seasonally designated vehicle free would include SMAs and some village beaches. These seasonal vehicle-free areas would primarily occur during periods of high visitation and high resource sensitivity—the summer and shoulder season months. The spits and points would be closed to ORVs from March 15 to October 14 to provide resource protection. A pedestrian access corridor would be provided at Bodie Island Spit, Cape Point, and South Point although the corridor could close during the breeding season as resource protection buffers and closures are established. Existing soundside ORV access areas would be retained and designated as ORV routes, including existing primitive parking and designated boat launch areas. The Seashore would maintain posts and signage defining the location of the parking areas and ORV access routes on the soundside.

ORV routes under this alternative would still be subject to temporary resource closures established when protected species breeding behavior warrants and/or if new habitat is created. In addition to the breeding season measures, resource closures and/or vehicle-free areas would be established, based on an annual nonbreeding habitat assessment conducted after the breeding season, to provide areas of nonbreeding shorebird habitat with reduced human disturbance while still allowing a pedestrian or pedestrian/ORV access corridor in areas designated by the NPS (common to all alternatives).

Designated ORV routes would be established seasonally in areas with high visitation and/or sensitive resources and year-round in some areas that historically do not support sensitive resources or that have lower visitor use. To facilitate ORV access to the designated routes, existing ramps would be improved, reconfigured, and/or supplemented by new ramps, including the construction of ramps 47, 48, 62, and 64. (Note: All action alternatives involve relocating ramp 2 and building a new ramp at 32.5.) In addition, the interdunal road network would be maintained at its current level of access in most places, although an extension from ramp 45 west to ramp 49 would be provided. Pullouts or road widening would be provided where appropriate to provide safe ORV passage on the interdunal roads. Designated ORV routes would be open to ORV use 24 hours a day from November 16 through April 30, although SMAs would be closed to ORV use beginning on March 15. From May 1 through November 15, all potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) would be closed to non-essential ORV use from 7:00 p.m. to 7:00 a.m. This alternative also involves the addition or expansion of parking areas at several locations.

ORV safety closures would be designated as conditions warrant and would be evaluated for reopening by NPS law enforcement staff on a weekly basis. ORV safety closures would be applicable only to ORV access; pedestrian and commercial fishing access would generally be maintained through ORV safety closures.

Alternative C would include a Seashore-wide carrying-capacity element (“peak use limit”), which would be based on a physical space requirement of an average of one vehicle per 20 linear feet for Bodie and Hatteras Island Districts and one vehicle per 30 linear feet for the Ocracoke Island District. The provision of a lower carrying-capacity on Ocracoke Island would provide for a less crowded visitor experience in this area, enhancing the types of experiences available throughout the Seashore. The carrying capacity could be implemented whenever overcrowding could cause safety concerns, such as peak use periods during major summer holidays and weekends. The allowable number of vehicles in each area subject to the carrying capacity would be determined by the space requirements and the beachfront length of the area.

Alternative C would include an ORV permit system, with no limit on the number of permits issued. Permit fees would be determined based on the recovery of NPS costs incurred in managing ORV use. Only annual permits would be available under this alternative, but these would be valid for 12 months from date of purchase so they could extend over the length of a season. To obtain the permit, ORV owners would be required to complete a short education program in person or online and pass a basic knowledge test demonstrating their understanding of the rules and regulations governing ORV use at the Seashore, beach-driving safety, and resource closure requirements. Following completion of the test, owners would need to sign for their permits to acknowledge that they understand the rules and that all drivers of the permitted vehicles will abide by the rules and regulations governing ORV use at the Seashore. A violation of the rules and regulations by the owner or driver of an ORV could result in revocation of the vehicle permit, and the owner/permittee would not be allowed to obtain another permit for any vehicle for a specified period of time.

Every five years the NPS would conduct a systematic review of the ORV and species management measures identified in this alternative as being subject to periodic review. This could result in changes to those management actions in order to improve effectiveness.

Designated routes and areas under alternative C are shown on figure 2 and described in table 7. Details of the management actions under this alternative are described in table 8 and species management strategies are described in table 10.

ALTERNATIVE D: INCREASED PREDICTABILITY AND SIMPLIFIED MANAGEMENT

This alternative is designed to provide visitors to the Seashore with the maximum amount of predictability regarding routes available for ORV use and vehicle-free areas for pedestrian use, which means establishing year-round ORV routes and vehicle-free areas. Under this alternative, ORV routes would be determined by identifying areas that historically do not support sensitive resources and areas of lower visitor use. These areas would be designated as ORV routes year-round. Areas of historically high resource sensitivity or high visitor use would not be designated as ORV routes. The establishment of ORV routes and vehicle-free areas on a year-round (rather than seasonal) basis would provide the public and the Seashore with a simplified management approach that would increase predictability and reduce confusion about what and when areas are available for ORV use, and reduce the need for staff resources on the beach. Because of the relative simplicity of the elements of this alternative, implementation would require a lower level of Seashore staff and resources than other action alternatives and would maximize the efficiency of Seashore operations.

Year-round vehicle-free areas would include lifeguarded beaches and the areas in front of villages, as well as designated SMAs. These vehicle-free areas would provide for visitor safety during periods of high visitation, particularly in the summer months, and would also provide a vehicle-free experience for visitors during the off-season. Soundside access would continue as currently provided under the no-action alternatives. Vehicle-free areas would also be established year-round at Cape Point and the spits to provide a simplified approach to sensitive species management for Seashore operations, maximizing contiguous protected areas and eliminating seasonal changes in designated ORV routes and the demands associated with enforcing those changes. Other uses would still be allowed in these vehicle-free areas outside any identified resource closures or SMAs. All SMAs would be managed using the ML1 strategy, which would involve larger and longer species protection buffers and would not allow pedestrian access once prenesting closures are established. Pedestrian access to these areas would be allowed once breeding activities are completed.

ORV routes under this alternative would still be subject to temporary resource closures established when protected species breeding behavior warrants and/or if new habitat is created. In addition to the breeding season measures, resource closures within some vehicle-free areas would be established, based on an annual nonbreeding habitat assessment conducted after the breeding season, to provide areas of nonbreeding shorebird habitat while still allowing a pedestrian or pedestrian/ORV access corridor in areas designated by the NPS (common to all alternatives).

To facilitate access to designated ORV routes, existing ORV ramps would be improved, reconfigured, and/or supplemented by new ramps at 62 and 64 (Note: All action alternatives involve relocating ramp 2 and building a new ramp at 32.5). No new or expanded parking areas would be provided under alternative D. Designated ORV routes would be open to ORV use 24 hours a day from November 16 through April 30. From May 1 through November 15, all potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) would be closed to non-essential ORV use from 7:00 p.m. to 7:00 a.m. to provide for sea turtle protection and allow enforcement staff to concentrate their resources during the daytime hours.

ORV safety closures would not be designated; ORV users would drive at their own risk and would be expected to rely on their knowledge of beach driving to determine if an area is safe to access based on their assessment of current conditions.

Alternative D would not include a carrying-capacity requirement, but would limit vehicles to a one-vehicle-deep parking configuration so that areas would not become overcrowded such that a safety concern would occur.

Alternative D would include a simple vehicle permit system, with no limit on the number of permits issued. Permit fees would be based on the recovery of NPS costs incurred in managing ORV use, but the fee should be lower than fees under alternatives C, E, or F due to the decreased management costs under this alternative. Only annual (based on the calendar year, as opposed to a 12-month period) permits would be available under this alternative. To obtain a permit, ORV drivers would be required to read the rules and regulations governing ORV use at the Seashore, including beach-driving safety and resource closure requirements. Owners would need to sign for their permit to acknowledge that they understand the rules and that all drivers of the permitted vehicle will abide by the rules and regulations governing ORV use at the Seashore. Special consideration would be paid to providing beach safety information because of the lack of safety closures under this alternative. A violation of the rules and regulations by the owner or driver of the ORV could result in revocation of the vehicle permit, and the owner/permittee would not be allowed to obtain another permit for any vehicle for a specified period of time.

Every five years the NPS would conduct a systematic review of the species management measures identified in this alternative as being subject to periodic review. This could result in changes to those management actions in order to improve effectiveness.

Designated routes and areas under alternative D are shown on figure 2 and described in table 7. Details of the management actions under this alternative are described in table 8 and species management strategies are described in table 10.

ALTERNATIVE E: VARIABLE ACCESS AND MAXIMUM MANAGEMENT

This alternative is designed to provide visitors to the Seashore with a wide variety of access opportunities for both ORV and pedestrian users, including to the spits and points, but often with controls or restrictions in place to limit impacts on sensitive resources. During the shorebird breeding season, some ORV routes may be kept open to use for longer periods of time by providing ORV pass-through zones at some spits and points and by improving interdunal road and ramp access. More pedestrian access would be provided through substantial additions to parking capacity at various key locations that lend themselves to walking on the beach. Vehicle-free areas would be provided during all seasons for non-ORV users to experience the Seashore without the presence of vehicles. Like the other action alternatives, this alternative would manage ORV use by identifying areas that historically do not support sensitive resources and areas of lower visitor use. Most of these areas would be designated as ORV routes year-round. Areas of high resource sensitivity and high visitor use would either be designated as seasonal ORV routes, with restrictions based on seasonal resource and visitor use, or as year-round vehicle-free areas. In addition, the SMAs would be reopened to ORV use approximately six weeks earlier than under alternative C (September 1 versus October 15).

During the shorebird breeding season, ORV pass-through zones would be designated at Bodie Island Spit, Cape Point, and South Point. The pass-through zones would use standard resource protection buffers and would not allow pedestrians, pets, ORV stopping, parking, or disembarking of passengers. These pass-through zones would be established to provide an increased possibility of access during the prenesting and incubation periods only, and would be subject to resource closures. Once through the pass-through zone, recreation would be allowed outside any existing resource closures. Both Bodie Island Spit and South Point would have pedestrian-only areas, when conditions allow, extending access beyond the end of the ORV route. When unfledged chicks are present, the probability of being able to provide this access would decrease. Therefore, in addition to the pass-through zones, the Seashore would promote the use of water taxis as alternative transportation to Bodie Island Spit and South Point, subject to designated landing zones and resource closures. Alternative E also involves the development of an interdunal pedestrian trail on Bodie Island. The trail would begin at a new parking area near ramp 4 and would provide access to the inlet. This new trail would also be subject to resource protection closures.

The variety of access methods possible under alternative E, based on the establishment of ORV routes, seasonal vehicle-free areas, designation of ORV pass-through zones, and the promotion of water taxi service to designated points and spits, would provide the public with ORV and pedestrian access to a greater number of areas within the Seashore, even during portions of the shorebird breeding season. However, this alternative would afford less predictability than alternatives C and D regarding areas available for use and would require a greater amount of oversight and management. Implementation would perhaps be difficult for the public to understand and would require more Seashore staff and resources than the other alternatives.

Areas that would be seasonally designated vehicle free would include the areas in front of villages, except Frisco and Hatteras, and most of the SMAs. The ORV open season in front of the villages would be defined as November 1 to March 31 and in most SMAs from September 1 through March 14 (when a resource closure is not limiting access), with ORV access (via a pass-through zone) to Bodie Island Spit, Cape Point, and South Point from March 15 through August 31 via a pass-through zone, subject to resource closures. Soundside access would remain open at currently designated boat launch areas, on Hatteras Inlet Spit from the Pole Road to Cable Crossing and the Spur Road, and on Ocracoke Island soundside areas where commercial fishing access is currently allowed. Under this alternative, motorcycles would be allowed on all routes and areas open to ORVs on the soundsides.

The remaining soundside access points would be closed to ORV use and small parking areas would be constructed to provide pedestrian access to the water. Signage/posts would be installed at the parking areas and boat launch areas to prevent damage to vegetation and other soundside resources.

ORV routes under this alternative would still be subject to temporary resource closures established when protected-species breeding behavior warrants and/or if new habitat is created. In addition to the breeding-season measures, resource closures and/or vehicle-free areas would be established, based on an annual nonbreeding habitat assessment conducted after the breeding season, to provide areas of nonbreeding shorebird habitat with reduced human disturbance while still allowing a pedestrian or pedestrian/ORV access corridor in areas designated by the NPS (common to all alternatives).

To facilitate access to ORV routes, this alternative would extend the existing interdunal road west of ramp 45 all the way to ramp 49, construct two new ramps (47 and 48), and build two new ramps at 62 and 64. (Note: All action alternatives involve relocating ramp 2 and building a new ramp at 32.5). A new ramp would be established at either 24 or 26, along with a new parking area at the selected location. Designated ORV routes would be open to ORV use 24 hours a day from November 16 through April 30. From May 1 through September 15, all potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) would be closed to non-essential ORV use from 10:00 p.m. to 6:00 a.m. to provide for sea turtle protection and allow enforcement staff to concentrate their resources during the daytime hours. From May 1 through September 15, a limited number of ORV users would be permitted to park and stay overnight at selected spits and points, under the terms and conditions of a special use permit, when such areas are not otherwise closed to protect sensitive resources. From September 16 through November 15, ORV routes with no or a low density of turtle nests remaining (as determined by the NPS) would be open between 10:00 p.m. and 6:00 a.m., subject to the terms and conditions of a required permit (see table 8 for details). This alternative also involves the addition of parking spaces at several ramp locations.

ORV safety closures could be designated as conditions warrant and would be evaluated for reopening by NPS law enforcement staff on a weekly basis. ORV safety closures would be applicable only to ORV access; pedestrian and commercial fishing access would generally be maintained through ORV safety closures. For village beaches that are open to ORV use during the winter season, the village beaches must be at least 20 meters wide from the toe of the dune seaward to the mean high tide line in order to be open to ORV use.

Alternative E would include a carrying-capacity requirement for all areas based on a physical space requirement of one vehicle per 20 linear feet for Bodie and Hatteras Island Districts, except 400 vehicles would be allowed within a 1-mile area centered on Cape Point, and one vehicle per 30 linear feet for the Ocracoke Island District. The carrying capacity would be implemented whenever overcrowding could cause safety concerns, such as at peak use periods during major summer holidays and weekends. The allowable number of vehicles in each area would be determined by the space requirements and the beachfront length of the area.

Alternative E would include an ORV permit system, with no limit on the number of permits issued. Permit fees would be determined based on the recovery of NPS costs incurred in managing ORV use. Expected permit fees would be higher under this alternative due to the intense level of management required for implementation. Both annual and weekly permits would be available under this alternative. To obtain a permit, ORV owners would be required to complete a short education program in person or online and pass a basic knowledge test demonstrating their understanding of the rules and regulations governing ORV use at the Seashore, beach-driving safety, and resource-closure requirements. Following completion of the test, owners would need to sign for their permit to acknowledge that they understand the rules and that all drivers of the permitted vehicle will abide by the rules and regulations governing ORV use at the Seashore. A violation of the rules and regulations by the owner or driver of the ORV could result in revocation of the vehicle permit, and the owner/permittee would not be allowed to obtain another permit for any vehicle for a specified period of time. The park-and-stay provision would be managed under a separate special use permit. Alternative E would also include a self-contained vehicle (SCV) camping opportunity from November 1 to March 31 at three NPS campgrounds (one in each district), with a separate permit requirement and use limits.

Every five years the NPS would conduct a systematic review of the ORV and species management measures identified in this alternative as being subject to periodic review. This could result in changes to those management actions in order to improve effectiveness.

Designated routes and areas under alternative E are shown on figure 2 and described in table 7. Details of the management actions under this alternative are described in table 8 and species management strategies are described in table 10.

ALTERNATIVE F: NPS PREFERRED ALTERNATIVE

In December 2007, the Department of the Interior established a negotiated rulemaking advisory committee (Committee) to assist the NPS in the development of an ORV regulation for the Seashore. The Committee met 11 times from January 2007 through February 2009, and conducted numerous subcommittee and work group meetings and conference calls. The Committee discussed and explored options for the full spectrum of ORV management issues covered in this plan/EIS. As a result of these discussions, the NPS considered a variety of concepts and measures that either originated from Committee members or were discussed during Committee, subcommittee, or work group sessions. Although the Committee as a whole did not reach a consensus on a recommended alternative, in creating this action alternative the NPS has made management judgments as to which combination of concepts and measures would make an effective overall ORV management strategy. The NPS has also included under alternative E some ORV management approaches identified by the Committee that would require more intensive management (such as park-and-stay and SCV camping), in keeping with the maximum management theme of that alternative.

After reviewing public and agency comments, the NPS revised alternative F by adopting some of the simpler approaches from the other alternatives, e.g., instead of SMAs, using standard buffers with prenesting and nonbreeding closures; simpler and easier to understand hours for night-driving restrictions;

and using more consistent seasonal closure dates among the villages. Also in response to public and agency comments, the amount of construction was decreased and pedestrian access increased. The bypass provision and criteria from alternative A was incorporated in alternative F to mitigate effects of sea turtle closures that could block fall ORV access to Cape Point. Designation of ORV routes was adjusted to provide balance between ORV areas and vehicle-free areas.

This alternative is designed to provide visitors to the Seashore with a wide variety of access opportunities for both ORV and pedestrian users, including access to the spits and points, but often with controls or restrictions in place to limit impacts on sensitive resources. This means that some areas may be kept open to ORV users for longer periods of time by reopening some ORV corridors at the spits and points sooner after shorebird breeding activity is completed than in alternatives C or E, and by improving interdunal road and ORV ramp access. Pedestrian access would be enhanced by providing increased parking capacity at various points of access to vehicle-free areas. Such areas would be provided during all seasons so non-ORV users can experience the Seashore without the presence of vehicles. Like the other action alternatives, this alternative would manage ORV use by identifying areas that historically do not support sensitive resources and areas of lower visitor use. Some of these areas would be designated as ORV routes year-round. Areas of high resource sensitivity and high visitor use would generally be designated as vehicle-free areas year-round or as seasonal ORV routes, with restrictions based on seasonal resource and visitor use.

The year-round designation of vehicle-free areas and ORV routes, in conjunction with the species management strategies described in table 10-1, would provide for species protection during both the breeding season and the nonbreeding season. SMAs would not be designated under this alternative and one set of standard buffers, similar to the ML2 buffers in the other action alternatives, would be used. During the shorebird breeding season, pedestrian shoreline access along ocean and inlet shorelines below the high-tide line would be permitted in front of (i.e., seaward of) prenesting areas until breeding activity is observed, then standard buffers for breeding activity would apply. The NPS retains discretion at all times to enforce more proactive closures or take other measures, if considered necessary, consistent with its obligations under the law. Prenesting areas would generally be closed March 15 through July 31 (or August 15 if black skimmers are present), or until two weeks after all chicks have fledged and breeding activity has ceased, whichever comes later. For all species closures, including prenesting closures, the NPS would not reduce buffers to accommodate an ORV corridor or ORV ramp access.

Bodie Island Spit would be designated as a seasonal ORV route from September 15 through March 14 and would be vehicle free from March 15 through September 14. Like alternative E, alternative F also involves the development of an interdunal pedestrian trail on Bodie Island. The trail would begin at a new parking area near ramp 4 and would provide access to the inlet. This new trail would also be subject to resource-protection closures. Year-round ORV routes would be designated at Cape Point and South Point, with 35-meter-wide (115-foot-wide) ORV corridors during the breeding season. Standard resource-protection buffers would apply to these ORV corridors. When nests occur near the ORV corridor or unfledged chicks are present, the probability of being able to provide this access would decrease. The provision and criteria described in alternative A for creation of short-term bypasses would be incorporated in alternative F only for sea turtle nests and only between ramp 44 and Cape Point. Alternative F would include the construction of a short seasonal ORV route to provide pedestrian access to the sound on Ocracoke Island. In addition, the NPS would consider applications for commercial use authorizations to offer beach and water shuttle services and would apply for funding to conduct an alternative transportation study to evaluate the feasibility of alternative forms of transportation to popular sites, such as inlets and Cape Point.

The variety of access methods possible under alternative F, based on the establishment of year-round and seasonal ORV routes and vehicle-free areas, and increased interdunal roads and parking to support access,

would provide the public with ORV and pedestrian access to a greater number of areas within the Seashore. This alternative would afford less predictability than alternative C or D, but more predictability than alternative E, regarding areas available for use, and it would require a comparable level of oversight and management to alternative E.

Areas that would be seasonally designated as vehicle free would include the areas in front of Ocracoke Campground and villages, except for Rodanthe north of the pier and Buxton, which would be vehicle free year-round. The dates for ORV use in front of the seasonally designated villages and Ocracoke Campground would be November 1 to March 31 when visitation and rental occupancy is lowest. These areas would be vehicle free April 1 to October 31 when visitation and rental occupancy is highest. When these beaches are open to ORV use, a safety closure would be implemented on portions of the beach that are not consistently at least 20 meters (66 feet) wide during normal high tides.

To facilitate access to ORV routes, this alternative would add new ramp 25.5 approximately 2.5 miles south of ramp 23, relocate ramp 59 to 59.5, and add a new ramp 63 across from Scrag Cedar Road. (Note: All action alternatives involve relocating ramp 2 and building a new ramp at 32.5). New interdunal roads would facilitate access to locations that have either seasonal or year-round restrictions on ORV use. Locations for interdunal roads would include: inland of South Beach from ramp 45 to ramp 49, with one new ramp at 47.5 and on Hatteras Inlet Spit extending from the intersection of Pole and Spur Roads southwest toward the inlet, stopping at least 100 meters from the inlet. Existing soundside access points would remain open, with better maintenance than currently occurs. Signage/posts would be installed at the soundside parking areas and boat launch areas to prevent damage to vegetation and other soundside resources. This alternative also involves the addition of new parking areas with associated foot trails or boardwalks to facilitate pedestrian access at a number of locations.

ORV routes and vehicle-free areas under this alternative would still be subject to temporary resource closures established when protected-species breeding behavior warrants and/or if new habitat is created. Outside the breeding season, vehicle-free areas throughout the Seashore would provide relatively less-disturbed foraging, resting, and roosting habitat for migrating and wintering birds. These areas would be open to pedestrians for recreational use. In addition, resource closures at spits and points would also be established, based on an annual nonbreeding habitat assessment conducted after the breeding season, to provide areas of nonbreeding shorebird habitat with reduced human disturbance.

Designated ORV routes would be open to ORV use 24 hours a day from November 16 through April 30. From May 1 through November 15, all potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) would be closed to non-essential ORV use from 9:00 p.m. until 7:00 a.m. to provide for sea turtle protection and allow enforcement staff to concentrate their resources during the daytime hours; however, from September 16 through November 15 selected ORV routes with no turtle nests remaining (as determined by the NPS) would reopen to night driving, subject to the terms and conditions established under the ORV permit.

ORV safety closures could be designated as conditions warrant and would be evaluated for reopening by NPS law enforcement staff on a weekly basis. ORV safety closures would be applicable only to ORV access; pedestrian and commercial fishing access would generally be maintained through safety closures. Alternative F provides specific guidelines for establishing and removing safety closures. Additional ORV-driving requirements would be implemented to provide for increased pedestrian safety in all areas open to ORV use, including the village beaches when open to ORV use. Under the carrying capacity requirement for alternative F, the maximum number of vehicles allowed on any particular ORV route during peak use periods would be the linear distance of the route divided by 6 meters (20 feet) per vehicle (i.e., the equivalent of 260 vehicles per mile). In addition, parking within ORV routes would be allowed,

but restricted to one vehicle deep. These measures would reduce safety concerns associated with overcrowding, such as at peak use periods during major summer holidays and weekends.

Alternative F would include an ORV permit system, with no limit on the number of permits issued. Permit fees would be determined based on the recovery of NPS costs incurred in implementing the ORV management plan that are not already covered by the Seashore's base operating funds. Expected permit fees would be similar to alternative E due to the level of management required for implementation. Both annual and 7-day permits would be available under this alternative. To obtain a permit, ORV owners would be required to complete a short education program in person at an NPS facility. Vehicle owners would need to sign for their permit to acknowledge that they understand the rules and that all drivers of the permitted vehicle will abide by the rules and regulations governing ORV use at the Seashore. A violation of the rules and regulations by the owner or driver of the ORV could result in revocation of the vehicle permit, and the owner/permittee would not be allowed to obtain another permit for any vehicle for a specified period of time. In addition to the mandatory education program for ORV users, the NPS would establish a voluntary resource-education program targeted toward non-ORV beach users.

Every five years the NPS would conduct a systematic review of the species management measures identified in this alternative as being subject to periodic review. This could result in changes to those management actions in order to improve effectiveness.

Designated ORV routes under alternative F are shown on figure 2 and described in table 7-1. Details of the management actions under this alternative are described in table 8 and species management strategies are described in table 10-1.

HOW ALTERNATIVES MEET OBJECTIVES

As stated in chapter 1 of this document, all action alternatives selected for analysis must meet all objectives to a large degree. The action alternatives must also address the stated purpose of taking action and resolve the need for action; therefore, the alternatives were individually assessed in light of how well they would meet the objectives for this plan/EIS, which are stated in chapter 1 of this document.

Alternatives that did not meet the objectives were not analyzed further (see the "Alternative Elements Considered but Dismissed from Further Consideration" section in this chapter).

Table 12 compares how each of the alternatives described in this chapter would meet the plan objectives. Chapter 4 of this document describes the effects of each alternative on each impact topic. These impacts are summarized in table 13. Tables 12 and 13 are included at the end of this chapter.

ALTERNATIVE ELEMENTS CONSIDERED BUT DISMISSED FROM FURTHER CONSIDERATION

USE AREAS, ORV MANAGEMENT, AND VISITOR USE

Modify the ORV Management Plan in Accordance with Plans Proposed by Groups Outside the NPS

During the public comment period for the draft plan/EIS, alternative plans for the management of ORVs and wildlife at the Seashore were submitted. Many of the elements in these proposals are already included in the range of alternatives considered, or have been incorporated into the revised alternative F (NPS preferred alternative). Those elements that are not included were considered but dismissed for the reasons discussed below under the headings: Implement Additional Vehicle Requirements, Additional

Requirements for Permit Holders, Alternative Methods for Determining ORV Carrying Capacity, Allow for a Greater Level of Night Driving at the Seashore, Provide an ORV Pass-through Corridor through All Species Closures/Buffers, Criteria for the Designation of SMAs, Relocate Bird and Turtle Nests, Modify the Turtle Program, Implement a Volunteer Program to Assist with Species Protection, Create an Oversight Committee with External Experts and Scientists, Create New Habitat, and Give Special Consideration only to Flora and Fauna Listed as Threatened or Endangered.

Consider Pea Island National Wildlife Refuge when Considering Use Areas

Many commenters suggested that Pea Island NWR (refuge) should be considered when developing this plan/EIS. Suggestions included considering the refuge as a vehicle-free area, and conversely, as a potential area where ORVs could be used where there is not a resource conflict. Commenters felt that the refuge should be considered a part of the baseline for analysis, and should be considered when providing appropriate visitor use. Although the 5,880-acre Pea Island NWR is located at the northern end of Hatteras Island, and is within the boundary of the Seashore, the refuge is administered by the USFWS. The Seashore's 1978 draft interim ORV management plan affirmed that the refuge manager has management responsibility for posting closures on beaches within the refuge as he or she may find necessary to implement the regulations of the USFWS. The NPS recognizes that approximately 12.1 miles of beach within the refuge has been closed to ORVs for a number of years and at present provides an opportunity for visitors to the north end of Hatteras Island to walk on the beach in the absence of vehicles; however, because the refuge is not administered by the NPS, the Seashore cannot direct the management of visitor use at the refuge. The USFWS is responsible for making decisions about ORV and pedestrian access and has done so under a public planning process in the Pea Island National Wildlife Refuge Comprehensive Conservation Plan (USFWS 2006b), as mandated by the *National Wildlife Refuge Improvement Act of 1997*. Through this process, the USFWS has determined that ORV use would not be appropriate or compatible with the mission of the refuge.

NPS also recognizes that there are times and locations on Nags Head and Cape Lookout National Seashore beaches, where ORVs may and may not be driven, providing additional opportunity for recreation with and without vehicles. Under the *Organic Act*, the NPS is responsible for managing activities in the Seashore to conserve the natural resources unimpaired on NPS-managed lands within the Seashore, which includes protecting the wildlife and its habitat. Similarly, under the Seashore's enabling legislation, NPS is mandated to preserve the unique flora and fauna and physiographic conditions. The presence of a species outside the Seashore does not mitigate, eliminate, or affect the authority and responsibility of the NPS under both the *Organic Act* and the Seashore enabling legislation to preserve unimpaired the Seashore populations of wildlife.

Prohibit the Use of Off-Road Vehicles

Prohibition of ORV use at the Seashore would not meet the purpose, need, and objectives of this plan/EIS. The purpose of this plan is to "develop regulations and procedures that carefully manage ORV use/access in the Seashore to protect and preserve natural and cultural resources and natural processes, provide a variety of visitor use experiences while minimizing conflicts among various users, and promote the safety of all visitors..." ORV use, if effectively managed, provides convenient access for many appropriate visitor activities at some popular beach sites including, for example, activities that use vehicles to transport substantial amounts of gear for the activity. Prohibition, rather than management, of ORV use could substantially diminish such visitor experience opportunities. Therefore prohibition of all ORV use would not meet the plan need.

In addition to not meeting the purpose, need, and objectives of this plan/EIS, ORV use is a historical use at the Seashore that has been accounted for in Seashore planning documents. Management goals related to ORV use are included in the Seashore's General Management Plan, which states, "Selected beaches will

continue to be open for ORV recreational driving and in conjunction with surf fishing in accordance with the existing use restrictions” (NPS 1984). Providing for this use would occur in the context of the overall planning objective of preserving the cultural resources and the flora, fauna, and natural physiographic conditions, while providing for appropriate recreational use and public access to the oceanside and soundside shores in a manner that will minimize visitor use conflict, enhance visitor safety, and preserve Seashore resources. ORV use preceded the establishment of the Seashore and management of this use, rather than prohibition, continues to be the intent of the NPS. The NPS acknowledges that if it does not promulgate a special regulation to authorize ORV use, then ORV use would, in fact, be prohibited at the Seashore; however, because a complete prohibition of ORV use does not meet the purpose, need, and objectives of this plan/EIS and because ORV use is a use that is accounted for in Seashore plans and policies, elimination of all ORV use at the Seashore was not carried forward for further analysis.

Changes in Infrastructure and Regulations of Other Jurisdictions

Commenters suggested elements that would involve jurisdictions outside the NPS, including:

- Provide NPS parking and beach access points throughout Dare County villages.
- Lower the speed limit on NC-12 between villages to 45 mph during peak use times to reduce the danger from vehicles with aired-down tires.
- Limit the use of bright lighting in oceanfront houses.
- Create a sound ordinance.
- Create guidelines for oceanfront structures, such as setbacks from the high-tide mark and rebuilding guidelines, to address damage to existing oceanfront structures.

These suggestions would require action by the county or state. Lowering the speed limit would require a change in current state regulations. The county would be responsible for changing building codes or adding more parking and access points. Creating sound or turtle friendly lighting ordinances or occupancy restrictions for rental homes would require action of the respective counties. The NPS does not have the authority to require these jurisdictions to undertake such action. However, the NPS has worked with the communities within the Seashore on many issues, including those related to ORV management, and under all alternatives would continue to work cooperatively to encourage actions such as turtle-friendly lighting and education. Although the NPS cannot require Dare County to provide more parking or beach access, some of the alternatives evaluated in this plan/EIS address additional parking areas on Seashore land.

Implement Additional Vehicle Requirements

During public comment on the draft plan/EIS, commenters recommended additional vehicle requirements such as requiring vehicles to be oil leak free, permitting only electric vehicles, and requiring that license plates be displayed properly. The Seashore does not have the capability to efficiently inspect each vehicle that enters the beach to determine if it is leaking oil. Individual vehicle inspections for leaking fluids could cause substantial traffic backups, which would adversely affect visitor experience and safety. However, all vehicles operated in the Seashore must comply with state inspection requirements, which include regulations on leaking fluids. If the NPS were to observe a vehicle leaking oil, it would be removed from the beach. The NPS is not proposing to allow only electric vehicles in the Seashore due to the limited availability of these vehicles to the general public. Obstruction of the rear license plate is a violation of North Carolina law, which is enforced by NPS law enforcement staff under 36 CFR 4.2(b). In developing the details of the ORV permit program, the Seashore would consider whether this violation would be a basis for permit revocation.

Provide All-Terrain Vehicle/Utility Terrain Vehicle Access and Remove the Helmet Requirement

Commenters suggested that ATVs and utility terrain vehicles (UTVs) should be allowed on the beach and that ATV users should not be required to use helmets. The NPS only allows street-legal vehicles on the beach under the North Carolina Motor Vehicle Code, which does not include ATVs or UTVs.

Alternatives in this plan/EIS do not include changing the requirement for street-legal vehicles. The Seashore considers ATV and UTV use at the Seashore to be incompatible with visitor use and resource protection goals and objectives due to the damage they could cause. Further, street-legal vehicles are used for transportation, but the majority of ATVs and UTVs are used primarily for recreational or utility purposes, although they may secondarily serve a transportation function. Since ATVs and UTVs would not be permitted, the issue of requiring helmets is not applicable.

Assign Permits to Users Instead of Vehicles

For the alternatives that include a permit system, permits would be assigned to a particular vehicle through issuance to the registered owners of vehicles. A permit sticker would then be affixed to the vehicle, where it would be easily visible by law enforcement personnel. Another option of assigning permits to the person only, not the vehicle, was considered, but eliminated. Verifying that people have permits that are movable between multiple vehicles would require substantially more effort by law enforcement staff, who would have to stop each driver visitor and ask to see their permit. Therefore, to assist in enforcing the permit system, permits are assigned to the registered owners and affixed to the vehicles under all alternatives.

Require a Permit for All Users of the Seashore

The idea of an entrance or admission fee for the Seashore was discussed thoroughly during the negotiated rulemaking process, and was dismissed primarily due to administrative and financial obstacles. The establishment of an entrance fee would require the NPS to install manned entrance gates in the Seashore to collect visitor fees. However, there are thousands of local residents who have to travel through the Seashore to gain access to their property. The logistics of collecting entrance fees from all visitors would result in delays at entrances and would impede efficient travel along NC-12.

In addition, parking and access fees are managed under the *Federal Lands Recreation Enhancement Act* (FLREA), which does not provide for a cost recovery program. Therefore, the Seashore would be able to retain only a portion of the entrance or parking fees collected and could not use those funds to support key functions associated with an ORV management program, such as law enforcement, maintenance of routes or parking lots, or resource management. As a result, the collection of admission and parking fees was not carried forward for further analysis.

Provide Separate Permits for Different Areas of the Seashore as a Means of Limiting Congestion

The ORV permit system is an enforcement and education tool to reduce adverse impacts to park resources and visitor experience. It is not intended to limit the number of ORVs on Seashore beaches. During internal and public scoping as well as the negotiated rulemaking process, the NPS considered various methods for establishing an ORV permit system. A common theme among the alternatives for ORV permits was that fees should be kept reasonable so that all visitors, regardless of income level, would be able to afford to purchase an ORV permit. The most logical method of implementing an ORV permit system would be to use the special park uses authority under 16 USC 3a which would allow the Seashore to recover the cost of implementing the ORV management program. A permit system that required a

different permit for different locations in the Seashore would be complex to implement, resulting in increases in NPS management costs. Such costs would ultimately be passed along to ORV users because the permit fees would be based on cost recovery. Therefore, more complex permitting systems were considered but not carried forward for analysis. As a result, the concept of establishing vehicle limits in certain areas through an ORV permit system was not carried forward for further analysis.

Additional Requirements for Permit Holders

During public comment on the draft plan/EIS, commenters recommended a range of requirements that could be included in a permit system such as having permit holders report turtle crawl activity. Although the Seashore encourages the public to report certain species activities, including turtle crawls, *requiring* the public to report turtle crawls would not be appropriate as part of an ORV permit program and was dismissed from further analysis. However, suggestions made for various educational components, such as watching an educational video, are included in the range of alternatives.

Provide Night Parking at the End of Access Ramps on the Beach Side and Along the Sandy Road Behind the Dunes at Cape Point and the Spits

Night parking (but not camping) for pedestrian beach access would be allowed at roadside parking areas identified on the maps for alternative F. Allowing vehicles to park overnight on interdunal roads or ORV ramps immediately adjacent to resource sensitive locations would be difficult to patrol and enforce. Additionally, it could place an unrealistic expectation on visitors in such locations to strictly comply with the applicable resource protection restrictions. The NPS does not have the resources to patrol the entire Seashore at night to enforce compliance. The placement of more parked vehicles on ORV routes adjacent to the beach at night would potentially result in additional compliance problems, and was not carried forward for further analysis.

Locate ORV Routes Behind the Dunes, Away from Pedestrian Users

Routes behind the dunes would be more damaging to the environment in some cases because the land there is not hard, bare beach sand but instead is loose sand, and the area contains vegetation and other wildlife. Additionally, interdunal roads would not allow the same degree of access that designated ORV routes would provide to visitors that use ORVs for access to recreational activities. Some interdunal roads would be provided to allow for ORV access around designated vehicle-free areas. As a result, locating ORV routes behind dunes as a general practice was not carried forward for further analysis.

Alternative Methods for Determining ORV Carrying Capacity

During public comment on the draft plan/EIS, commenters provided a range of suggestions for determining the ORV carrying capacity at the Seashore. This includes extending carrying capacity limits to all areas of the Seashore, allowing vehicles to stack more than one deep, implementing limits on pedestrian use, and increasing or decreasing the proposed vehicle limits. Overall, the NPS established carrying capacity limitations primarily as a visitor safety mechanism to reduce the potential for vehicle-vehicle and pedestrian-vehicle conflicts that can occur in areas where vehicles and pedestrians coexist. The NPS considered various options for determining carrying capacity limits which are included in the range of the alternatives in this plan/EIS. For more information please see “Appendix C: Concern Response Report” (response to Concern ID 24129).

Use a Different Term for “Requirement” in Law Enforcement Text

Commenters suggested using the words “courtesy,” “guidelines,” or “rule” instead of “requirements.” Where the word “requirements” is used in an alternative, it implies a level of regulatory enforcement authority. In these areas, changing the word to “guidelines” or “courtesy” would not imply enforcement capability; therefore, this suggestion was not carried forward in the alternatives.

Provide Around-the-Clock Enforcement

Commenters suggested that around-the-clock enforcement would ensure resource protection. The Seashore has no source of funding capable of supporting around-the-clock enforcement in all areas at all times. This suggested level of enforcement is not the norm for any national seashore. The action alternatives provide for increased outreach and education to help improve voluntary compliance, but around-the-clock enforcement would not be feasible and was therefore not included in any alternatives.

Designate a “Backcountry Zone” Where Pedestrians Can Walk

Designation of a backcountry zone is not within the scope of this project. However, the Seashore will address park management zones in the revision of the General Management Plan (GMP) for the Seashore.

Establish Two Marked Travel Paths on the Beach

Marking travel lanes in ORV routes along the length of the Seashore would not be possible nor desirable because of the visual impact. However, alternative F requires that two-way traffic remain unimpeded within ORV routes and also provides the Seashore with the authority to close down a section of beach if two-way traffic is impeded.

Construct an “Access Trail” to Hatteras Spit

Over the past several years, the Seashore has provided ORV access to the back side of Hatteras spit whenever it would not result in human safety or resource impacts. Some of the sound shoreline area is very narrow; having a small strip of sand that is subject to flooding at high tide unless one drives on the vegetation. This includes wetland vegetation that bounds it on the land side. Because it is problematic to access the sound from Pole Road at other points, alternative F provides for ORV access to the sound behind the Coast Guard Station, at Cable Crossing and at Spur Road, and did not carry an access trail to Hatteras Spit forward for further analysis.

Add a Public Soundside Beach on Ocracoke

NPS believes that the suggestion to provide a soundside beach on Ocracoke has merit. However, it is outside the scope of the ORV plan/EIS and was not included in the alternatives carried forward for further analysis. The NPS believes that it would be an appropriate topic for the Seashore’s upcoming GMP revision process.

Divide the Seashore by Different Recreational Uses

The purpose of the plan is to develop regulations and procedures that carefully manage ORV use/access in the Seashore to protect and preserve natural and cultural resources and natural processes; to provide a variety of visitor use experiences while minimizing conflicts among various users; and to promote the safety of all visitors. While it is recognized that individuals who use ORVs do so for a variety of purposes or to pursue different recreational interests, developing a nuanced approach to designating ORV areas

based on the different individual interests would be extremely difficult and is beyond the scope of this plan. Therefore, this approach was not carried forward as an element of the alternatives evaluated. The NPS believes that the range of alternatives evaluated in this plan/EIS provide various ORV routes and vehicle-free areas, which offer visitors the opportunity to select the locations best suited for pursuing their respective interests, whether it be fishing, swimming, shell collecting, bird watching, or other uses.

Allow for a Greater Level of Night Driving at the Seashore

During public comment on the draft plan/EIS, commenters requested that night driving only be restricted between May 27 and August 25, and requested that some level of nighttime access be maintained between these dates. NPS considered a range of dates for night driving from unrestricted night driving, 365 days per year in alternative A to the dates for nighttime restrictions in alternatives B – F. These dates were identified based on the sea turtle nesting season to reduce the chance for direct or indirect impacts to nesting sea turtles from ORV use. Since 2000, three nests were found prior to May 15 (two of which were leatherback nests) and four nests have been found after September 1. It is important to note that prior to 2008, nest patrols were conducted only from June 1 through August 31 (2001–2005), or May 15 through September 15 (2006 and 2007). Any nests laid outside of that timeframe had a greater likelihood of not being found, recorded, and protected by resource management staff.

Direct adverse impacts of nighttime driving were documented during the 2010 nesting season when an ORV driving on the beach at night – in violation of the consent decree – struck and killed a nesting female loggerhead turtle during the nighttime hours between June 23 and June 24. The turtle had crawled out of the ocean and attempted to lay a nest between ramps 70 and 72 on Ocracoke Island. The ORV hit the turtle and dragged her approximately 12 feet, causing fatal injuries. The turtle was found dead by NPS turtle patrol at 6:10 a.m. on June 24. This particular incident is the first documented time a nesting sea turtle has been killed by an ORV at the Seashore (NPS 2010b).

The NPS believes that nighttime restrictions from May 1 until November 15 provide the proper level of protection for sea turtles. Further, the NPS believes that providing exceptions to this would have unacceptable adverse impacts to sea turtles at the Seashore. For these reasons, the NPS did not specifically analyze a May 27 to August 25 nighttime driving restriction period.

No Restrictions on ORV Use

Unrestricted ORV use at the Seashore would not meet the purpose, need, and objectives of this plan/EIS. The purpose of this plan/EIS is to “develop regulations and procedures that carefully manage ORV use/access in the Seashore to protect and preserve natural and cultural resources and natural processes, to provide a variety of visitor use experiences while minimizing conflicts among various users, and to promote the safety of all visitors.” Unrestricted ORV use would not provide for a variety of appropriate uses and, therefore, not meet the plan/EIS need. Also, the need of the plan/EIS, including providing consistent management of ORV use, would not be addressed. Unrestricted ORV use would not meet many of the plan/EIS objectives that relate to managing ORV use. For example, the following three Visitor Use and Experience objectives would not be met if unrestricted ORV use was allowed:

- Ensure that ORV operators are informed about the rules and regulations regarding ORV use at the Seashore.
- Manage ORV use to allow for a variety of visitor use experiences.
- Minimize conflicts between ORV use and other uses.

Therefore, because it would not meet the purpose, need, and objectives of this plan/EIS, unrestricted ORV use was not carried forward for further analysis.

SPECIES PROTECTION

Implement an Escort Program

During development of the Interim Strategy, some alternative elements were considered but not carried forward because they would be reevaluated in this plan/EIS. One of these elements was the implementation of an escort program, whereby vehicles would be escorted around resource closures by Seashore staff.

This program would be similar to the situation in 2005, where at Hatteras Inlet Spit, ORV traffic was permitted only in the ORV corridor once per hour in convoys escorted by bird monitors, to reduce the risk of mortality to an American oystercatcher brood and to reduce disturbance to an incubating plover nest. ORVs were permitted to park at the tip of the spit, west of the escort corridor. The spit was closed to recreation at night. Once the piping plover eggs hatched, Hatteras Inlet Spit was closed to ORV traffic until the chicks fledged.

This type of escort system was considered for this plan/EIS, but, as stated in the Interim Strategy, the escort system would be extremely labor intensive to initiate, and providing the staffing levels necessary to adequately implement an escort program would likely not be feasible. This was demonstrated during the 2005 season when the Seashore had to transfer personnel from other NPS units to implement the escort system. Due to the intensive staffing required for this effort, it was determined that this element would not meet the plan/EIS objectives related to Seashore operations.

Provide an ORV Pass-through Corridor through All Species Closures/Buffers

During public comment on the draft plan/EIS, commenters recommended providing a corridor through all species resource closures and buffers. A buffer or resource closure is an area surrounding a sensitive resource, such as bird nests or chicks, which is closed to visitor access during critical life cycle stages to reduce human disturbance and the risk of mortality due to pedestrians and ORVs. Any passages, corridors, or pass-throughs that cut directly across/through a resource closure would essentially undermine the biological function of the closure and could render it compromised, perhaps even useless to the species it is meant to protect if all buffers include ORV corridors. Therefore, the element of including an ORV corridor in all buffers was not included in the range of alternatives, but a more limited concept of a pass-through was included in alternative E.

Criteria for the Designation of Species Management Areas

During public comment on the draft plan/EIS, commenters recommended additional criteria for the designation of SMAs. Such criteria included areas of high quality habitat (even if there has not been recent breeding activity), how SMAs should be established and expanded, and the use of 10 years (rather than 5 years) of nesting history to designate these areas. The concept of including high quality habitat was incorporated in the range of alternatives by the use of prenesting surveys that would result in prenesting closures of suitable habitat. Although the SMA would not be designated based on the “high quality habitat” criteria, these areas would still be offered protection through the prenesting survey and closure. This would also apply to expanding SMAs; although the SMA itself would not expand habitat, outside the SMA would be protected through prenesting closures or breeding/nesting buffers. For these reasons, these elements were not carried forward for further analysis.

The use of 10 years, rather than 5 years, of nesting history to designate SMAs was not considered a reasonable alternative because so much potential nesting substrate is impacted and rearranged on an annual basis, especially during fall and winter storms. Since this area is frequently changing, it is believed that it is sufficient to use breeding and nesting location data from the five previous years in conjunction with an annual pre-season habitat assessment. Given how much annual change there is in suitable nesting substrates on barrier islands, 10 years of nesting/breeding data would very likely capture many sites that do not presently have sufficient potential to support breeding populations. As a result, the use of 10 years of nesting data was not carried forward for detailed analysis.

Move Hatched Chicks to Pea Island National Wildlife Refuge or Other Area

Commenters suggested moving hatched bird chicks from the beach to other areas where they would be protected. This conflicts with NPS responsibilities under the ESA, MBTA, *Organic Act* (as described in the turtle hatcheries section below), and the NPS *Management Policies 2006*. Further, moving chicks is not feasible because until they fledge, chicks must remain with their parents for foraging and protection. Relocating chicks would not meet the plan/EIS objective of minimizing adverse impacts to threatened, endangered, and other protected species.

Provide Captive Rearing of Piping Plovers and Turtles

Commenters suggested rearing endangered species in captivity. Wildlife managers use captive breeding/rearing of threatened or endangered species in the following circumstances: (1) to provide an opportunity to restore populations where direct translocation may risk the persistence of the donor population; or (2) as a last resort in cases where most or all of the entire remaining wild population are brought to a captive breeding facility with the goal of avoiding extinction and breeding enough individuals for eventual reintroduction into the wild (e.g., California condor) (Gilpin and Soulé 1986). The Kemp's ridley sea turtle hatchery at Padre Island National Seashore is an example of a last-resort captive rearing facility used to restore a population. None of these situations apply to piping plover or nesting loggerhead, leatherback, or green sea turtles at Cape Hatteras National Seashore, so this suggestion was not included in any of the alternatives. Furthermore, the revised Loggerhead Sea Turtle Recovery Plan (NMFS and USFWS 2008) recommends the use of the least manipulative method to protect nests and the discontinuance of the use of hatcheries as a nest management technique.

Relocate Bird and Turtle Nests

Commenters suggested that the Seashore relocate bird or turtle nests to areas of the beach already closed to ORV use or relocate nests to smaller, more compact areas to facilitate management. These alternatives have been considered but are not carried forward, as discussed below.

Birds. Some species of birds, such as the burrowing owl, adapt well to nest relocation, but others do not. Birds that do not relocate well typically are those that demonstrate higher levels of nest abandonment. Nest abandonment by piping plovers and American oystercatchers is a documented source of nest failure at the Seashore. Therefore, relocating nests would likely result in increased nest abandonment and failure. In addition, moving nests into one area would not be feasible. Plovers and oystercatchers are solitary rather than colonial nesters (i.e., they nest away from others of their species). Plovers sometimes nest near tern colonies to benefit from the aggressive behavior of terns protecting their colonies; however, they typically do not nest with other plovers. Since the purpose of the strategy is species protection, and moving nests would reduce these species' ability to reproduce, moving nests was eliminated from further analysis.

Turtles – Routinely Relocate Turtle Nests. Turtles do not face the same nest-abandonment issues as those described for birds. Parental investment in the young ends with the laying and burying of eggs. However, the eggs, subsequent hatchlings, and overall species may face additional problems related to nest relocation. Studies indicate that the determination of the hatchling sex ratio depends on the temperature at which the eggs incubate. Changes in these temperatures due to moving eggs may result in changes to the sex ratio, which would have implications for the species as a whole.

Other hatchling characteristics can be altered by relocating nests as well. Sea turtles naturally distribute their nests both temporally (nest several times throughout the nesting season) and spatially (locate nests low or high on the beach and in different sections along the beach). This not only helps to avoid completely losing their reproductive effort in case environmental factors (such as storms, temperature, and sand conditions) or other incubation factors preclude development of the embryos, but it also varies the incubation environment of the eggs. In addition to sex ratio, the incubation environment has also been shown to influence among other things size, early swimming behavior, and early growth in hatchlings (Foley et al. 2006). Because the characteristics of hatchlings vary with incubation environments, a scattered nesting pattern also increases the variation of hatchling characteristics. This variation ensures that, at all times, at least some hatchlings have characteristics that are appropriate for survival. The exact characteristics that are best suited for survival vary unpredictably over space and time (Carthy et al. 2003). Relocating nests and/or concentrating them in one area of a beach (e.g., hatchery or corral areas) may very well reduce the variety of incubation environments that could influence the development of hatchling characteristics that increase survival rates (Foley et al. 2006).

In addition, handling eggs can result in increased hatch failure. When relocating nests, there is always a risk of disrupting the membranes inside the eggs, which can kill the embryos. Typically, a blanket policy of routinely relocating all or most turtle nests is seen as part of an intensive management effort to keep the species from going extinct, whereas allowing for natural breeding and nesting is the preferred option whenever available. The revised Loggerhead Sea Turtle Recovery Plan (NMFS and USFWS 2008) recommends the use of the least manipulative method to protect nests and states that as a general rule, nests should only be relocated if they are low enough on the beach to be washed daily by tide or if they are situated in well documented high-risk areas that routinely experience serious erosion and egg loss. Currently in North Carolina, the state permits sea turtle nest relocations for research or when there is an imminent threat and potential loss of the nest due to erosion or frequent flooding, but not to accommodate recreational uses. Nests in some states may be moved to avoid damage from beach nourishment or in highly developed urban areas (e.g., along some urban areas of Florida's Atlantic Coast). None of these special conditions apply at the Seashore. Consequently, routine relocation of all nests to allow for recreational access is not considered in this plan/EIS. However, the NPS would continue its current practice of coordinating with the State of North Carolina to consider relocating an individual nest facing inundation or other adverse factors.

Turtles – Use Turtle Hatcheries. Moving all nests or all relocated nests into one hatchery area is not fully analyzed as part of any alternative. Sea turtle nests may be moved to a guarded hatchery to provide needed protection from poaching in developing countries where participation in hatchery operations may be used as an eco-tourism opportunity. Some county or privately owned beaches in Florida or Georgia may use hatcheries for sea turtle eggs in some circumstances, such as to allow beach nourishment. However, county responsibilities for endangered or threatened species differ from federal, and particularly from NPS, responsibilities for these protected species. As a federal agency, the NPS has responsibilities under the ESA to protect the ecosystem as well as the species that depend on it. The purpose of the ESA is to “provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved” (sec. 2(b)). Protecting the ecosystem is also necessary to meet the requirements of the *Organic Act*, which mandates the NPS to conserve Seashore wildlife (refer

to the “Other Applicable Federal Laws, Policies, Regulations and Plans” section in chapter 1 of this document).

Loggerhead sea turtles, the predominant nester at the Seashore, as well as leatherback and green sea turtles are all currently listed pursuant to the ESA. Any actions that would likely reduce productivity and cause a decline in the species would not be consistent with the purpose of the Act. The revised Loggerhead Sea Turtle Recovery Plan (NMFS and USFWS 2008) recommends the discontinuance of the use of hatcheries as a nest management technique and states that relocating nests into hatcheries concentrates eggs in an area and makes them more susceptible to catastrophic events and predation from both land and marine predators. It also can increase the potential for disease, such as fungal problems, to spread to all nests and result in egg mortality. Using corrals also usually results in hatchlings being released in the same location. This has the potential to increase predation in the ocean area surrounding the release site after the hatchlings reach the water. Therefore, use of hatcheries was not considered in this plan/EIS.

Modify the Turtle Program

During public comment on the draft plan/EIS, commenters recommended modifying the turtle program to include nest relocation (discussed above), the use of volunteers (discussed below), different predator management techniques, varying buffer sizes, and varying the type of data collected for sea turtles. Under alternative F, sea turtle management procedures at the Seashore are based on the latest scientific research, and are consistent with the most current USFWS Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea Turtle (NMFS and USFWS 2008) and NCWRC guidelines (NCWRC 2006). Both documents have been developed by scientific experts in the field of loggerhead sea turtle biology and conservation. Additional information on why these elements were not carried forward can be found in “Appendix C: Concern Response Report” (see response to Concern ID 24193, 24143, and 24233).

Additions to the Shorebird Monitoring Program and Data Collection

During public comment on the draft plan/EIS, commenters recommended additions to the Seashore’s bird monitoring and data gathering procedures including recording the GPS location for banded birds, that scopes be used rather than binoculars, use of experimental design comparing bird populations in areas open or closed to vehicles, and discontinuing use of the Southeast Coast Network (SECN) protocol for monitoring. A suggestion was also made that nonbreeding surveys be designed to occur at multiple distinct tidal stages. For the following reasons, NPS would continue to do what it has been doing for the nonbreeding shorebird surveys. First, SECN is the NPS Southeast Regional Office Inventory and Monitoring Program data collection arm, and it is appropriate for the Seashore to follow their technical guidance on monitoring methodology. Second, data collection techniques do not include larger transects because the counts are not meant to count every single bird, but are designed to show trends over time. Trends over time can be monitored without counting every bird. Third, the current transects are timed transects, which means they cannot be interrupted to obtain band data. Finally, the recently signed MOU between the USFWS and the NPS

(<http://www.fws.gov/migratorybirds/Partnerships/NPSEO13186Signed%204.12.10.pdf>) commits NPS to working with its Inventory and Monitoring Program, of which SECN is a part, for migratory bird data collection.

Implement a Volunteer Program to Assist with Species Protection

During public comment on the draft plan/EIS, some commenters recommended the Seashore use volunteers to implement a range of species management measures such as monitoring nesting activity, a beach watch program, and vehicle escorts. The primary purpose of the NPS volunteers in parks program is to use volunteer help that is mutually beneficial to the NPS and the volunteer. The NPS recognizes the importance of encouraging stewardship through volunteer opportunities and will use volunteers when deemed appropriate and resources are available to run such a program. The NPS will work at integrating volunteers back into the less sensitive aspects of the species monitoring program. At this time, NPS believes that the best use of volunteers for species protection activities would be in a trained volunteer program for watching sea turtle nests that have reached their hatch windows to monitor hatchling emergence and success reaching the water, and to inform the public on ways to minimize negative impacts from artificial lighting, predation, and human disturbance. This program should enhance protection and encourage ownership/stewardship of resources among the public, and provide a beneficial situation for both the NPS and the volunteers. However, at this time, with the current controversy over ORV and protected species management, using volunteers to act as vehicle escorts or to monitor nesting activity (such as the morning sea turtle patrol) is not feasible as an alternative element because actions taken by trained park staff are so closely scrutinized and criticized and the NPS would not want to ask volunteers to be responsible for implementing controversial on-site activities or decisions.

Create an Oversight Committee with External Experts and Scientists

Creating an oversight committee with external experts and scientists under the *Federal Advisory Committee Act* (FACA) has been considered but dismissed as a reasonable alternative for further analysis. FACA restricts the establishment of such committees to situations “when they are determined to be essential” (FACA sec 2(b)(2)). The creation of the suggested oversight committee is not “essential.” In its practical application, a FACA committee would be mostly redundant with the current NPS process of seeking scientific and technical consultation or advice as required or appropriate from species scientific experts in other agencies, organizations, and academia. Additionally, the significant administrative costs in staff time and money incurred in establishing and maintaining a FACA committee are not warranted when the needed scientific advice can be obtained less expensively and more efficiently. Based on the recent NPS experience with the negotiated rulemaking committee, established under FACA, the suggested oversight committee would not be likely to provide the NPS with clear and consistent, actionable advice, and managing the committee would require a commitment of staff time that could not be sustained over the life of the plan.

Open All Closed Areas after Breeding Season Is Over

Commenters suggested that all closed areas should be reopened after the breeding season ends. Most closed areas would likely be reopened after the breeding season if the areas do not provide important migrating and wintering habitat for Seashore populations of protected species. Therefore, some areas may be reopened, but automatically opening all closed areas after the breeding season would be inconsistent with the Seashore’s responsibility under various statutes, including its enabling legislation, the *Organic Act*, the ESA, the MBTA, and the NPS *Management Policies 2006*, section 4.4.2.3. The alternatives in the plan/EIS do consider various ways to address resource-based closures, but the alternatives do not allow for automatic opening after the breeding season is over if species are still present.

Create New Habitat

Commenters suggested various ways that habitat could be created to provide alternative areas for bird species at the Seashore. Some of these suggestions included letting ORVs drive on the vegetation to

create habitat or physically creating habitat using dredge material in the sound or by other means. These suggestions were considered by the Seashore but are not carried forward in this plan/EIS for the following reasons:

- **Allow visitors in ORVs to enhance habitat by driving over vegetated areas.** It has long been documented that even a low level of ORV use can cause severe degradation of coastal vegetation (Leatherman and Godfrey 1979). The Seashore recognizes that ORV use at certain locations could be an effective way to manage the encroachment of vegetation into existing shorebird nesting habitat. However, use of ORVs to create new habitat implies a large-scale use of vehicles to remove vegetation, which is typically protected under various NPS regulations and under the Executive Orders on ORV use. While removal of vegetation by any means to create new habitat may be appropriate and beneficial in certain circumstances, such a project would need to be planned, implemented, and studied by scientists or resource managers with the appropriate expertise. Therefore, allowing visitors in ORVs to create habitat was not considered in this plan/EIS.
- **Create habitat through physical alteration or the creation of dredge islands.** The NPS considered creating habitat through various methods. Based on the experience of staff at the NCWRC, habitat-creation projects tend to be short-lived and labor intensive. Based on experience with hand pulling, herbicides, fires, and bulldozing, it was found that most of these techniques are effective for only one season before the vegetation returns. Covering areas with new dredge material has been shown to last longer, with vegetation returning after four to seven years (Cameron pers. comm. 2007). Although the NPS recognizes that creation of habitat may be viable under certain circumstances, it is not an appropriate substitute for providing adequate protection of existing habitat. If this method is employed, it would occur outside the scope of the plan/EIS and therefore was not included in the alternatives.

Fence Chicks Away from the ORV Corridor

Commenters suggested using barrier fencing, rather than symbolic fencing, to keep chicks away from the ORV corridors. Unfledged piping plover and American oystercatcher chicks need access to the intertidal zone and moist substrate habitat for foraging and chicks of all beach nesting bird species may utilize those same areas for thermal regulation. Fencing chicks away from these areas would essentially reduce their chances of survival; therefore, this was not considered a reasonable alternative.

Do Not Provide Protection to the Seabeach Amaranth

Commenters suggested that seabeach amaranth is a “farmed” plant and should not be offered special protection. However, the seabeach amaranth is protected as a federally listed threatened plant species. Under the ESA, federal agencies are required to use their authority in furtherance of the purposes of the ESA by carrying out programs for the conservation of endangered and threatened species and to ensure that any agency action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat. Further, NPS *Management Policies 2006* state that “the Service will survey for, protect, and strive to recover all species native to national park system units that are listed under the *Endangered Species Act*” (NPS 2006c). The management policies also state that the NPS will “successfully maintain native plants and animals by preserving and restoring the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant and animal populations and the communities and ecosystems in which they occur; restoring native plant and animal populations in parks when they have been extirpated by past human-caused actions; and minimizing human impacts on native plants, animals, populations, communities, and ecosystems, and the processes

that sustain them.” Not providing protection to a federally listed threatened species would be out of compliance with the ESA and contrary to the NPS *Management Policies 2006*, and was therefore not included in the alternatives of this plan/EIS.

Give Special Consideration only to Flora and Fauna Listed as Threatened or Endangered

Commenters suggested that only those species listed as threatened or endangered under the federal ESA should be considered in this plan/EIS. As stated above, the NPS has legal responsibilities under the ESA and its own policies to protect threatened and endangered species. Further, a number of laws, regulations, and policies, in addition to the ESA, guide species management at the Seashore, including the *Organic Act*, the MBTA, NPS regulations and policies, Executive Orders 11644 and 11989: Use of Off-Road Vehicles on the Public Lands (see chapter 1), Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds, and others (see chapter 1). Executive Order 11644 provides that areas designated for ORV use shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. NPS *Management Policies 2006* section 4.4.2.3 states, in part, that the NPS will inventory, monitor, and manage state- and locally listed species in a manner similar to its treatment of federally listed species to the greatest extent possible. In addition, the NPS will inventory other native species that are of special management concern to parks (such as rare, declining, sensitive, or unique species and their habitats) and will manage them to maintain their natural distribution and abundance. The combination of laws, regulations, and policies included in this section of the plan/EIS create the framework in which the alternatives are developed, which includes the need to manage species that are considered to be of special concern, such as state-listed species, or those addressed by the MBTA. Because of these responsibilities, only considering flora and fauna listed as federally threatened or endangered was not included in the plan/EIS alternatives.

OTHER ISSUES

Rebuild the Dunes

One commenter suggested the NPS rebuild the dunes in front of NC-12. While the NPS had engaged in dune rebuilding activities in the past, such as to protect NPS structures on Bodie Island, this activity is beyond the scope of this plan/EIS and could be addressed later in the general management plan process that the Seashore will undertake in the future.

Prohibit Gill Net Fishing

Some commenters asked that the Seashore prohibit gill net fishing. Fishing activities, both commercial and recreational, require a Standard Commercial Fishing License or a Recreational Commercial Gear License from the state of North Carolina. The license and related state fishing regulations specify the type of nets that commercial fishermen are allowed to use, which includes the use of gill nets that conform to requirements for mesh size, yardage, and marking (NCDMF 2009). The type of gear used by commercial fisherman is outside the scope of this plan; therefore, it was not included as an element of the plan/EIS.

Provide an Area for Off-Leash Dogs

Commenters suggested that dogs be allowed off leash at the Seashore, either seasonally, in certain areas of the Seashore under voice control, or through the creation of a dog-training area. Currently, pets at the Seashore are regulated under 36 CFR 2.15, which applies to all units of the national park system and prohibits pet owners from “failing to crate, cage, restrain on a leash which shall not exceed 6 feet in length, or otherwise physically confine a pet at all times.” Creation of off-leash areas would not be

consistent with 36 CFR 2.135 and would require its own planning process and promulgation of a special regulation allowing off-leash dog use, which is outside the scope of the plan/EIS.

CONSISTENCY WITH THE PURPOSES OF NEPA

The NPS requirements for implementing NEPA include an analysis of how each alternative meets or achieves the purposes of NEPA, as stated in sections 101(b) and 102(1). Each alternative analyzed in an EIS must be assessed as to how it meets the following purposes:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
2. Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
4. Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.
5. Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

CEQ Regulation 1500.2 establishes policy for federal agencies' implementation of NEPA. Federal agencies shall, to the fullest extent possible, interpret and administer the policies, regulations, and public laws of the United States in accordance with the policies set forth in NEPA (sections 101(b) and 102(1)); therefore, other acts and NPS policies are referenced as applicable in the following discussion.

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

As noted in the analysis, alternatives B, C, D, E, and F provide increased protection for sensitive species at the Seashore, through increased resource protection buffers and limitations on recreational access. Limitations on access would not only benefit threatened, endangered, and special status species, but would also provide protection to other physical resources at the Seashore such as wetlands, vegetation, and other wildlife.

Alternative D would provide year-round SMAs that would limit recreational access in these areas, particularly during the breeding season, and would offer the greatest level of species protection among the action alternatives. Through these access limitations, as well as other provisions such as seasonal night-driving restrictions and the implementation of a permit system that would provide user education and increase awareness alternative D would fully meet the purpose of fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations, by providing the greatest potential for the survival of sensitive species in the long term, while at the same time protecting other physical resources of the Seashore. Alternatives C, E, and F would meet this purpose to a large degree but not fully because of greater potential for impacts to sensitive species from human disturbance as shorebird breeding habitat in some locations would include pedestrian or ORV access corridors, thereby increasing recreational

access to these sensitive areas. Alternatives E and F would not offer the same level of seasonal night-driving restrictions, with less hours closed each night, providing a somewhat lesser level of protection than alternatives C and D. Further, providing opportunities for access either through park-and-stay or SCV camping under alternative E would also increase recreational access, introducing potential disturbance to protected species, as well as other physical resources at the Seashore.

Alternative B would only meet this purpose to a moderate degree, as seasonal night-driving restrictions would offer the species additional protection, but without the SMAs, the proactive restriction of recreation would not be in place and could result in long-term threats to sensitive species from recreational use. Alternative A would only meet this purpose to some degree as there would be no seasonal night-driving restrictions and buffers would require frequent adjustments to provide adequate protection, thereby not providing optimal protection for the species.

2. Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.

All alternatives meet this purpose to some degree because the Seashore is a safe visitor destination that is both esthetically and culturally pleasing. The action alternatives (alternatives C, D, E, and F) increase safety by establishing a 15 mph speed limit within the entire Seashore. For pedestrian user groups, the establishment of vehicle-free areas, particularly under alternative D, may provide the greatest safety and esthetic benefits as pedestrian and vehicular uses would be separated. However, alternative D does not establish any safety closures although most areas historically closed for safety reasons would be closed under alternative D. Alternative F would provide additional safety benefits by establishing right-of-way requirements and additional speed limit reductions when pedestrians are present. Also under the action alternatives, the designation of ORV routes and vehicle-free areas would reduce the potential for, as well as the perception of, visitor conflict issues. Although actual visitor conflicts may not always happen when these two uses occur in the same area, providing vehicle-free areas would eliminate the potential for conflicts in those areas and address the feeling of those who perceive there could be a conflict or other safety issue. Of all the alternatives, alternative A would meet this purpose to the least degree, as it would not separate vehicular and pedestrian uses to the degree that the action alternatives would, and off-season speed limits would remain at 25 mph. Likewise, alternative B lowers speed limits, but still does not provide separation of uses and would not address any perceived safety or conflict issues associated with having ORV and non-ORV use in the same area. Although alternatives C, D, and E would meet this purpose to a large degree, alternative F would fully meet this purpose by establishing a reduced speed limit, providing some level of pedestrian and vehicular separation, and establishing right of way requirements not present in the other alternatives.

3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.

All alternatives offer a wide range of visitor use opportunities, including vehicular use, recreational fishing, swimming, walking, sunbathing, other general beach recreation, and commercial fishing. However, the intensity of recreational use allowed under a particular alternative could lead to resource degradation or risks to health and safety. Alternative A allows the most intense levels of ORV and pedestrian use that could potentially lead to environmental degradation and safety concerns and only meets this purpose to some degree. Alternative B provides additional protection of natural resources through the establishment of larger buffers and

restrictions on night driving for sea turtle protection. However, this alternative does not directly address the level of recreational use and any safety or environmental concerns that may be associated with increasing visitor use patterns. Under alternative B, which bases closures on species behavior, there is the potential for large areas of the Seashore to be closed and these areas would vary from season to season based on protected species breeding behavior. Therefore, alternative B meets this purpose to a moderate degree due to added protection for sensitive species, but does not meet it to a larger degree because the provision of other uses of the Seashore would be unpredictable. Action alternatives C, D, and E include the establishment of SMAs, while alternative F relies on prenesting closures and standard buffers when breeding activity is observed, to reduce the disturbance of sensitive species habitat. These measures, combined with increased resource protection buffers, reduced speed limits, some measure of separation of vehicular and pedestrian uses, and methods for establishing a carrying capacity to reduce the environmental and safety concerns associated with large numbers of vehicles and pedestrians in one area. Therefore, all action alternatives would meet the intent of this purpose to a moderate or large degree. However, alternative D would reduce the potential for environmental impacts and visitor conflicts by prohibiting vehicles in all SMAs year-round. Therefore, alternative D would fully meet this purpose.

4. Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

Because none of the alternatives would result in impacts to cultural or historic resources that would exceed minor, these topics were dismissed from further analysis in this plan/EIS. Overall, since any impacts to cultural or historic resources would not exceed minor, all alternatives would preserve important historic and cultural aspects of our national heritage in the long term and would meet this purpose to a large degree, with alternatives that restrict recreational access seasonally and at night (alternatives B, C, D, E, and F), meeting it for natural resources to a larger degree than alternative A. As discussed under criteria 1 and 2, due to use restrictions, alternatives C, D, E, and F would better protect resources, which would in turn support diversity, and due to the separation of visitor uses and addition of visitor amenities, would better support a variety of individual choices than alternatives A and B.

5. Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.

Balancing population and resource use under the plan/EIS would include protecting the resources unimpaired for the enjoyment of present and future generations and providing access for visitors to experience the natural resources of the Seashore. NPS *Management Policies 2006* states that the enjoyment that is contemplated by the *Organic Act* is broad; it is the enjoyment of all the people of the United States and includes enjoyment both by people who visit parks and by those who appreciate them from afar. It also includes deriving benefit (including scientific knowledge) and inspiration from parks, as well as other forms of enjoyment and inspiration. Congress, recognizing that the enjoyment by future generations of the national parks can be ensured only if the superb quality of park resources and values is left unimpaired, has provided that when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant. As discussed above, alternatives C, D, E, and F would provide species management strategies that include prenesting areas, standardized buffers when breeding activities are observed, and seasonal night-driving restrictions, as well as implementation of a permit system, all of which are expected to benefit the natural resources at the Seashore and would provide an amenity (resources) for visitors to experience that would permit a high standard of living. All of the alternatives evaluated would allow some level of access to the Seashore that

would contribute to the sharing of these amenities. As visitation to the Seashore increases and the population of the area continues to increase, having areas with designated resource closures under the action alternatives would contribute to the protection of the Seashore's natural resources.

Given this, alternatives A and B would meet this purpose to some degree because they would provide the public access to share these amenities, but would not offer a high level of protection to natural resources. Without a higher level of protection, these amenities may not be available for the enjoyment of future generations.

Alternatives C and E would provide access to the Seashore and the amenities therein, and offer protection of these amenities by establishing SMAs and by implementing seasonal night-driving restrictions. In alternatives C and E, some of the SMAs would be under ML2 management measures, which would provide a higher level of access and use to those areas (including ORV and pedestrian corridors). Alternative F would provide access to the Seashore and the amenities therein, and would protect sensitive wildlife habitat through the designation of year-round ORV routes and vehicle-free areas, the use of prenesting closures in some locations, and standard buffers (similar to ML2) in all locations, and by implementing seasonal night-driving restrictions. Under alternatives C, E, or F, allowing this level of use, particularly as the population grows, may not fully protect the natural resources at the Seashore. As access to certain areas of the Seashore may adversely impact some of the Seashore's natural resources, especially in light of population growth, alternatives C, E, and F would only meet this purpose to a moderate degree.

Alternative D would meet this purpose to a large degree by establishing SMAs that are closed to ORV use and pets year-round, and pedestrians during the breeding season. Establishing these areas, year after year, would ensure a level of protection that would allow the natural resources to remain amenities that contribute to a high standard of living, while providing a level of access to the Seashore beaches that would ensure that the visiting public would be able to share these amenities.

6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

For reasons discussed above, in varying degrees the action alternatives (alternatives C, D, E, and F) would enhance the quality of the Seashore's biological and physical resources. Alternative B also provides a greater level of protection for these resources than alternative A. The second purpose, "approach the maximum attainable recycling of depletable resources," is less relevant to an ORV management plan, as it is geared toward a discussion of "green" building or management practices. There would be no construction related to the no-action alternatives, so this purpose would not apply. The action alternatives would involve the construction of new ramps and parking areas using environmentally appropriate design standards to minimize stormwater runoff. Ramps would be constructed of a semi-permeable natural clay/shell base.

However, as discussed in chapter 1 of this document, each of the alternatives would require that the Seashore continue to operate under the wise energy use guidelines and requirements stated in the NPS *Management Policies 2006*; Executive Order 13123, Greening the Government Through Effective Energy Management; Executive Order 13031, Federal Alternative Fueled Vehicle Leadership; Executive Order 13149, Greening the Government Through Federal Fleet and Transportation Efficiency; and the 1993 NPS Guiding Principles of Sustainable Design and therefore would fully meet this purpose.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The NPS is required to identify the environmentally preferable alternative in its NEPA documents for public review and comment. The NPS, in accordance with the U.S. Department of the Interior policies contained in the Department Manual (515 DM 4.10) and CEQ's Forty Questions, defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in NEPA (section 101(b)) (516 DM 4.10). The CEQ's Forty Questions (Q6a) further clarifies the identification of the environmentally preferable alternative stating, "this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources."

Alternative D was identified as the environmentally preferable alternative because it bests protects the biological and physical environment by

- Providing SMAs in known breeding/nesting areas throughout the Seashore, all under ML1 management. Specifically, these SMAs would provide the following:
 - A proactive way to protect large areas of the Seashore where protected species are known to breed and nest by prohibiting ORV use and pets in these areas year-round and only allowing pedestrian access outside of the breeding season.
 - The greatest level of spatial and temporal protection through the establishment of SMAs that are all managed under ML1 procedures year-round.
 - A benefit to wintering bird populations at the Seashore that would also utilize the large vehicle-free areas provided under the SMAs for alternative D.
 - Buffers around those species found breeding/nesting outside the SMAs, further offering protection to protected species and species of concern at the Seashore.
 - Large, year-round ORV-free areas that would benefit other protected species, including sea turtles and seabeach amaranth.
 - A level of predictability to ORV users at the Seashore that would be expected to decrease the level of non-compliance with species management measures.
- Including seasonal night-driving restrictions in areas where ORVs are permitted that would restrict nighttime use from 7:00 p.m. to 7:00 a.m. from May 1 to November 15. The seasonal duration of the closures, as well as the length of the nightly closure, would offer protection to sea turtles nesting and hatching during that time, and allow Seashore staff the time to record and document nests each morning, decreasing the possibility of undiscovered nests.
- Minimizing the extent and location of interdunal roads, ramps, or parking lots that would be added, further minimizing disturbance under this alternative, when compared to alternatives C, E, and F.
- Implementing a permit system to provide ORV users with education that is expected to decrease the level of non-compliance related to resource closure areas.

Overall, establishing SMAs that are closed year-round to ORVs and pets, and closed to pedestrians during the breeding season, along with seasonal night-driving restrictions beginning at 7:00 p.m., the least amount of construction of all the alternatives, and required buffers for all protected species found outside the SMAs, would best protect, preserve, and enhance the Seashore's resources.

NATIONAL PARK SERVICE PREFERRED ALTERNATIVE

To identify the preferred alternative, the planning team evaluated each alternative based on its ability to meet the plan objectives (see table 12) and the potential impacts on the environment (see chapter 4 of this document). Alternative F was identified as the NPS preferred alternative. Based on public and agency comments received on the draft plan/EIS, the NPS has revised the preferred alternative as described in this document (the final plan/EIS).

Both alternatives D and F would meet most of the plan objectives either fully or to a large degree. In terms of species protection, both alternatives would provide the necessary buffers, as well as the proactive establishment of prenesting areas and protection of breeding and nonbreeding shorebird habitat. Seasonal night-driving restrictions would be similar under both of these alternatives, offering comparable protection to sea turtles and foraging bird species. However, alternative F was chosen as the preferred alternative because it would provide not only effective resource protection but also would provide Seashore visitors with more diverse options for access and recreational use. Providing approximately 26 miles of the Seashore that are designated vehicle-free areas year-round, while 28 miles are open to ORV use year-round (subject to resources closures), would provide for a greater diversity of visitor use. Although designation of all SMAs as year-round ORV closures under alternative D would provide the necessary resource protection, the use of ML1 buffers in all SMAs would preclude all visitor access in these areas during the breeding season. If protected species do not use portions of the SMAs or if conditions of the Seashore change and habitat changes, alternative D does not provide as much flexibility for the Seashore to manage visitor access as alternative F, which provides for designated ORV routes that would remain open unless protected species activity results in a resource closure. In addition to providing species protection both during the breeding and nonbreeding seasons, alternative F would also provide more flexibility and range of experience for visitor use and would enhance access to both vehicle-free areas and designated ORV routes by establishing strategically located new parking areas, pedestrian trails, interdunal routes, and ORV ramps. Because alternative F provides for a greater variety of uses throughout the Seashore, it would have less of an impact on the socioeconomics of the area as well. As detailed in the impact analysis in chapter 4, alternative D would have greater impacts to the economy of the villages within the Seashore. In addition, alternative F also would mitigate the potential economic and visitor impacts by encouraging alternative forms of access (water taxi and beach shuttle) to certain popular areas during times when they may be open for pedestrian use, but the access to the area may be closed due to a resource closure. By providing an alternate means for accessing these areas, beneficial economic impacts would be expected. Alternative F is also selected as the NPS preferred alternative because it incorporates some concepts and measures that originated in or were discussed during the negotiated rulemaking process, providing more public input. For these reasons, alternative F was selected as the preferred alternative.

Alternatives C and E would meet the objectives from a moderate to a large degree, but to a lesser degree when compared to alternative D because of the larger areas of recreational access allowed. By allowing more access to various areas of the Seashore during the breeding season of threatened, endangered, and species of special concern, the level of protection offered to these species would be less than alternative D.

Alternatives A and B, on the whole, would meet the objectives from some degree to a moderate degree. These alternatives would not meet key objectives (such as those related to providing protection for threatened and endangered species and minimizing impacts to other natural resources at the Seashore) as well as the action alternatives. Because these alternatives would not meet the objectives to a large degree, they were not selected as the preferred alternative.

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Table 7. Off-Road Vehicle Routes and Areas – Alternatives A, B, C, D, and E

TABLE 7. OFF-ROAD VEHICLE ROUTES AND AREAS – ALTERNATIVES A, B, C, D, AND E

| Oceanside Location | Mileage ^a | Alternatives A and B: No Action | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management |
|---|----------------------|---|--|---|---|
| Bodie Island (north to south) Ramp 1 to north end of Coquina Beach | 0.9 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). | ORV route—Mar 15 to Oct 14 VFA—Oct 15 to Mar 14 | X | X Parking at ramp 1 expanded. |
| North end of Coquina Beach to 0.5 mile south of Coquina | 0.8 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). South of ramp 2 at Coquina Beach open seasonally. | X Ramp 2 relocated approx. 0.5 mile south of Coquina Beach. | X Ramp 2 relocated approx. 0.5 mile south of Coquina Beach. | X Ramp 2 relocated approx. 0.5 mile south of Coquina Beach. Parking at Coquina Beach expanded. |
| 0.5 mile south of Coquina to 0.2 mile south of ramp 4 (Includes beach in front of Oregon Inlet Campground. If Bonner Bridge construction closes ramp 4, new ramp 3 will be constructed north of campground and day-use parking and trailhead near campground will be provided.) | 2.1 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR ORV pass-through zone established on upper beach in front of campground when campground is open. |
| 0.2 mile south of ramp 4 to inlet to southwest edge of Bait Pond (Species Management Area) | 1.9 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 Area closed to ORVs from March 15 to October 14. When prenesting area is established, a pedestrian access corridor would be allowed along ocean shoreline to the inlet. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. (ML2) | X (ML1) | ORV route YR With expected limited access Mar 15 to Aug 31 When prenesting area is established, ORV corridor with pass-through zone would be allowed along ocean shoreline to the inlet. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. Pedestrian trail to inlet from new parking near campground established. Trail subject to resource closures. NPS would allow water taxi service to spit from Oregon Inlet Fishing Center, subject to designated landing zone and to resource closures. (ML2) |
| Hatteras Island (north to south) Rodanthe–Waves–Salvo to ramp 23 (includes Tri-Village beaches) | 5.3 | OPEN ^b Seasonally closed May 15 to Sep 15. | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 Parking at ramp 23 expanded. | X | ORV route—Nov 1 to Mar 31 VFA—Apr 1 to Oct 31 Parking at ramp 23 expanded. |
| Ramp 23 to ramp 27 | 4.3 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR One new ramp with parking established at 24 or 26. |
| Ramp 27 to ramp 30 (Species Management Area) | 2.2 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | X (ML1) |
| Ramp 30 to (new) ramp 32.5 | 2.5 | OPEN YR ^b | ORV route YR New ramp with parking established at 32.5. | ORV route YR New ramp established at 32.5. | ORV route YR New ramp with parking established at 32.5. |
| (New) ramp 32.5 to ramp 34 (Species Management Area) | 1.8 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | ORV route—Sep 1 to Mar 14 VFA—Mar 15 to Aug 31 (ML1) |
| Ramp 34 to ramp 38 (includes Avon Village Beach) | 3.9 | OPEN ^b Seasonally closed May 15 to Sep 15. | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 | X | ORV route—Nov 1 to Mar 31 VFA—Apr 1 to Oct 31 Parking at ramp 34 expanded. |
| Ramp 38 to approx. 1.7 miles south | 1.7 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR Parking at ramp 38 expanded. |
| Approximately 1.7 miles south of ramp 38 (i.e., Haulover) to Buxton line (Species Management Area) | 2.0 | OPEN YR ^b (Current 3.8-mile safety closure from 1.8 miles south of ramp 38 to 0.4 mile north of ramp 43.) | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | ORV route—Sep 1 to Mar 14 VFA—Mar 15 to Aug 31 (ML1) |

| Oceanside Location | Mileage ^a | Alternatives A and B: No Action | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management |
|--|----------------------|--|---|---|--|
| Buxton Village Beach to 0.4 mile north of ramp 43 | 1.9 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). | X NPS or Dare County to establish new parking at old Coast Guard Station site (following Coast Guard clean-up of the site). | X | ORV route—Nov 1 to Mar 31 VFA—Apr 1 to Oct 31 NPS or Dare County to establish new parking at old Coast Guard Station site (following Coast Guard clean-up of the site). |
| 0.4 mile north of ramp 43 to ramp 43 | 0.4 | OPEN ^b Subject to seasonal closure May 15 to Sep 15. | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 | X | ORV route—Mar 15 to Aug 31 VFA—Sep 1 to Mar 14 Open to ORVs only when east side of Cape Point is closed. |
| Ramp 43 to 0.2 mile south of ramp 44 | 0.6 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| 0.2 mile south of ramp 44 to Cape Point to approx. 0.2 mile west of the hook (Species Management Area) | 1.0 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 When prenesting area is established, a pedestrian access corridor would be allowed along ocean shoreline to the point. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. (ML2) | X (ML1) | ORV route YR With expected limited access Mar 15 to Aug 31 When prenesting area is established, ORV access corridor with pass-through zone would be allowed along ocean shoreline to the point. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. (ML2) |
| Cape Point 0.2 mile west of the hook to ramp 45 (Species Management Area) | 1.2 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | ORV route—Sep 1 to Mar 14 VFA—Mar 15 to Aug 31 (ML1) |
| Ramp 45 to (new) ramp 47 (Species Management Area) | 1.7 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 Interdunal road extended and new ramp 47 established. (ML1) | X (ML1) | ORV route—Sep 1 to Mar 14 VFA—Mar 15 to Aug 31 Interdunal road extended and new ramp 47 established. (ML1) |
| (New) ramp 47 to ramp 49 (includes beach in front of Frisco Campground) | 1.7 | OPEN YR ^b | ORV route YR Interdunal road extended to ramp 49 and new ramp 48 established. | ORV route YR | ORV route YR ORV pass-through zone established on upper beach in front of campground (or bypass beach in front of campground via new interdunal road) when campground is open. Interdunal road extended west of new ramp 47 to ramp 49 and new ramp 48 established. |
| Ramp 49 to East Frisco boundary | 1.2 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| Frisco Village Beach (east village boundary to west boundary) | 1.1 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 | X | X Parking at day use area expanded. |
| Sandy Bay / Frisco day use area (west Frisco boundary to east Hatteras Village boundary) | 1.4 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 | X | X |
| Hatteras Village Beach (east boundary to ramp 55) | 2.2 | OPEN ^b Seasonally closed May 15 to Sep 15 (longstanding safety closure). | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 | X | X |
| Ramp 55 along ocean beach to 0.2 mile southwest of Bone Road | 1.8 | OPEN YR ^b | ORV route YR Parking expanded at ramp 55. | ORV route YR | ORV route YR Parking expanded at ramp 55. |
| Pole Road from NC-12 past Cable Crossing access to Spur Road | 2.3 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| Cable Crossing along sound shoreline to Spur Road | 0.8 | Varies | X | X | X |
| Spur Road along sound shoreline to Hatteras Inlet | 0.2 | OPEN YR ^b | ORV route YR Pedestrian access to the "rip" permitted from soundside during breeding season, subject to resource closures. | X | ORV route YR Pedestrian access to the "rip" permitted from soundside during breeding season, subject to resource closures. |

Table 7. Off-Road Vehicle Routes and Areas – Alternatives A, B, C, D, and E

| Oceanside Location | Mileage ^a | Alternatives A and B: No Action | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management |
|--|----------------------|---|---|---|---|
| Ocean shoreline from 0.2 mile southwest of Bone Road (a.k.a. Fort Clark Spur) to inlet (Species Management Area) | 1.0 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | ORV route—Sep 1 to Mar 14 VFA—Mar 15 to Aug 31 (ML1) |
| Ocracoke Island (north to south) Inlet to 0.25 mile northeast of ramp 59 (Species Management Area) | 1.1 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 Parking area at ramp 59 expanded. (ML1) | X (ML1) | Parking area at ramp 59 expanded. Pedestrian access corridor(s) provided, subject to resource closures during breeding season. Pedestrian boardwalk access from ferry terminal parking developed. (ML1) |
| 0.25 mile northeast of ramp 59 to 0.25 mile southwest of ramp 59 | 0.5 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| 0.25 mile southwest of ramp 59 to new ramp 62 at 3.0 miles northeast of Pony Pen area | 2.4 | OPEN YR ^b (Longstanding safety closure.) | ORV route YR | ORV route YR | ORV route YR |
| New ramp 62 to new ramp 64 at 1.0 mile northeast of Pony Pen | 2.0 | OPEN YR ^b (Longstanding safety closure.) | ORV route YR New ramps 62 and 64 established. Parking established at ramp 64. | ORV route YR New ramps 62 and 64 established. | ORV route YR New ramps 62 and 64 established. Parking established at ramp 64. |
| New ramp 64 at 1.0 mile northeast of Pony Pen to 0.75 mile northeast of ramp 67 | 2.3 | OPEN YR ^b (Longstanding safety closure.) | X Parking at Pony Pen expanded. | X | X Parking at Pony Pen expanded. |
| 0.75 mile northeast of ramp 67 to 0.5 mile northeast of ramp 68 | 1.4 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| 0.5 mile northeast of ramp 68 to 0.5 mile southwest of ramp 68 (Ocracoke Campground area) | 1.0 | OPEN YR ^b Seasonally closed when campground open. | Seasonal ORV route Open when campground closed. | X | ORV route—Nov 1 to Mar 31 VFA—Apr 1 to Oct 31 |
| 0.5 mile southwest of ramp 68 to 1.2 miles northeast of ramp 70 (Species Management Area) | 0.9 | OPEN YR ^b Seasonally closed when campground open. | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 (ML1) | X (ML1) | X (ML1) |
| 1.2 miles northeast of ramp 70 to 0.5 mile northeast of ramp 70 (includes Ocracoke day use area) | 0.8 | OPEN YR ^b Seasonally closed when campground open. | X | X | X |
| 0.5 mile northeast of ramp 70 to 0.5 mile southwest of ramp 72 | 2.7 | OPEN YR ^b | ORV route YR | ORV route YR | ORV route YR |
| 0.5 mile southwest of ramp 72 to inlet (Species Management Area) | 1.3 | OPEN YR ^b | ORV route—Oct 15 to Mar 14 VFA—Mar 15 to Oct 14 When prenesting area is established, a pedestrian access corridor would be allowed along ocean shoreline to the inlet. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. (ML2) | X (ML1) | ORV route YR With expected limited access Mar 15 to Aug 31 When prenesting area is established, ORV access corridor with pass-through zone would be allowed along ocean shoreline to the inlet. When shorebird breeding activity is observed, standard buffers would apply, which depending upon the circumstances could close the access corridor. NPS would also allow water taxi service to spit from Silver Lake, subject to designated landing zone and resource closures. (ML2) |
| Inlet shoreline along South Point | 1.0 | OPEN YR ^b | X | X | X |

| Oceanside Location | Mileage ^a | Alternatives A and B: No Action | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management |
|--------------------|----------------------|---------------------------------|------------------------------------|---|---|
|--------------------|----------------------|---------------------------------|------------------------------------|---|---|

NOTES: Details on soundside access provided in table 8. Due to updated base mapping, the shape of the inlets and spits was updated for alternative F maps, resulting in a slight difference in mileage between alternative F and the other alternatives (see table 7-1).

^a All mileages are approximate.

^b Area(s) open to ORV use, except when resource, seasonal, or safety closures are in effect.

Designated ORV routes and areas (ORV route = ORV permitted, X = VFA (vehicle-free area); YR = year-round).

All ORV routes and areas subject to temporary resource closures.

Species Management Areas (SMAs): ML1 and ML2 are the two proposed strategies for species management. See table 10 for a detailed description of these strategies. All areas outside of designated SMAs would be managed under ML1 protocols.

(ML1) Once prenesting closures are established, ORV and pedestrian access would be prohibited until breeding activity is completed.

(ML2) Once prenesting closures are established, ORV or pedestrian access corridor(s) and/or boat landing areas (as indicated in the respective alternatives) would be permitted. Upon the first observation of breeding activity, standard ML2 buffers would apply, which depending upon the circumstances may close the access corridor.

| Designated ORV Route Mileage (Approximate) ^f | Alternative A ^c | Alternative B ^c | Alternative C | Alternative D | Alternative E |
|---|----------------------------|----------------------------|---------------|---------------|---------------|
| Designated as ORV route YR | 49.4 | 50.1 | 27.4 | 27.2 | 31.6 |
| Designated for seasonal ORV use | 17.9 | 16.2 | 27.0 | 0 | 20.2 |
| Designated as Vehicle Free Area YR (X) ^e | 0 ^d | 1.0 | 12.9 | 40.1 | 15.5 |
| Total | 67.3 | 67.3 | 67.3 | 67.3 | 67.3 |

^c Routes under alternatives A and B have not been officially designated for ORV use. The mileages shown in this table are based on areas open to ORV use under the Interim Protected Species Management Strategy and the consent decree.

^d Does not include mileage closed for safety reasons.

^e Miles designated as closed to ORV year-round do not include the 12 miles at Pea Island National Wildlife Refuge where vehicles are not permitted. Including the mileage of Pea Island, areas designated closed to ORVs year-round would be as follows: Alternative C = 24.9; Alternative D = 52.1; Alternative E = 27.5

TABLE 7-1. OFF-ROAD VEHICLE ROUTES AND AREAS – ALTERNATIVE F

| Oceanside Location | Mileagea | Alternative F: Preferred Alternative |
|--|----------|--|
| Bodie Island (north to south) Ramp 1 to 0.5 miles south of Coquina Beach | 1.7 | X Parking at old Bodie Island Coast Guard Station site (use existing asphalt-paved parking area, or resurface using pervious material after site is used as a potential staging area for proposed widening and repaving of NC12) |
| 0.5 mile south of Coquina to 0.2 mile south of ramp 4 | 2.1 | ORV route YR New ramp with parking at 2.5. |
| 0.2 mile south of ramp 4 to southeast corner of Bodie Island spit | 1.1 | ORV route—Sep 15 to Mar 14 X—Mar 15 to Sep 14 New parking area and trailhead near ramp 4, with pedestrian trail to the “flats” on the northeast side of the Bait Pond. |
| Southeast corner of Bodie Island spit along inlet shoreline to southwest edge of Bait Pond (near bridge) | 0.8 | X |
| Hatteras Island (north to south) Rodanthe boundary to 0.1 mile south of Rodanthe pier | 1.6 | X |
| 0.1 mile south of Rodanthe Pier—Waves—Salvo to ramp 23 | 3.7 | ORV route—Nov 1 to Mar 31 X—Apr 1 to Oct 31 |
| Ramp 23 to 1.5 miles south of ramp 23 | 1.5 | X New parking 1.0 mile south of ramp 23. |
| 1.5 miles south of ramp 23 to ramp 27 | 2.8 | ORV route YR. New ramp with parking at 25.5. |
| Ramp 27 to ramp 30 | 2.2 | X New parking near soundside ramp 48. |
| Ramp 30 to (new) ramp 32.5 | 2.3 | ORV route YR |
| (New) ramp 32.5 to ramp 34 | 2.0 | X New parking near soundside ramp 52. |
| Ramp 34 to ramp 38 (includes Avon Village Beach) | 3.9 | ORV route—Nov 1 to Mar 31 X—Apr 1 to Oct 31 |
| Ramp 38 to 1.5 miles south of ramp 38 (i.e., Haulover) | 1.5 | ORV route YR |
| 1.5 miles south of ramp 38 (i.e., Haulover) to 0.4 mile north of ramp 43 (includes Buxton) | 4.1 | X New parking area on west side of highway at or near Kite Point New parking area on west side of highway at or near soundside ramp 60 NPS or Dare County to establish new parking at old Coast Guard Station site (following Coast Guard clean-up of the site) New parking area at Loran Road |
| 0.4 mile north of ramp 43 to Cape Point to 0.3 miles west of the hook | 2.1 | ORV route YR Existing interdunal road Cape Point south of Salt Pond at the narrows |
| 0.3 mile west of the hook (Cape Point) to 1.7 miles west of ramp 45 | 2.8 | X |
| 1.7 miles west of ramp 45 to the east Frisco boundary (includes ramp 49) | 2.9 | ORV route YR Interdunal road extended from ramp 45 to ramp 49, with new ramp 47.5. |
| Frisco Village Beach (east village boundary to west boundary) | 1.1 | ORV route—Nov 1 to Mar 31 X—Apr 1 to Oct 31 |
| Sandy Bay / Frisco day use area (west Frisco boundary to east Hatteras Village boundary) | 1.4 | X |

| Oceanside Location | Mileage ^a | Alternative F: Preferred Alternative |
|---|----------------------|---|
| Hatteras Village Beach (east boundary to ramp 55) | 2.2 | ORV route—Nov 1 to Mar 31 X—Apr 1 to Oct 31 |
| Ramp 55 along ocean beach to Bone Road | 1.6 | ORV route YR |
| Bone Road to Hatteras Inlet, along inlet shoreline to Spur Road | 1.0 | X |
| Pole Road from NC-12 to Spur Road | 2.3 | ORV route YR |
| Cable Crossing route (from Pole Road to sound) | 0.2 | ORV route YR |
| Spur Road route (from Pole Road to sound) | 0.4 | ORV route YR |
| (New) interdunal road from eastern portion of Spur Road west toward inlet | 0.2 | ORV route—Sep 15 to Mar 14 X—Mar 15 to Sep 14 |
| Ocracoke Island (north to south) | | |
| Inlet to (new) ramp 59.5 | 1.6 | X |
| (New) ramp 59.5 to (new) ramp 63 | 3.9 | ORV route YR New parking area on west/north side of the highway at or near the entrance to Barrow Pit Road |
| (New) ramp 63 to 1.0 mile northeast of ramp 67 | 2.5 | X |
| 1.0 mile northeast of ramp 67 to 0.5 mile northeast of ramp 68 | 1.7 | ORV route YR |
| 0.5 mile northeast of ramp 68 to ramp 68 (Ocracoke Campground area) | 0.5 | ORV route—Nov 1 to Mar 31 X—Apr 1 to Oct 31 |
| Ramp 68 to 0.4 miles northeast of ramp 70 (includes Ocracoke Day Use area) | 2.2 | X |
| 0.4 mile northeast of ramp 70 to Ocracoke Inlet (includes ramp 72) | 4.1 | ORV route YR |
| Inlet shoreline along South Point | 1.0 | X |

NOTES: Details on soundside access provided in table 8. Parking areas indicated above would be accessible to 2-wheel drive vehicles.

All mileages are approximate.

Designated ORV routes and areas (ORV route = ORV use permitted; X = VFA (vehicle-free area); YR = year-round).

ORV routes are subject to safety closures and temporary resource closures. VFAs are subject to temporary resource closures.

| Designated ORV Route Mileage (Approximate ^a) | Alternative F |
|--|-----------------|
| Designated as ORV Route YR | 27.9 |
| Designated for seasonal ORV use | 12.7 |
| Designated as vehicle-free area YR (X) ^b | 26.4 |
| Total | 67 ^c |

^a All mileages are approximate

^b Miles designated as vehicle-free area year-round does not include the 12-miles at Pea Island National Wildlife Refuge where vehicles are not permitted. Including the mileage of Pea Island, areas designated closed to ORVs year-round would equal 38.4 miles under alternative F.

^c Due to updated base mapping, the shapes of the inlets and spits were updated for maps of alternative F, resulting in a slight difference in mileage between alternative F and the other alternatives.

TABLE 8. SUMMARY OF ALTERNATIVE ELEMENTS

This matrix is designed to display differences among alternatives; therefore, actions common to all alternatives are not included in it. Refer to the "Elements Common to All Alternatives" section, which begins on page 56 of chapter 2.

| Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|--|---|---|--|--|--|
| ORV Routes, Use Areas, and Corridors | | | | | |
| <p>ORV use areas: All areas of the Seashore are potentially open to ORV access, except when closed as described in Superintendent's Order 7. Visitors accessing the Seashore by ORV must drive only on marked ORV routes and must comply with posted restrictions. Refer to table 7.</p> <p>ORV corridors: The ORV corridor on the ocean beach is marked by posts placed approx. 150 feet landward from the average, normal high tide line, or if less than 150 feet of space is available, at the vegetation or the toe of the remnant dune line, except as noted in the Interim Strategy. The corridor width will fluctuate over time due to the dynamic nature of beach and surf.</p> | <p>ORV use areas: Same as alternative A.</p> <p>ORV corridors: Same as alternative A, except: Mar 15 to Nov 30: In all locations not in front of the villages that are open to ORV use, NPS shall provide an ORV-free zone in the ocean backshore at least 10 meters wide, wherever there is sufficient beach width to allow an ORV corridor of at least 20 meters above the mean high tide line.</p> | <p>ORV routes: ORV access would be prohibited in all areas of the Seashore except where an ORV route is specifically designated. An ORV route is a designated location, typically linear in nature (e.g., from point A to point B), where ORV travel may be authorized by the Superintendent, but which may be temporarily closed to ORV use to protect Seashore resources, provide for visitor safety, or prevent user conflicts. Refer to table 7.</p> <p>ORV corridors: An ORV corridor is the actual physical demarcation of the ORV route in the field. The ORV corridor on the ocean beach would be marked by posts seaward of the toe of dune or vegetation line to the high tide line (the seaward side of the corridor would not be posted). ORV routes through vegetated areas, such as interdunal roads and ramps, would be posted on both sides of the corridor.</p> <p>Seasonally designated ORV routes: These would occur as indicated in table 7.</p> | <p>ORV routes: ORV access would be prohibited in all areas of the Seashore except where an ORV route is specifically designated. The definition of ORV route is same as for alternative C.</p> <p>ORV corridors: Same as alternative C.</p> <p>Seasonally designated ORV routes: No seasonal designations under this alternative.</p> | <p>ORV routes: ORV access would be prohibited in all areas of the Seashore except where an ORV route is specifically designated. The definition of ORV route is same as for alternative C.</p> <p>ORV corridors: Same as alternative C, except: Mar 15 to Aug 31: Where the ocean beach is at least 30 meters wide above the high tide line, the corridor would be posted 10 meters seaward of the toe of the dune to provide an ocean backshore closure.</p> <p>Seasonally designated ORV routes: These would occur as indicated in table 7.</p> | <p>ORV routes: ORV access would be prohibited in all areas of the Seashore except where an ORV route is specifically designated. The definition of ORV route is same as for alternative C.</p> <p>ORV corridors: Same as alternative C, except: Year-round: Where the ocean beach is at least 30 meters wide above the high tide line, the corridor would be posted 10 meters seaward of the toe of the dune to provide an ocean backshore closure.</p> <p>Seasonally designated ORV routes: These would occur as indicated in table 7-1.</p> |

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|---|--|--|--|---|---|
| VFAs and ORV Routes around Village, Campground, and Day Use Area Beaches | | | | | |
| <p>Village beaches, as identified below, are seasonally closed to ORV use from May 15 through Sep 15:</p> <ul style="list-style-type: none"> • Bodie Island from ramp 1 to 0.5 mile south of Coquina Beach. • Beaches fronting the villages of Rodanthe, Waves, Salvo, and Avon. • The beach fronting Buxton south to ramp 43. • Beaches fronting the villages of Frisco and Hatteras. <p>Ocracoke day use area and campground beaches: Ocracoke Island from 0.5 mile south of ramp 67 to 0.25 mile north of ramp 70 closed to ORVs when campground is open (approx. Apr 1 to Oct 31).</p> | <p>Same as alternative A, except: The beach from ramp 43 to 0.4 mile north is open to ORVs year-round.</p> | <p>Village, campground, and day-use beaches would be managed as follows (also described in table 7):</p> <p>Seasonally restricted ORV routes: (closed to ORVs Mar 15 to Oct 14, unless otherwise indicated)</p> <ul style="list-style-type: none"> • Rodanthe, Waves, Salvo, Avon, Frisco, and Hatteras Village beaches. • Ocracoke campground beach, from 0.5 mile northeast to 0.5 mile southwest of ramp 68 (closed to ORVs when campground is open, which is approx. Apr 1 to Oct 31). <p>VFAs year-round:</p> <ul style="list-style-type: none"> • Buxton beach S to 0.4 mile north of ramp 43. • Ocracoke day use area beach, from 1.2 miles northeast to 0.5 mile northeast of ramp 70. | <p>Village beaches would be managed as follows (also described in table 7):</p> <p>VFAs year-round:</p> <ul style="list-style-type: none"> • All village beaches would be vehicle free year-round. | <p>Village beaches would be managed as follows (also described in table 7):</p> <p>Seasonally restricted ORV routes: (closed to ORVs Apr 1 to Oct 31)</p> <ul style="list-style-type: none"> • Rodanthe, Waves, Salvo, and Avon beaches, and Buxton Beach south to 0.4 mile north of ramp 43. • Ocracoke Campground Beach, from 0.5 mile northeast to 0.5 mile southwest of ramp 68. <p>VFAs year-round:</p> <ul style="list-style-type: none"> • Bodie Island from ramp 1 to approx. 0.5 mile south of Coquina Beach. • Frisco and Hatteras Village beaches. <p>Ocracoke day use area beach, from 1.2 miles northeast (of ramp 70) to 0.5 mile northeast of ramp 70.</p> | <p>Village beaches would be managed as follows (also described in table 7-1):</p> <p>Seasonally restricted ORV routes: (closed to ORVs as indicated below)</p> <ul style="list-style-type: none"> • Rodanthe (south of the pier), Waves, Salvo, Avon, Frisco, and Hatteras Village beaches, and Ocracoke Campground Beach from 0.5 mile northeast to ramp 68 (closed to ORVs Apr 1 to Oct 31). • When village beaches are open to ORV use from November 1 through March 31, a safety closure would be implemented on portions of a village beach that are not consistently at least 20 meters (66 feet) wide during normal high tides. <p>VFAs year-round:</p> <ul style="list-style-type: none"> • Bodie Island from ramp 1 to approx. 0.5 mile south of Coquina Beach. • Rodanthe (north of the pier) • Buxton Beach south to 0.4 mile north of ramp 43. • Ocracoke day use area beach from ramp 68 to 0.4 mile northeast of ramp 70. |

Table 8. Summary of Alternative Elements

| Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|---|--|---|---|---|---|
| ORV Access | | | | | |
| <p>Oceanside access: ORV access is provided via 17 oceanside ramps and access points located off NC-12. Ramps are numbered and identified on the Seashore's ORV route map as official vehicle access routes. Seashore staff maintains ramps and signage.</p> | <p>Oceanside access: Same as alternative A.</p> | <p>Oceanside access: To provide access to the designated ORV routes and VFAs in addition to the existing ramps, which would be maintained, new or improved ramps would be developed as identified in table 7. Toilet facilities and trash receptacles would be provided at high use locations.</p> | <p>Oceanside access: Same as alternative C.</p> | <p>Oceanside access: Same as alternative C.</p> | <p>Oceanside access: To provide access to designated ORV routes, VFAs, and existing ramps, new ramps would be developed as identified in table 7-1.</p> |
| <p>Soundside access: ORV access is provided via 18 soundside access points located off NC-12. Seashore staff maintains ramps and signage.</p> | <p>Soundside access: Same as alternative A.</p> | <p>Soundside access: Existing soundside ramps would be designated as ORV routes and would remain open with sufficient maintenance to provide clear passage. Signage/posts would be installed at the primitive parking areas and boat launch areas to prevent damage to vegetation and other soundside resources.</p> | <p>Soundside access: Same as alternative A.</p> | <p>Soundside access: Soundside ramps to designated boat launch areas and Pole Road access to the sound via Cable Crossing and Spur Road would remain open. The remaining soundside ramps would be closed to ORV use and small parking areas would be constructed to provide pedestrian access to the water, except:</p> <ul style="list-style-type: none"> Existing Ocracoke Island access points north of village would remain open to commercial fishermen. <p>Signage/posts would be installed at the parking areas and boat launch areas to prevent damage to vegetation and other soundside resources.</p> | <p>Soundside access: Existing off-road soundside areas would be designated as ORV routes and would remain open with sufficient maintenance to provide clear passage. Signage/posts would be installed at the primitive parking areas and boat launch areas to prevent damage to vegetation and other soundside resources.</p> <p>Seasonal soundside access on Ocracoke Island (open Sept 15 – March 14):</p> <ul style="list-style-type: none"> ORV route 0.6 mile south of ramp 72 from the beach route to a pedestrian trail to Pamlico Sound. <p>ORV route at the north end of South Point spit from the beach route to Pamlico Sound.</p> |

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|--|---|--|---|---|---|
| <p>Interdunal roads: One-lane, interdunal routes have been designated as follows:</p> <p>Bodie Island District: None.</p> <p>Hatteras Island District:</p> <ul style="list-style-type: none"> • Cape Point between ramp 44 and ramp 45. • Hatteras Inlet from ramp 55 to the inlet (includes Pole Road, Cable Crossing, and Spur Road). <p>Ocracoke Island District: None.</p> | <p>Interdunal roads: Same as alternative A.</p> <p>Bodie Island District: Same as alternative A.</p> <p>Hatteras Island District:</p> <p>Same as alternative A, plus: Cape Point south of Salt Pond at the narrows.</p> <p>Ocracoke Island District: Same as alternative A.</p> | <p>Interdunal roads: Same as alternative A, plus:</p> <ul style="list-style-type: none"> • Existing interdunal roads would be better maintained as needed to provide access to ORV areas. Pullouts or road widening would be provided where appropriate to provide safe passage. <p>Bodie Island District: Same as alternative A.</p> <p>Hatteras Island District:</p> <p>Same as alternative A, plus: <ul style="list-style-type: none"> • Cape Point south of Salt Pond at the narrows. • South Beach: Extend interdunal road W of ramp 45 to ramp 49. Establish new ramps 47 and 48 off of interdunal road. </p> <p>Ocracoke Island District: Same as alternative A.</p> | <p>Interdunal roads: Same as alternative A.</p> <p>Bodie Island District: Same as alternative A.</p> <p>Hatteras Island District:</p> <p>From ramp 55 to Bone Road (a.k.a. Fort Clark Spur); includes Pole Road, Cable Crossing, and Spur Road.</p> <p>Ocracoke Island District: Same as alternative A.</p> | <p>Interdunal roads: Same as alternative C.</p> <p>Bodie Island District: Same as alternative A.</p> <p>Hatteras Island District:</p> <p>Same as alternative C.</p> <p>Ocracoke Island District: Same as alternative A.</p> | <p>Interdunal roads: Existing interdunal roads would be designated as ORV routes and be better maintained as needed to provide access to ORV areas. Pullouts or road widening would be provided where appropriate to provide safe passage.</p> <p>Bodie Island District: Same as alternative A.</p> <p>Hatteras Island District:</p> <p>Same as alternative A, plus:</p> <ul style="list-style-type: none"> • Cape Point south of Salt Pond at the narrows. • South Beach: Extend interdunal road W of ramp 45 to ramp 49. Establish new ramp 47.5 off of interdunal road. • Hatteras Inlet Spit: Establish new interdunal road from the intersection of Pole and Spur Roads southwest towards the inlet, stopping at least 100 meters from the inlet. <p>Ocracoke Island District: Same as alternative A.</p> |

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|---|--|--|---|---|--|
| Hours of Allowable ORV Operation on Beach (Please refer to tables 7 and 7-1 to determine when routes and areas are open to ORV use.) | | | | | |
| All areas of the Seashore open 24 hours a day year-round. | <p>Nov 16 to Apr 30: All beaches open to ORV use 24 hours a day.</p> <p>May 1 to Nov 15: All potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) closed to non-essential ORV use from 10:00 p.m. to 6:00 a.m., except that from Sep 16 to Nov 15 ORV use is allowed from 10:00 p.m. to 6:00 a.m. subject to terms and conditions of a permit.</p> | <p>Nov 16 to Apr 30: Designated ORV routes would be open to ORV use 24 hours a day.</p> <p>May 1 to Nov 15: Designated ORV routes in potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) would be closed to non-essential ORV use from 7:00 p.m. to 7:00 a.m.</p> <p>Hours of night-driving prohibition would be established in the Superintendent's Compendium and subject to periodic review.</p> | <p>Same as alternative C, except:</p> <ul style="list-style-type: none"> • No periodic review. | <p>Nov 16 to Apr 30: Designated ORV routes would be open to ORV use 24 hours a day.</p> <p>May 1 to Nov 15: Designated ORV routes in potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) would be closed to non-essential ORV use from 10:00 p.m. to 6:00 a.m.</p> <p>Sep 16 to Nov 15: ORV routes with no or low density of turtle nests would reopen to ORV use between 10:00 p.m. and 6:00 a.m., subject to terms and conditions of permit.</p> <p>Hours of night-driving prohibition would be established in the Superintendent's Compendium and subject to periodic review.</p> | <p>Nov 16 to Apr 30: Designated ORV routes would be open to ORV use 24 hours a day.</p> <p>May 1 to Nov 15: Designated ORV routes in potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) would be closed to non-essential ORV use from 9:00 p.m. until 7:00 a.m.</p> <p>Sep 16 to Nov 15: ORV routes with no turtle nests remaining would reopen for night driving, subject to terms and conditions of the standard ORV permit.</p> |

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|---|--|---|--|---|---|
| ORV Safety Closures | | | | | |
| <p>ORV safety closures are established as needed to address safety conditions such as debris on the beach or narrow beaches. Narrow beaches are reopened as the beach widens. Safety closures are applicable only to ORV access; pedestrian access is maintained.</p> <p>Existing ORV safety closures include:</p> <ul style="list-style-type: none"> • Ramp 1 to ramp 2 • 1.8 mile south of ramp 38 to 0.4 mile north of ramp 43. • Buxton to Lighthouse Beach. • Northern boundary of Frisco to Hatteras Village. • Hatteras Village Beach. <p>1.5 mile north of ramp 67 to 1 mile south of ramp 59.</p> | <p>Same as alternative A.</p> | <p>ORV safety closures would be established on designated ORV routes as needed to address ORV and pedestrian safety considerations, including the following:</p> <ul style="list-style-type: none"> • Debris on the beach. • Narrow beaches. • Congested areas. <p>Safety closures would preclude ORV access, while pedestrian and commercial fishing access would generally be maintained through safety closures.</p> <p>NPS law enforcement staff would monitor ORV safety closures on a weekly basis. Sufficient reduction or elimination of the conditions prompting the closure, so there is no longer an imminent hazard, would constitute the trigger for reopening an ORV safety closure.</p> | <p>ORV safety closures would not be established. ORV drivers would be responsible for recognizing and avoiding ORV safety hazards and would drive at own risk.</p> | <p>Same as alternative C.</p> | <p>ORV safety closures would be implemented in the event of a threat of significant bodily injury or death, and/or damage to personal property, including vehicles and their contents. ORV safety closures would preclude ORV access, while pedestrian and commercial fishing access would be maintained through most safety closures.</p> <p>Triggers that could justify an ORV safety closure include, but are not limited to:</p> <ul style="list-style-type: none"> • Deep beach cuts that block the beach from dune to surf with no obvious way around. • Obstacles, such as exposed stumps, shipwrecks, or debris, that cannot be safely bypassed or that block the entire width of the beach and cannot be easily removed. • Severe beach slope that puts vehicles in an unsafe gradient position and increases the chances of the loss of vehicular control. • A high concentration of pedestrian users coupled with a narrow beach. • A narrow beach where there is insufficient width to safely exit the beach in the vehicle corridor during normal (non-storm) high tides. • Between November 1 and March 31 portions of a village beach that are not consistently at least 20 meters (66 feet) wide during normal high tides. <p>Triggers do not include:</p> <ul style="list-style-type: none"> • Hazards blocking only a portion of the beach, where safe passage is available around the hazard. <p>NPS law enforcement staff will monitor ORV safety closures on a weekly basis. Sufficient reduction or elimination of the conditions prompting the closure, so there is no longer an imminent hazard, would constitute the trigger for reopening a closure.</p> |

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|--|--|--|---|---|---|
| Pedestrian Safety | | | | | |
| 36 CFR 4.20, Right-of-Way: An operator of a motor vehicle shall yield the right of way to pedestrians (as well as saddle and pack animals, and vehicles drawn by animals). Failure to yield the right of way is prohibited. 36 CFR 4.22, Unsafe Operation: (b) The following are prohibited: (3) Failing to maintain that degree of control of a motor vehicle necessary to avoid danger to persons, property, or wildlife. No additional measures apply. | Same as alternative A. | Same as alternative A. | Same as alternative A. | Same as alternative A, plus: <ul style="list-style-type: none">For village beaches that are open to ORV use during the winter season, the village beaches must be at least 20 meters (66 feet) wide from the toe of the dune seaward to mean high tide line in order to be open to ORV use. | Same as alternative A, plus: <ul style="list-style-type: none">Vehicles must yield to pedestrians on all ORV routes.When approaching or passing a pedestrian on the beach, ORVs shall move to the landward side of the available ORV corridor in order to yield the wider portion of the beach corridor to the pedestrian.ORVs shall slow to 5 mph when traveling within 30.5 meters (100 feet) or less of pedestrians at any location on the beach at any time of year.Pedestrians should not block access ramps and should use pedestrian ramps/boardwalks where available. If a pedestrian walkover is not available, pedestrians should walk to the side of ORV ramps, not in the tire tracks. |
| Administrative ORV Closures | | | | | |
| The beach in front of the former site of Cape Hatteras Lighthouse is closed to ORV access. Buxton Woods Road is closed to ORV access. | Same as alternative A. | No administrative closures would be established. ORV routes and VFAs would be designated as described in table 7. | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Temporary Emergency ORV Closures | | | | | |
| Temporary emergency ORV closures established per Superintendent's Compendium and NPS policy. | Same as alternative A, plus: <ul style="list-style-type: none">NPS retains the authority to implement a temporary emergency ORV closure if any of the following conditions are observed:<ul style="list-style-type: none">ORV traffic is backing up on the beach access ramps, either on- or off-beach bound, which threatens to impede traffic flow.ORV traffic on the beach is parked in such a way that two-way traffic is impeded. <p>Multiple incidents of disorderly behavior are observed or reported.</p> | Same as alternative B, plus: <ul style="list-style-type: none">Beaches would be temporarily closed to additional ORV use if/when carrying capacity is reached or exceeded. | Same as alternative B. | Same as alternative C. | Same as alternative B, plus: <ul style="list-style-type: none">Beaches would be temporarily closed to additional ORV use if/when carrying capacity or one-vehicle-deep beach parking limit is reached or exceeded. |

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|--|---|---|---|---|---|
| Ramp Characteristics | | | | | |
| Ramp width and construction details vary. Current practice is to use shell/clay base material to provide firm driving surface where ramps cross dune line. | Same as alternative A. | Ramps would be two lanes wide with shell/clay base and have: <ul style="list-style-type: none"> • Standard regulatory signs and information boards at all ramps. • Gates at all ramps and access points. • Designated “air down” area with hardened surface (e.g., shell/clay base). | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Permit Requirements | | | | | |
| No permit required. | Night-driving permit required for ORV use from 10:00 p.m. to 6:00 a.m. Sep 16 to Nov 15. | ORV permit required. | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Permit Distribution | | | | | |
| N/A | Available in person at various locations and online. | Available in person at designated permit issuing stations and online. | Same as alternative C. | Same as alternative C. | Available in person at designated NPS permit issuing stations. |
| Permit Issuance Requirements | | | | | |
| N/A | ORV owner must sign permit to acknowledge understanding of the rules and must carry permit when beach driving during the restricted period. | ORV owners must complete a short education program in person or online and pass a basic knowledge test. Owners would sign for their permits to acknowledge understanding of the rules and regulations governing ORV use at the Seashore. | ORV owners must read an information brochure and sign the permit to acknowledge understanding of the rules and regulations governing ORV use at the Seashore. | Same as alternative C. | ORV owners must complete a short education program in person and sign for the permit to acknowledge understanding of the rules and regulations governing ORV use at the Seashore. |
| Permit Types | | | | | |
| N/A | Night-driving permit for Sep 16 to Nov 15. | Annual ORV permits would be valid for 12 months from date of purchase. | Annual ORV permits would be valid for the calendar year. | Weekly (7-day) and annual (12-month) ORV permits would be valid from date of purchase. Permits would include night-driving component for September 16 to November 15. In addition, a separate permit would be required for the following activities: <ul style="list-style-type: none"> • Park-and-stay overnight. • Self-contained vehicle (SCV) camping. | 7-day ORV permits would be valid from date of purchase. Annual ORV permits would be valid for the calendar year. Permits would include night-driving component for September 16 to November 15. |
| Permit Number Limits | | | | | |
| N/A | No limit on night-driving permits. | No limit on ORV permits. | Same as alternative C. | Same as alternative C, except: <ul style="list-style-type: none"> • Use limits would be established for park-and-stay and SCV camping. • Use limits would be subject to periodic review. | Same as alternative C. |

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|--|---|--|--|--|---|
| Permit Fees | | | | | |
| N/A | None | ORV permit fee would be based on cost recovery as described in NPS Director's Order and Reference Manual 53. | Same as alternative C, except: <ul style="list-style-type: none"> Amount of fee would be lower than alternative C due to decreased management costs under this alternative. | Same as alternative C, except: <ul style="list-style-type: none"> Fee for weekly ORV permit would be less than fee for annual permit. Fees for park-and-stay and SCV permits would be determined separately. | Same as alternative C, except: <ul style="list-style-type: none"> Fee for 7-day ORV permit would be less than fee for annual permit. |
| Permit Form | | | | | |
| N/A | Night-driving permit is an informational brochure that the user signs and places on dash of vehicle. | ORV permit would be affixed to vehicle in a manner approved by the NPS. | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Permit Revocation | | | | | |
| N/A | Night-driving permit may be revoked for violation of applicable park regulations or terms and conditions of the permit. | ORV permit may be revoked for violation of applicable park regulations or terms and conditions of the permit. | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Beach Parking | | | | | |
| Parking within routes is allowed in any configuration, as long as parked vehicles do not obstruct traffic. | Same as alternative A. | Same as alternative A. | Parking within ORV routes is allowed, but only one vehicle deep. Stacking of vehicles in more than one row would be prohibited. | Same as alternative A. | Parking within ORV routes is allowed, but only one vehicle deep, as long as vehicles do not obstruct two-way traffic. Stacking of vehicles in more than one row would be prohibited. |
| Vehicle Carrying Capacity Determination | | | | | |
| Vehicle carrying capacity would not be determined. | Same as alternative A. | Carrying capacity would be a "peak use limit" determined for all areas based on the linear feet of beachfront and the following physical space requirements ("mile" refers to miles of beach open to ORV use): <ul style="list-style-type: none"> Bodie Island District: <ul style="list-style-type: none"> 260 vehicles/mile (20 feet/vehicle). Hatteras Island District: <ul style="list-style-type: none"> 260 vehicles/mile (20 feet/vehicle). Ocracoke Island District: <ul style="list-style-type: none"> 175 vehicles/mile (30 feet/vehicle). Temporary exceptions to carrying-capacity limits may be approved for short-term events operating under a special use permit. Carrying-capacity criteria would be subject to periodic review. | Carrying capacity would be addressed solely by the beach parking restriction described in the row above. | Same as alternative C, except: Hatteras Island District: <ul style="list-style-type: none"> Cape Point: 400 vehicles allowed within a 1 mile area centered on Cape Point. | The maximum number of vehicles allowed on any particular ORV route is the linear distance of the route divided by 6 meters (20 feet) per vehicle (i.e., the equivalent of 260 vehicles per mile). |

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| ORV Characteristic Requirements | | | | | |
| All vehicles operating in all areas of the Seashore must have valid vehicle registration, insurance, and license plate. Vehicles must be street legal. All-terrain vehicles (ATVs) are prohibited from beach driving. | Same as alternative A. | <p>Off-road Vehicle characteristics:</p> <ul style="list-style-type: none"> • All vehicles must be registered, licensed, and insured for highway use and must comply with state inspection regulations within the state, country, or province where the vehicle is registered • Four-wheel-drive vehicles are recommended. • Two-wheel-drive vehicles are allowed. • Motorcycles and ATVs are prohibited. • There is a three-axle maximum for vehicles (this is the axle maximum for the powered vehicle only and does not include the additional number of axles on towed trailers). • Any trailers are limited to no more than two axles. • The maximum vehicle length is 30 feet (this is the maximum length for the powered vehicle and does not include the additional length of a towed trailer). • Tires must be U.S. Dept. of Transportation-listed or approved. | Same as alternative C. | <p>Same as alternative C, except:</p> <ul style="list-style-type: none"> • Motorcycles would be prohibited on ocean beaches, but allowed on soundside access areas where ORVs are allowed. | <p>Off-road vehicle characteristics:</p> <ul style="list-style-type: none"> • All vehicles must be registered, licensed, and insured for highway use and must comply with state inspection regulations within the state, country, or province where the vehicle is registered. • Four-wheel-drive vehicles are recommended. • Two-wheel-drive vehicles are allowed. • Motorcycles, ATVs, and UTVs are prohibited. • The vehicle must have no more than two axles. • Towed boat trailers are allowed and must have no more than two axles. Travel trailers (i.e., camping trailers) are prohibited. • Vehicle tires must be U.S. Department of Transportation-listed or approved. |
| Equipment Requirements | | | | | |
| None | Same as alternative A. | <p>Equipment requirements:</p> <ul style="list-style-type: none"> • All vehicles shall contain a low-pressure tire gauge, shovel, jack, and jack stand. • A full-sized spare tire, first-aid kit, fire extinguisher, trash bag or container, flashlight (if night driving), and tow strap are recommended. | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Tire Pressure | | | | | |
| Recommend air down of tires before driving on the beach. | Same as alternative A. | When driving on designated routes, tire pressure must be lowered sufficiently to maintain adequate traction within the posted speed limit. Tire pressure of 20 psi is <i>recommended</i> for most vehicles. The softer the sand, the lower the pressure needed. Re-inflate tires to normal pressure as soon as possible after vehicle returns to paved roads. | Same as alternative C. | Same as alternative C. | Same as alternative C. |

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| Speed Limit | | | | | |
| <p>Speed limit is 25 mph (unless otherwise posted) on park beaches for public and private vehicles.</p> <p>Speed limit is 10 mph when ORV corridor is less than 100 feet wide.</p> <p>Speed limit in front of villages during off season (Sep 16 to May 14) on park beaches posted at 10 mph.</p> <p>Emergency vehicles exempt when responding to a call.</p> | <p>May 15 to Sep 15: Speed limit is 15 mph (unless otherwise posted).</p> <p>Sep 16 to May 14: Speed limit is 25 mph (unless otherwise posted).</p> | <p>Speed limit is 15 mph (unless otherwise posted).</p> <p>Emergency vehicles exempt when responding to a call.</p> | Same as alternative C. | Same as alternative C. | Same as alternative C. |
| Essential Vehicles | | | | | |
| Essential vehicles are allowed in VFAs and within resource closures subject to guidelines in the “Essential Vehicles” section of appendix G of the USFWS <i>Piping Plover, Atlantic Coast Population, Revised Recovery Plan</i> . To the extent practicable, emergency response vehicle operators will consult with trained resource management staff regarding protected species before driving into or through resource closures; however, prior consultation may not always be practical. | Same as alternative A. | Same as alternative A. | Same as alternative A. | Same as alternative A. | Same as alternative A. |
| VFAs | | | | | |
| None designated. ORVs are temporarily prohibited in seasonal (village) closures, safety closures, administrative closures, and resource closures, including some areas that have been closed to ORV use for many years. | Same as alternative A. | VFAs would be designated as indicated in table 7. | VFAs would be designated as indicated in table 7. | VFAs would be designated as indicated in table 7. | VFAs would be designated as indicated in table 7-1. |
| Resource Education | | | | | |
| Information is available to the general public through the park website, newspaper, information brochures, and interpretive programs. However, there is no targeted education program for beach users. | <p>Same as alternative A, except:</p> <ul style="list-style-type: none"> • Night-driving permit has basic education component. • Protected species information is available at ORV access points. • There is a 24-hour citizen phone line. • The beach access brochure is to be redesigned. | <p>General information would remain available as described in alternative A. There would be a new required education program for ORV users, as described under ORV Permit Issuance Requirements.</p> | Same as alternative C. | Same as alternative C. | <p>Same as alternative C, plus:</p> <ul style="list-style-type: none"> • There would be a new voluntary resource education program targeted toward pedestrian beach users. |

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| Temporary ORV Use of VFAs | | | | | |
| Beach access would be provided through the issuance of special use permits for areas in front of the villages to allow ORVs to transport visitors with disabilities to the beach and then return the vehicle back to the street. | Beach access would be provided through the issuance of special use permits for areas in front of the villages to allow ORVs to transport visitors with disabilities to the beach and then return the vehicle back to the street. | <p>Under the terms and conditions of a special use permit, the Superintendent could authorize the following:</p> <ul style="list-style-type: none"> • Beach access would be provided through the issuance of special use permits for areas in front of the villages to allow ORVs to transport visitors with disabilities to the beach and then return the vehicle back to the street. • Temporary emergency ORV use of VFAs if needed to bypass sections of NC-12 that are closed for repairs. This could apply to all vehicles, including private vehicles, and would require a special use permit during the temporary emergency situation. • Temporary non-emergency ORV use of VFAs traditionally used for fishing tournaments that were established prior to Jan 1, 2009. • Temporary non-emergency ORV use of VFAs in front of villages to transport mobility-impaired individuals to join their family or friends on an open beach that is otherwise closed to ORVs. ORV use would be limited to the shortest, most direct distance between the nearest designated ORV route and the location of the gathering. <p>Temporary non-emergency use by <i>nonessential</i> vehicles would not be permitted within resource closures.</p> | Same as alternative A. | Same as alternative C. | <p>The superintendent may issue a special use permit for temporary off-road vehicle use to:</p> <ul style="list-style-type: none"> • Authorize the North Carolina Department of Transportation to use Seashore beaches as a public way when necessary to by-pass sections of NC Highway 12 that are impassible or closed for repairs. • Allow participants in a regularly-scheduled fishing tournament to drive in an area not designated for off-road use, if off-road use was allowed in that area for that tournament before January 1, 2009. • Allow vehicular transport of mobility-impaired individuals to a predetermined location in a designated VFA in front of villages via the shortest most direct distance from the nearest designated ORV route or Seashore road; the vehicle must return to the designated ORV route or Seashore road immediately after the transport. <p>Temporary non-emergency use by <i>nonessential</i> vehicles would not be permitted within resource closure.</p> |

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| Parking Areas for Access to VFAs | | | | | |
| Parking is currently provided in 32 park-maintained parking lots throughout the Seashore, totaling approx. 1,000 spaces. | Same as alternative A. | New or expanded parking would be established to support pedestrian access to VFAs as identified in table 7. NPS would use environmentally appropriate design standards to minimize stormwater runoff and other resource impacts. Toilet facilities and trash receptacles would be provided at high-use locations. | Same as alternative C. | Same as alternative C. | Same as alternative C, except as identified in table 7-1. |
| Alternative Transportation | | | | | |
| None | Same as alternative A. | NPS would consider applications for commercial use authorization to offer beach shuttle services. | Same as alternative A. | Same as alternative C, plus: <ul style="list-style-type: none"> • NPS would designate and post boat landing zones (drop-off) near the inlet at Bodie Island Spit and South Point Ocracoke that could be used to drop off pedestrians if/when the inlet shoreline is not otherwise closed to protect Seashore resources. NPS would encourage a commercial water shuttle service for this purpose; however, the drop-off points would be subject to closure on short notice if needed to protect Seashore resources. | NPS would consider applications for commercial use authorizations to offer beach and water shuttle services. NPS would apply for funding to conduct an alternative transportation study to evaluate the feasibility of alternative forms of transportation to popular sites, such as inlets and Cape Point. |

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| Camping and Nighttime Beach Use | | | | | |
| <p>Per 36 CFR 2.10: Camping^a is prohibited except in designated areas. In the Superintendent's Compendium, camping is prohibited on Seashore beaches. In areas open to ORV use, ORVs are allowed on the beach overnight if someone associated with the vehicle is actively fishing.</p> <p>^aCamping is defined in 36 CFR 1.4 as the erecting of a tent or shelter of natural or synthetic material, preparing a sleeping bag or other bedding material for use, parking of a motor vehicle, motor home, or trailer, or mooring of a vessel for the apparent purpose of overnight occupancy.</p> | <p>Same as alternative A, plus:</p> <ul style="list-style-type: none"> Nighttime use of ORVs is seasonally restricted as described under the Hours of Allowable ORV Operation section. | <p>Same as alternative B, plus:</p> <ul style="list-style-type: none"> Unattended beach equipment (e.g., chairs, canopies, volleyball nets, watersports gear) is prohibited on the Seashore at night. Turtle patrol and law enforcement will tag equipment found at night. Owners have 24 hours to remove equipment before it is removed by NPS staff. | <p>Same as alternative C.</p> | <p>Same as alternative C, plus:</p> <p>SCV camping would be authorized as follows:</p> <ul style="list-style-type: none"> The following campgrounds and use limits would be designated for SCV camping from Nov 1 to Mar 31: Oregon Inlet—100 spaces; Cape Point—100 spaces; and Ocracoke—50 spaces. Use limits would be established in the Superintendent's Compendium and subject to periodic review. SCV permits would be required, in addition to an ORV permit for beach driving, and would be available in weekly or seasonal increments. There would be a 7-consecutive-day / 6-night-stay limit during any one visit and a limit of one visit per month. SCVs would be required to have a self-contained toilet and a separate, permanently installed holding tank for both black and grey water, each with a min. capacity of 3 days' waste. Holding tanks must be dumped at an appropriate facility every 72 hours during a visit. <p>Between May 1 and September 16, ORV park-and-stay overnight would be allowed with a permit at selected spits and points, if not otherwise closed to protect resources. The following park-and-stay use limits would be established: Inlet spits—15 vehicles each; Cape Point and South Point Ocracoke—25 vehicles each. Park-and-stay use limits and hours of night-driving prohibition would be established in the Superintendent's Compendium and subject to periodic review.</p> | <p>Same as alternative C.</p> |

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| Beach Fires | | | | | |
| Per 36 CFR 2.13: Fires are prohibited except in designated areas. In the Superintendent's Compendium, beach fires are authorized year-round, with the following restrictions: <ul style="list-style-type: none"> Fires are prohibited from midnight to 6:00 a.m. year-round. Fires are prohibited within resource closures. | Same as alternative A. | Same as alternative B, plus: <ul style="list-style-type: none"> A non-fee educational fire permit is required for any beach fire year-round. The hours that beach fires are permitted are subject to periodic review. | Same as alternative A. | Same as alternative C. | Beach fires are authorized year-round, with the following restrictions: <ul style="list-style-type: none"> A non-fee educational fire permit is required for any beach fire. Fires are prohibited from 10:00 p.m. to 6:00 a.m. year round. Fires are prohibited within resource closures and within 100 meters of any turtle nest closure. May 1 to Nov 15: Beach fires would be permitted only in front of Coquina Beach, Rodanthe, Waves, Salvo, Avon, Buxton, Frisco Hatteras Village, and Ocracoke day use area during the sea turtle nesting season. |
| Pets | | | | | |
| Per 36 CFR 2.15: The following are prohibited: <ul style="list-style-type: none"> Possessing a pet in an area closed to the possession of pets by the Superintendent. Failing to crate, cage, restrain on a leash which shall not exceed 6 feet in length, or otherwise physically confine a pet at all times. In the Superintendent's Compendium, pets are prohibited in all resource closures. Pets are prohibited, even if on a leash, from the landward side of the posts delineating the ORV corridor at the spits (Bodie, Hatteras, Ocracoke) and Cape Point. | Same as alternative A. | Same as alternative A, except : <ul style="list-style-type: none"> Pets would be prohibited within all designated Breeding Shorebird Species Management Areas (SMAs) from Mar 15 to Oct 15. Pets would be prohibited within all Nonbreeding Shorebird SMAs that are otherwise open to recreational use. | Same as alternative C, except : <ul style="list-style-type: none"> Pets would be prohibited in all designated SMAs year-round. This policy would not be subject to periodic review. | Same as alternative C, except: <ul style="list-style-type: none"> Pets would be prohibited within all designated Breeding Shorebird SMAs, including pass-through zones, from Mar 15 to Aug 31. | Same as alternative A, plus: <ul style="list-style-type: none"> Pets would be prohibited in pedestrian shoreline access areas in front of (i.e., seaward of) bird prenesting areas. |

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| Horses | | | | | |
| Per 36 CFR 2.16: The use of horses or pack animals is prohibited outside of trails, routes, or areas designated for their use. In the Superintendent's Compendium, horse use is prohibited in resource closures and on lifeguarded beaches, and is allowed only in the following locations: <ul style="list-style-type: none">• On the beach seaward of the existing dunes and only on beaches open to ORV use.• Along road shoulders or across paved roads where travel is necessary to cross to and from beach access routes.• On trails or in areas as authorized by commercial-use authorization or special use permit. | Same as alternative A. | Same as alternative A, except: <ul style="list-style-type: none">• Horse use would be allowed in some VFAs, except for SMAs, and on a limited number of trails to be designated in the Superintendent's Compendium after ORV routes are determined.• Horse use would be allowed on village beaches from Sep 16 to May 14.• The designated horse use trails and areas would be subject to periodic review. | Same as alternative A. | Same as alternative C. | Same as alternative A, except: <ul style="list-style-type: none">• Horse use would be allowed in some VFAs and on a limited number of trails to be designated in the Superintendent's Compendium after ORV routes are determined.• Horse use would be allowed on village beaches from Sep 16 to May 14.• Horses are prohibited in resource closures and in pedestrian shoreline access areas in front of (i.e., seaward of) bird prenesting areas. |
| Authorized Commercial Vehicles | | | | | |
| Commercial fishing at the Seashore is authorized and managed under a special use permit in accordance with 36 CFR 7.58(b). Commercial fishing vehicles are considered <i>non-essential vehicles</i> and are not authorized to enter resource closures. Permitted commercial fishermen are authorized to enter other areas that are closed to recreational ORV use, including seasonal closures and safety closures, but are not authorized to enter lifeguarded beaches. | Same as alternative A, plus: <ul style="list-style-type: none">• Commercial fishing vehicles are subject to the night-driving restriction in the consent decree.• Under the modified consent decree, commercial fishermen would be granted access to beaches at 5:00 a.m. instead of 6:00 a.m., provided certain conditions from the modified consent decree are met. | Same as alternative A, except: <ul style="list-style-type: none">• Commercial fishermen would not be required to obtain an ORV permit that would be required for recreational ORVs.• Commercial fishing vehicles would be authorized to enter VFAs, except for resource closures and lifeguarded beaches.• In areas outside of existing resource closures, the Superintendent would be able to modify the hours of night-driving restrictions by +/- two hours, subject to terms and conditions of the fishing permit, for commercial fishermen who are actively engaged in authorized commercial fishing activity and can produce fish house receipts from the past 30 days. Such modifications would be subject to periodic review. | Same as alternative C. | Same as alternative C. | Use of vehicles off-road under the terms of a commercial use authorization or commercial fishing permit issued by the superintendent would be as follows. A separate ORV permit is not required. <ul style="list-style-type: none">• When driving off-road, a commercial use authorization (CUA) holder is restricted to the designated off-road routes open for use.• A commercial fishing permit holder may drive on designated off-road routes and, when actively engaged in authorized commercial fishing activities, on beaches not designated for off-road use, except for resource closures and lifeguarded beaches.• The superintendent may allow commercial fishing vehicles to enter the beach at 5 a.m. when night driving restrictions are in effect for the general public, for those actively engaged in authorized commercial fishing activity involving haul seine and gill nets and able to present fish house receipts for the previous 30 days. |

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| Periodic Review | | | | | |
| None | Same as alternative A. | Every 5 years NPS would conduct a systematic review of the ORV management measures that are identified in this plan as being subject to Periodic Review. This could result in changes to those management actions in order to improve effectiveness. | Same as alternative A. | Same as alternative C. | Same as alternative C. |
| Staffing and Material Costs (annual costs based on 2009 dollars) | | | | | |
| Protection: \$1,147,500 Management/Administration: \$428,750 Resource Mgmt: \$508,500 Facilities: \$55,600 Interpretation: \$68,500 Total: \$2,208,850 | Protection: \$1,481,500 Management/Administration: \$483,950 Resource Mgmt: \$813,000 Facilities: \$178,600 Interpretation: \$193,500 Total: \$3,150,550 | Protection: \$1,706,900 Management/Administration: \$380,100 Resource Mgmt: \$704,000 Facilities: \$198,800 Interpretation: \$193,500 Total: \$3,183,300 | Protection: \$1,768,500 Management/Administration: \$360,850 Resource Mgmt: \$649,500 Facilities: \$178,600 Interpretation: \$193,500 Total: \$3,150,950 | Protection: \$2,204,300 Management/Administration: \$383,100 Resource Mgmt: \$924,200 Facilities: \$211,400 Interpretation: \$193,500 Total: \$3,916,500 | Protection: \$1,956,100 Management/Administration: \$274,150 Resource Mgmt: \$943,950 Facilities: \$194,100 Interpretation: \$263,850 Total: \$3,632,150 |
| Resource Protection Measures | | | | | |
| Breeding Season Measures | | | | | |
| Shorebird prenesting areas and ORV/pedestrian buffers for observed shorebird breeding behavior, sea turtle nests, and seabeach amaranth are established as described in the Interim Strategy FONSI (table 9). | Shorebird prenesting areas and ORV/pedestrian buffers for observed shorebird breeding behavior, sea turtle nests, and seabeach amaranth are established as described in the Interim Strategy FONSI (table 9), as modified by the consent decree. | Breeding Shorebird SMAs would be designated. Shorebird prenesting areas and ORV/pedestrian buffers for observed shorebird breeding behavior, sea turtle nests, and seabeach amaranth would be established as described in table 10. ML1 measures would be implemented at all locations (including those outside of SMAs), except at Bodie Island Spit, Cape Point, and South Point Ocracoke, where ML2 measures would be implemented. Designated SMAs would be subject to periodic review. | Same as alternative C, except: <ul style="list-style-type: none">• ML1 would be implemented at all locations. | Same as alternative C, except: <ul style="list-style-type: none">• ML2 areas at Bodie Island Spit, Cape Point, and South Point Ocracoke would include an ORV pass-through zone, using standard buffer distances as described in table 10. | Prenesting areas and buffers would be established as described in table 10-1. Pedestrian shoreline access below the high tide line would be permitted in front of (i.e., seaward of) prenesting areas until breeding activity is observed, then standard buffers for breeding activity would apply. The NPS retains discretion at all times to enforce more protective closures or take other measures, if considered necessary, consistent with its obligations under the law. |
| Nonbreeding Season Measures | | | | | |
| As described in the Interim Strategy FONSI: Suitable interior habitats at spits and at Cape Point are closed year-round to all recreational users to provide for resting and foraging for shorebirds. Suitable habitats include ephemeral ponds and moist flats at Cape Point, Hatteras Spit, Ocracoke, and Bodie Island Spit. Actual locations of suitable foraging and resting habitat may change periodically due to natural processes and are determined based on annual habitat assessment and monitoring. | Same as alternative A. | Nonbreeding Shorebird SMAs would be established at the points and spits based on an annual habitat assessment. In addition, year-round VFAs along the ocean shoreline outside of the villages, as identified in table 7, would be managed as Nonbreeding Shorebird SMAs with recreational activity restrictions as described in table 10. Designated SMAs would be subject to periodic review. | Same as alternative C. | Same as alternative C. | VFAs throughout the Seashore would provide relatively less disturbed foraging, resting, and roosting habitat for migrating and wintering birds. These areas would be managed as described in table 10-1. |

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| Vegetation | | | | | |
| ORV use is generally restricted to minimize impacts. | Same as alternative A. | ORV use would be restricted or prohibited in locations where ORV use is causing unacceptable impacts to vegetation. | Same as alternative C. | Same as alternative C. | Same as alternative C. |

Table 9. Species Observation and Management Under the Interim Protected Species Management Strategy, Consent Decree, and Modified Consent Decree

TABLE 9. SPECIES OBSERVATION AND MANAGEMENT UNDER THE INTERIM PROTECTED SPECIES MANAGEMENT STRATEGY, CONSENT DECREE, AND MODIFIED CONSENT DECREE

Note: This table represents actions from the FONSI for the Interim Protected Species Management Strategy (alternative A). Additions in bold, italic font indicate changes made by the consent decree or modified consent decree as indicated (alternative B).

| SPECIES OBSERVATION ACTIVITY | |
|--|---|
| Survey Time and Frequency Prenesting | <p>Piping plover: March 15 – March 31 survey recent breeding areas at Bodie Island Spit, Cape Point and South Beach, Hatteras Spit, and the northern and southern ends of Ocracoke one time per week. April 1 – June 15 survey recent breeding areas at Bodie Island Spit, Cape Point and South Beach, Hatteras Spit, and the northern and southern ends of Ocracoke three times per week (or every other day) and potential new habitat two times per week. Survey for Wilson's plover during piping plover surveys. American oystercatcher: March 15 – June 15 survey recent breeding areas two times per week. Colonial waterbirds: May 1 – June 15 survey recent breeding areas two times per week.</p> <p>CONSENT DECREE</p> <ul style="list-style-type: none"> • <i>Survey Cape Point, South Beach, Hatteras Spit, North Ocracoke, and Ocracoke South Point at least once every two days from March 15 to April 15, and daily from April 16 to July 15, to determine if any birds are exhibiting prenesting and/or breeding behavior. The NPS shall monitor Bodie Island Spit at least daily from March 15 to July 15.</i> |
| Survey Time and Frequency Life Stages | <p><u>Courtship/Mating:</u> If species are observed exhibiting territorial or courtship behavior during two consecutive surveys in historic habitat, observe three times per week. If scrapes or eggs are observed, survey three times per week. Survey potential new habitat two times per week.</p> <p><u>Nesting:</u> Piping plover: Observe nests from a distance that does not disturb the birds, based on professional judgment, one time daily. Approach nests once per week to observe and record data. American oystercatcher and colonial waterbirds: Observe nests at least three times per week. Wilson's plover: Observe nests incidental to piping plover monitoring.</p> <p><u>Unfledged Chicks:</u> Piping plover: During the first week, observe continually during daylight hours. After the first week, if the closure is reduced or remains the same size, keep continuous observation. If the closure is enlarged, observe once daily. American oystercatcher: Observe once daily. Colonial waterbirds: Observe broods at one-day to two-day intervals and record data. Wilson's plover: Observe broods incidental to piping plover monitoring. All Species: When broods are mobile, provide more frequent observation and enforcement presence. All observations end when all chicks have fledged.</p> <p><u>Nonbreeding/Wintering:</u> Piping plover: As provided in the USFWS Amended Biological Opinion (2007) (attachment 1 to the FONSI), the NPS will monitor the presence, abundance, and behavior of migrating and wintering piping plovers from August 1 – March 31 of each year. At each session, specific observations include vehicle, pedestrian, and pet tracks in posted habitat; any signs of predators, including species; specific management measures in place at the time of the observation; observed behaviors; and reactions to disturbance by pedestrians, pets, or vehicles. American oystercatcher, red knot, Wilson's plover: Survey with piping plover. Colonial waterbirds: Winter/Nonbreeding habitat not surveyed.</p> |
| Data Collected | <p>Piping plover: Use GPS to document breeding areas and nest locations. Record locations where territorial/courtship behavior occurs. Record presence and abundance of birds. American oystercatcher and colonial waterbirds: Use GPS to document nest and colony locations. Record presence and abundance of prenesting birds.</p> |
| Sea Turtles | |
| Survey Time and Frequency | <p>May 1 – September 15 Conduct daily morning surveys by ATV and some ORVs for crawls and nests on all beaches before onset of heavy public ORV use. Daily surveys for nests end September 15. Periodic monitoring (e.g., every two to three days) for unknown nesting and emerging hatchlings will continue, especially in areas of high visitation, September 16 – November 15. Monitoring will also occur for post-hatchling washbacks during periods when there are large quantities of seaweed washed ashore or following severe storm events. Nest observations stop when all nests have hatched or excavation indicates that the nest was not viable. Once a light filter fence is installed, monitor nests daily for signs of hatchling emergence.</p> |

| SPECIES OBSERVATION ACTIVITY | |
|-------------------------------------|--|
| Data Collected | <p>Follow the North Carolina Wildlife Resources Commission Handbook and record:</p> <ul style="list-style-type: none"> • Turtle species • Nest vs. false crawl • Location (physical description and GPS location) • -If nest needs to be relocated and, if so, why and where (new physical description and GPS location), number of eggs relocated, and time of day • Necessary protective measures for nest and hatchlings • Information regarding any post hatching nest excavation and analysis <p>Examine all nests after hatching to determine productivity rates. Excavate nests at a minimum of 72 hours after hatching event. In cases where hatching events or dates were unknown, unearth nest cavities 80–90 days after the lay date.</p> |
| Seabeach Amaranth | |
| Survey Time and Frequency | <p>April 1 During bird and turtle surveys, note any seedlings or plants and record location.</p> <p>August Annual survey of potential habitat (some bird closure areas may not be surveyed due to potential to disturb nesting birds).</p> <p>April – September Before opening any species closure or identifying alternate ORV corridors, survey for seedling/plants.</p> <p>End observations when all plants have died back.</p> |
| Data Collected | Record location of all individual plants or plant clusters using a GPS and note if the plant is located in an area open or closed to recreational use. |
| Essential Vehicle Use | |
| Bird Surveys | Piping plover: During bird surveys, NPS vehicles will remain outside of established resources closures. |
| SPECIES MANAGEMENT ACTIVITY | |
| Closures/Buffers | <p>Prenesting:</p> <p>American oystercatcher: March 15 Activate closures if a territory is established or a nest located. Closures removed when areas have been abandoned for a two-week period.</p> <p>Piping plover: April 1 In February or March of each year, NPS natural resource staff to conduct an annual assessment of piping plover breeding habitat to plan prenesting closures in recent breeding areas that are adapted to current habitat and physiographic conditions. Close recent breeding areas by posting symbolic fencing by April 1. Remove closures if no bird activity is seen by July 15 or when area has been abandoned for a two-week period, whichever comes later.</p> <p>Colonial waterbirds: May 1 Activate closures if a territory is established or a nest located. Closures removed when areas have been abandoned for a two-week period.</p> <p>All Species: Designate a 100-foot-wide ORV and pedestrian corridor. Outside of ORV corridor, prohibit pedestrian access to breeding areas beyond the symbolic fencing. Delineate the corridor with posts placed up to 100 feet above the high tide line. In areas of reduced corridor width (i.e., narrower than 100 feet), post a reduced speed limit of 10 mph.</p> <p>CONSENT DECREE</p> <ul style="list-style-type: none"> • All-species: Prenesting areas established on Bodie Island Spit, Cape Point, South Beach, Hatteras Spit, North Ocracoke, and Ocracoke South Point. The prenesting areas shall remain in place until the later of July 15 or two weeks after the last tern, black skimmer, American oystercatcher, piping plover, or Wilson's plover chick within the area has fledged, as determined by two consecutive monitoring events. Prenesting areas would be delineated to incorporate to the maximum extent the areas delineated in the 2008 prenesting closure maps and would include to the maximum extent possible the soundside intertidal zone, areas of moist soil habitat, ocean backshore, dunes, dry sand flats, overwash, blowouts, and areas of the ocean tidal zone consistent with these areas. • If NPS observes prenesting and/or breeding behavior of colonial waterbirds, piping plovers, or American oystercatchers, NPS shall establish the appropriate buffer as quickly as possible, but always within 8 daylight hours. |

Table 9. Species Observation and Management Under the Interim Protected Species Management Strategy, Consent Decree, and Modified Consent Decree

| SPECIES MANAGEMENT ACTIVITY | |
|-------------------------------------|--|
| Closures/Buffers (continued) | <p>Courtship/Mating:</p> <p>Piping plover: If courtship or copulations are observed outside of existing closures on two consecutive survey days, establish or expand buffer to ensure 150-foot buffer for the observed birds. If additional closures are created around courtship/mating areas, adjust the ORV corridor whenever possible to allow vehicle passage. Allow management to be responsive to individual bird behavior when determining adequacy of closure size.</p> <p>American oystercatcher and colonial waterbirds: If territorial or courting birds are observed outside of existing closures, based on bird behavior and suitable habitat, expand buffers to accommodate the birds. Provide ORV/pedestrian corridor above the high tide line.</p> <p>CONSENT DECREE</p> <ul style="list-style-type: none"> • Piping Plover: 50-meter buffer. • Least Tern: 100-meter buffer. • Other Colonial Waterbirds: 200-meter buffer. • American Oystercatcher: 150-meter buffer. • When multiple species present, greatest applicable buffer distance shall be used. |
| | <p>Nesting:</p> <p>Piping plover: Establish 150-foot buffer/closure around piping plover nests occurring outside existing closures. Expand closures, if necessary, using flexible increments dependent on observed bird behavior. When resource closures are created around nests, adjust the ORV corridor whenever possible to allow vehicle passage. Reduce the width of the ORV corridor if necessary. In areas in which the buffer zone would eliminate the ORV corridor, identify alternate ORV routes if available or provide a bypass (see "Short-term Bypass Route Criteria" on page 11 of the FONSI) if possible.</p> <p>American oystercatcher: Establish buffer/closure based on adult's reaction to human disturbance. Closures vary in size dependent on best professional judgment. When resource closures are created around nests, adjust the ORV corridor whenever possible to allow ORV passage. Reduce width of ORV corridor if necessary. In areas in which the buffer zone would eliminate the ORV corridor, identify alternate ORV routes if available, or provide a bypass (see "Short-term Bypass Route Criteria" on page 11 of the FONSI) if possible. Allow observations to be responsive to individuality in bird behavior when determining adequate size of closure zones around nests.</p> <p>Colonial waterbirds: Establish a buffer/closure of 150 feet to 300 feet around the nest or colony based on observed bird behavior, while maintaining ORV/pedestrian corridor. If the buffer and the corridor overlap each other, then staff will reduce corridor width if necessary. In areas in which the buffer zone would eliminate the ORV corridor, identify alternate ORV routes if available, or provide a bypass (see "Short-term Bypass Route Criteria" on page 11 of the FONSI) if possible. Allow observations to be responsive to individuality in bird behavior when determining adequate size of closure zones around nests.</p> <p>Reduced width of ORV/pedestrian corridors for American oystercatcher and colonial waterbirds will be approached as a research opportunity to gather data useful for the long-term ORV management plan/EIS to test for the distance at which vehicle disturbance to nesting American oystercatcher and colonial waterbirds occurs.</p> <p>All species:</p> <p>Allow observations to be responsive to individuality in bird behavior when determining adequate size of closure zones around nests.</p> <p>If nest is lost, buffers remain in place 2–3 weeks after nest is lost to determine if pair will re-nest, if no other species nesting in area.</p> <p>CONSENT DECREE</p> <ul style="list-style-type: none"> • Piping Plover: 50-meter buffer. • Least Tern: 100-meter buffer. • Other Colonial Waterbirds: 200-meter buffer. • American Oystercatcher: 150-meter buffer. • When multiple species present, greatest applicable buffer distance shall be used. • Upon discovery of an active nest outside an existing closure, protective measures shall be taken immediately to close and establish the buffers described above. Symbolic fencing with the applicable buffer distances stated above shall be installed as soon as NPS staff can reasonably be mobilized to erect the fencing, but always within 6 daylight hours. |
| | <p>Adult Foraging:</p> <p>Piping plover: For adults foraging outside of a closure on two consecutive surveys, expand buffer to include foraging site. These closures are intended to provide foraging opportunities close to breeding sites.</p> <p>Colonial waterbirds, American oystercatcher, and Wilson's plover: No additional buffers/closures.</p> <p>CONSENT DECREE</p> <ul style="list-style-type: none"> • If no piping plover are observed utilizing such a foraging closure over a two-week period of time, the closure will be removed. |

| SPECIES MANAGEMENT ACTIVITY | |
|---|--|
| Closures/Buffers (continued) | <p><u>Unfledged Chicks:</u></p> <p>Piping plover: Establish a minimum 600-foot buffer on either side of brood based on observation of bird behavior and terrain conditions at site. Based on observed behavior, buffer area may require expansion up to 3,000 feet if chicks are highly mobile. Based on observed behavior (i.e., mobility of the brood) and the capability to continually observe mobility and behavior, buffer zone can be reduced after the first week to no less than 300 feet, but may require expansion up to 3,000 feet if chicks are highly mobile. Buffer moves with chicks. Close bypass route at night if buffer zone is less than 600 feet (as identified on p. 8 of the USFWS Amended Biological Opinion (2007) [attachment 1 to the FONSI]).</p> <p>When resource closures are created around broods, adjust the ORV corridor whenever possible to allow vehicle passage. Reduce ORV corridor if necessary. In areas in which the buffer zone would eliminate the ORV corridor identify alternate ORV routes if available. If there are no alternate ORV routes, then if possible establish a bypass (see "Short-term Bypass Route Criteria" on page 11 of the FONSI). Close beach to recreation access down to the waterline, if necessary, to allow chicks access to foraging areas.</p> <p>American oystercatcher: Establish 150-foot to 300-foot buffer zone when unfledged chicks are present. Adjust buffer zone as needed when chicks are mobile. Provide alternate ORV/pedestrian access route or bypass to open areas beyond the closure, if possible.</p> <p>Colonial waterbirds: Establish 150-foot to 300-foot buffer zone when unfledged chicks present. Adjust buffer zone as needed when chicks are mobile. Provide alternate ORV/pedestrian access route or bypass to open areas beyond the closure, if possible.</p> <p>For all species: Allow observations to be responsive to individuality in bird behavior when determining adequate size of closure zones around broods.</p> <p>Reopen 100-foot-wide ORV corridor in recent or current nesting areas after chicks fledge. Areas outside of corridor, including the upper beach remain available for protected species use. Re-establish 150-foot ORV corridor after August 31.</p> <p>CONSENT DECREE</p> <ul style="list-style-type: none"> • <i>Piping Plover: 1,000-meter buffer, although it would be reduced to 300 meters for pedestrians during daylight hours only. Two-weeks after hatching, the NPS may allow ORV access within the 1,000-meter buffer down to 300 meters, although the NPS may re-establish the 1,000-meter buffer based on plover movement or behavior. Vehicles may be allowed to pass through portions of the protected area, where the protected area is considered by NPS natural resource management staff to be inaccessible to piping plover chicks because of steep topography, dense vegetation, or other naturally occurring obstacles. All of the ocean beach at Cape Point, South Beach, and North Ocracoke and all of the bayshore and ocean beach at Bodie Island Spit and Ocracoke South Point will be considered accessible to piping plover chicks in these areas. Within the 1,000-meter piping plover unfledged chick buffer at Hatteras Spit, all of the ocean beach and that part of the bayshore beach at the overwash fans and from the inlet east to a point 200 meters east of the point where the Spur Road from the Pole Road meets the bayshore will be considered accessible to piping plover chicks in these areas.</i> • <i>All other species: 200-meter buffer.</i> • <i>Locations of buffers are adjusted to accommodate chick movement. The NPS retains discretion to enforce greater restrictions as necessary to protect the species.</i> • <i>When multiple species present, greatest applicable buffer distance shall be used.</i> • <i>Upon discovery of chicks outside an existing closure, protective measures shall be taken immediately to close and establish the buffers described above. Symbolic fencing with the applicable buffer distances stated above shall be installed as soon as NPS staff can reasonably be mobilized to erect the fencing, but always within 6 daylight hours.</i> |
| Disturbance from ORVs or Pedestrians | <p>CONSENT DECREE</p> <ul style="list-style-type: none"> • <i>If NPS staff observes disturbance from ORVs and/or pedestrians, buffers would be expanded in 50-meter increments until no disturbance occurs. If a deliberate violation occurs that disturbs wildlife or vandalizes nests or fencing, the buffer would be expanded by 50 meters on the first offense. If there are multiple occurrences in the same area, the buffer would be expanded by 100 meters and 500 meters for the second and third violations, respectively.</i> <p>MODIFIED CONSENT DECREE</p> <ul style="list-style-type: none"> • <i>If a violator is apprehended, the NPS would not be required to institute expanded buffers. If the buffer has been expanded and then the violator is caught, the NPS can retract the expansion.</i> |
| Non Breeding/Wintering Closures | For piping plover: Suitable interior habitats at spits and at Cape Point closed year-round to all recreational users to provide for resting and foraging for all species. For example, at present, such suitable habitats include ephemeral ponds and moist flats at Cape Point, Hatteras Spit, Ocracoke, and Bodie Island Spit. Actual locations of suitable foraging and resting habitat may change periodically due to natural processes. |

Table 9. Species Observation and Management Under the Interim Protected Species Management Strategy, Consent Decree, and Modified Consent Decree

| SPECIES MANAGEMENT ACTIVITY | |
|------------------------------------|---|
| Sea Turtles | |
| Nest Closures/Buffers | <p>Establish a buffer approximately 30 feet by 30 feet with symbolic fencing and signage around nest.</p> <p>Approximately 50–55 days into incubation, closures expanded to the surf line. The width of the closure based on the type and level of use in the area of the beach where the nest was laid:</p> <ul style="list-style-type: none"> a. VFAs with little or no pedestrian traffic – 75 feet wide (total width); b. villages or other areas with high levels of day use –150 feet wide (total width); c. areas with ORV traffic – 350 feet wide (total width). <p>Opposite the surf line on the upper end of the closure, the closed area expanded to 50 feet where possible, but no less than 30 feet duneward from the nest. Traffic detours behind the nest area clearly marked with signs and reflective arrows.</p> <p>Where present within closure, vehicle tracks manually smoothed with rakes or a steel mat attached to an ATV, so as not to impede hatchlings attempting to reach the surf.</p> <p>Use light filtering fence behind nests nearing hatch dates to block light pollution from the villages and vehicles operating on the beach after dark.</p> <p>CONSENT DECREE</p> <ul style="list-style-type: none"> • <i>After September 15 all remaining unhatched turtle nests, once they reach their hatch window, shall be protected by full beach closures.</i> <p>MODIFIED CONSENT DECREE</p> <ul style="list-style-type: none"> • <i>After September 15, all unhatched turtle nests would only require full beach closures from sunset until 6:00 a.m. instead of 24 hours a day.</i> |
| Nest Relocation | <p>When a nest is found, staff assesses need for nest relocation and follows relocation guidance identified in the NCWRC handbook.</p> <p>If it is determined the nest will not be relocated, it will be immediately protected with a symbolic fence measuring approximately 30 feet by 30 feet and signage.</p> <p>If a nest is threatened by a storm event, the NPS will consult NCWRC to determine appropriate action.</p> |
| Light Management | <p>Establish turtle friendly lighting standards for all Seashore (NPS) structures.</p> <p>Encourage concessioners to install turtle friendly lighting.</p> |
| Research | Support research efforts looking at the sex ratios of turtles. |
| Seabeach Amaranth (SBA) | |
| Buffers | <p>April 15 – November 30</p> <p>If a plant/seedling is found outside of an existing closure, the Seashore will erect symbolic fencing with signage creating a 30-foot by 30-foot buffer around the plant. If plants are located next to each other, the area will be expanded to create one enclosure protecting several plants.</p> <p>If a SBA is found during the survey prior to reopening a bird closure to ORV and pedestrian use, the Seashore will protect the SBA as described above and reopen the areas of the bird closure where no plants exist.</p> <p>Areas reopened if no plants are present by September 1. Where plants occur, the closed areas will be reopened after the plants have died.</p> |
| Predator Management | <p>Trappers will target red and gray fox, raccoons, cats and other predators for removal.</p> <p>Piping plover: Nests surveyed to count eggs and look for predator tracks.</p> <p>As applicable, predator exclosures are erected when nest found with eggs.</p> <p>American oystercatcher and colonial waterbirds: Nests surveyed to count eggs and look for predator tracks.</p> <p>Sea Turtle: Nests surveyed to count eggs and look for predator tracks. Predator exclosures may be placed over nests if predator tracks or nest predation is evident.</p> <p>SBA: No predator management.</p> |
| Conservation Measures | Conservation measures are discretionary activities intended to minimize or avoid adverse effects of an action on listed species or critical habitat, to help implement recovery plans, or to develop information. Conservation measures outlined in the USFWS Amended Biological Opinion (2007) (attachment 1 to the FONSI) will be considered for implementation. The Seashore will notify the USFWS when any of these conservation measures are implemented. |

TABLE 10. SPECIES MANAGEMENT STRATEGIES FOR ALTERNATIVES C, D, AND E

| DEFINITIONS | |
|---|---|
| Breeding behavior: Shorebird behavior that includes, but is not limited to, courtship, mating, scraping, confirmed scrapes, and other breeding or nest-building activities. The terms breeding behavior and breeding activity are used synonymously. | |
| Human disturbance: Any human activity that changes the contemporaneous behavior of one or more individuals of breeding, nesting, foraging, or roosting colonial waterbirds, piping plover, Wilson's plover, or American oystercatcher. Behaviors indicating disturbance include defensive displays; alarm calls; flushing or leaving a nest or feeding area; and diving or mobbing pedestrians, dogs, or vehicles. | |
| Periodic review: A systematic review of data, habitat conditions, and other information to be conducted by the NPS every 5 years, after storms or events that Seashore management determines to be a major modification of habitat quantity or quality, or after a significant change in protected species status (e.g., listing or de-listing), in order to evaluate the effectiveness of management actions in making progress toward the accomplishment of stated objectives. Periodic review could result in changes to the management actions in order to improve effectiveness. When desired future conditions for resources are met or exceeded, periodic review and adaptive management may allow for more flexible management of recreational use, provided adverse impacts of such use are effectively managed and wildlife populations remained stable. Where progress is not being made toward goals, periodic review and adaptive management may result in <u>increased</u> restrictions on recreational use. | |
| Prenesting closure: A kind of resource closure in which an area of suitable habitat is proactively closed to ORVs and pedestrians at the start of the shorebird breeding season to provide undisturbed habitat for bird breeding activities to occur. | |
| Research area: Area of suitable habitat set aside on a temporary or long-term basis (such as a study site or control plot) as part of a research project authorized by NPS under a research permit. | |
| Resource closure: Any area posted as closed to all public entry in order to protect wildlife, such as breeding and foraging shorebirds and bird and turtle nests, or vegetation from human disturbance. | |
| Species Management Area (SMA): Area of suitable habitat that has had concentrated and recurring use by multiple individuals and/or multiple species of protected shorebirds during the breeding season or nonbreeding season, or concentrations of seabeach amaranth specimens, in more than one (i.e., two or more) of the past 5 years and is managed to reduce or minimize human disturbance. Currently designated SMAs are listed at the end of this table. SMAs will be re-evaluated and re-designated every 5 years, or after storms or events that Seashore management determines to be a major modification of habitat quantity or quality, or if necessitated by a significant change in protected species status (e.g., listing or de-listing), as part of the periodic review process described at the end of this table. | <ul style="list-style-type: none"> Breeding Shorebird and Seabeach Amaranth SMA: Area of suitable breeding habitat that has had multiple nests of individuals and/or multiple species of protected shorebirds, or concentrations of seabeach amaranth specimens, in more than 1 (i.e., 2 or more) of the past 5 years and is managed to minimize human disturbance during the breeding season. Focal species for Breeding Shorebird SMAs include piping plover, Wilson's plover, American oystercatcher, least tern, common tern, gull-billed tern, and black skimmer; however, there will be ongoing evaluation of the breeding shorebird species addressed by this plan, as part of the periodic review process described at the end of this table. The following areas have been initially designated as Breeding Shorebird SMAs: <ul style="list-style-type: none"> Bodie Island Spit: 0.2 mile south of ramp 4 to inlet Ramp 27 to ramp 30 New ramp 32.5 to ramp 34 Approximately 1.7 miles south of ramp 38 to north boundary of Buxton Cape Point: 0.2 mile south of ramp 44 to ramp 45 South Beach: ramp 45 to new ramp 47 Hatteras Inlet Spit: Ocean shoreline south of Pole Road to soundside of inlet North Ocracoke Spit: Inlet to 0.25 mile northeast of ramp 59 0.5 mile southwest of ramp 68 to 1.2 miles north of ramp 70 South Point Ocracoke: 0.5 mile southwest of ramp 72 to inlet Nonbreeding Shorebird SMA: Area of suitable nonbreeding habitat that has had concentrated foraging by migrating/wintering shorebirds in more than 1 (i.e., 2 or more) of the past 5 years and is managed to reduce human disturbance during the nonbreeding season. This may include portions of breeding SMAs that provide suitable nonbreeding habitat during periods of overlap between the breeding and migrating season and designated VFAs that are set aside to provide pedestrians with the opportunity for a natural beach experience. <p>Management Level 1 (ML1): An approach to shorebird protection during the breeding season that will use larger, longer-lasting buffers with less monitoring to reduce the need for more frequent monitoring and fencing changes.</p> <p>Management Level 2 (ML2): An approach to shorebird protection during the breeding season that will use smaller buffers and will require more frequent monitoring and fencing changes when an ORV or pedestrian access corridor is open at designated locations during the breeding season.</p> |

| Management Activity | Shorebirds | | |
|---------------------|---|---|---|
| | Piping Plover | American Oystercatcher and Wilson's Plover | Colonial Waterbirds, including Least Terns, Common Terns, Gull-Billed Terns, and Black Skimmers |
| Prenesting Surveys | By Mar 1: NPS staff will evaluate all potential breeding habitat and recommend piping plover prenesting closures based on that evaluation. Mar 15 to Jul 15: Prenesting closures will be surveyed three times per week. Outside of prenesting closures, suitable habitat will be surveyed twice per week, increasing to three times per week once birds are present. | Mar 15 to Jul 15: Prenesting closures will be surveyed three times per week. Outside of prenesting closures, suitable habitat will be surveyed twice per week, increasing to three times per week once breeding pairs are present. | May 1 to Jul 15: Prenesting closures will be surveyed three times per week. Outside of prenesting closures, suitable habitat will be surveyed twice per week, increasing to three times per week once breeding pairs are present. |

Table 10. Species Management Strategies for Alternatives C, D, and E

| Management Activity | Shorebirds | | |
|--------------------------|---|--|---|
| | Piping Plover | American Oystercatcher and Wilson's Plover | Colonial Waterbirds, including Least Terns, Common Terns, Gull-Billed Terns, and Black Skimmers |
| Prenesting Closures | <p>All species: All designated Breeding Shorebird SMAs will be posted as prenesting closures using symbolic fencing by Mar 15 at sites involving piping plover, Wilson's plover, and/or American oystercatcher; and by Apr 15 at sites involving only colonial waterbirds. The NPS will determine the configuration of specific prenesting closures based on an annual habitat assessment. Prenesting closures would be adjusted to the configuration of the Nonbreeding Shorebird SMAs for the respective sites (as described later in this table) if no breeding activity is seen in the area by Jul 31, or 2 weeks after all chicks have fledged, whichever comes later. Prenesting closures will not be modified in cases where the beach erodes into the buffered habitat. ORVs, pedestrians, and pets are prohibited within all resource closures, including prenesting closures.</p> <p>ML1: SMAs managed using ML1 measures would not allow ORV or pedestrian access when prenesting closures are in effect. Areas outside of SMAs would be managed under ML1 measures.</p> <p>ML2: The Bodie Island Spit, Cape Point, and South Point Ocracoke SMAs would be managed using ML2 measures in action alternatives C, E, and F. Once prenesting closures are implemented at these sites, a narrow ORV access corridor (where ORV use is permitted) or a pedestrian access corridor (where ORV use is not permitted) would be established. Upon the first observation of breeding activity, the standard buffers (please refer to table 11, Shorebird/Waterbird Buffer Summary) will apply, which depending upon the circumstances may close the access corridor. The Bodie Island Spit access corridor would follow the ocean shoreline to the inlet. The Cape Point access corridor would follow the ocean shoreline from ramp 44 south to the point, then west approximately 0.2 mile along the ocean shoreline. The South Point Ocracoke access corridor would follow the ocean shoreline south from ramp 72 to the inlet. Exact configuration of the corridor would be determined by NPS staff based on the annual habitat assessment. The ORV access corridor at ML2 sites will generally be no more than 50 meters wide above the high tide line (alternative E may include a designated pass-through zone where no stopping or recreation would be permitted in order to minimize disturbance). An ML2 pedestrian access corridor would generally be below the high tide line and would in no case be more than 10 meters above the high tide line. Pets, as well as kite flying, ball and Frisbee tossing, and similar activities, will be prohibited in the access corridors or pass-through zones (in alternative E only) while the prenesting closure is in effect.</p> | | |
| Courtship/Mating Surveys | Prenesting closures would be surveyed three times per week. Outside of prenesting closures, potential suitable habitat would be surveyed three times per week once breeding pairs are present. | | |
| Courtship/Mating Buffers | <p>All species: The Seashore retains the discretion to expand courtship/mating buffers under ML1 and ML2 depending on staffing and bird behavior. Areas outside of SMAs would be managed under ML1 measures. In unprotected areas, a buffer will be established immediately when courtship or mating is observed. When courtship or mating is observed in the immediate vicinity of paved roads, parking lots, campgrounds, buildings, and other facilities, the NPS retains the discretion to provide resource protection to the maximum extent possible while still allowing those facilities to remain operational. The NPS shall not reduce buffers to accommodate ORV ramp access.</p> <p>ML1/ML2: If breeding activity is observed outside of an existing closure, a buffer will be established or expanded to ensure a 75-meter buffer for the observed birds. Buffers will be increased in 50-meter increments if human disturbance* occurs. Outside of prenesting areas, closures will be removed if no breeding activity is observed for a 2-week period, or when associated breeding activity has concluded.</p> <p>*Buffers are not expanded for incidental disturbance associated with required NPS protected species monitoring.</p> | | |
| Nest Surveys | <p>A walk-through will be conducted to look for nests every 3 days. Once nests are found, nests will be observed daily from a distance that does not disturb the birds, based on professional judgment. Nests will be approached once per week to observe and record data.</p> | | |
| Nest Buffers | <p>All species: The Seashore retains the discretion to expand nest buffers under ML1 and ML2 depending on staffing and bird behavior. In unprotected areas, a buffer will be established immediately when a nest with egg(s) is found. Areas outside of SMAs would be managed under ML1 measures. Prior to hatching, vehicles may pass by such areas within designated ORV access corridors that have been established along the outside edge of nesting habitat, provided that buffers adequate to prevent human disturbance are maintained. When nests or chicks occur in the immediate vicinity of paved roads, parking lots, campgrounds, buildings, and other facilities, the NPS retains the discretion to provide resource protection to the maximum extent possible while still allowing those facilities to remain operational. The NPS shall not reduce buffers to accommodate ORV ramp access. Buffers will remain in place for 2 weeks after a nest is lost to determine if pair will re-nest. Outside of prenesting areas, buffers will be removed if no breeding activity is seen in the area for 2 weeks, or 2 weeks after all chicks have fledged, whichever comes later.</p> <p>ML1 and ML2: A 75-meter buffer/closure will be established around nest(s). Buffers will be increased in 50-meter increments if human disturbance occurs. If a buffer falls within the intertidal zone, a full-beach closure will result.</p> | | |

| Management Activity | Shorebirds | | |
|---|--|--|--|
| | Piping Plover | American Oystercatcher and Wilson's Plover | Colonial Waterbirds, including Least Terns, Common Terns, Gull-Billed Terns, and Black Skimmers |
| Adult Foraging Surveys and Buffer | Suitable breeding habitat will be surveyed three times per week to monitor for adults with an associated scrape or nest territory foraging outside of an existing closure. If birds are observed foraging outside an existing closure, the site will be surveyed daily. If birds are observed foraging outside of a closure on two consecutive surveys, the buffer will be established or expanded using flexible increments based on observed bird behavior to include the foraging site. These closures are intended to provide foraging opportunities close to breeding sites. The closure will be removed if no foraging is observed for a 2-week period during the breeding season, or when associated breeding activity has concluded. | No additional buffers/closures. | No additional buffers/closures. |
| Unfledged Chicks Surveys | ML1: Brood will be observed once daily. ML2: Brood will be observed at least one hour each in a.m. and p.m. daily. Monitor(s) will be present during periods of ORV or pedestrian access. All: Observations will end once chicks have fledged. Chicks are considered fledged at 35 days of age or when observed in sustained flight of at least 15 meters. | ML1: Brood will be observed every other day. ML2: Brood will be observed at least once daily. If the brood cannot be located, at least a one-half hour would be spent in efforts to locate the brood/chick. All: Observations will end once the chicks have fledged. American oystercatcher chicks are considered fledged if they have been observed to be proficient in flying or observed in sustained flight of at least 30 meters. Wilson's plover chicks are considered fledged if they are observed in sustained flight of at least 15 meters. | ML1: Colony will be observed every other day. ML2: Colony will be observed daily. All: Colonies will be surveyed during the peak hatching period, which should fall 21 days after initial nest observations. A follow-up survey (perimeter count) should be conducted during the peak fledge, which should fall 20 days after hatch counts. Observations will end after no unfledged chicks have been observed on three consecutive surveys. |
| Unfledged Chick Buffers | ML1: A minimum 1,000-meter buffer will be established on either side of the nest when unfledged chicks are present. ML2: A 1,000-meter ORV buffer and, where disturbance can be minimized, a 300-meter pedestrian buffer will be established on either side of the nest when unfledged chicks are present. Buffers move with chicks. All: The buffer should extend 1,000 meters for ORVs (or 300 meters for pedestrians under ML2) on each side of a line drawn through the nest site and perpendicular to the long axis of the beach. The resulting area (2,000 meters wide for ORVs or 600 meters wide for pedestrians) of protected habitat for piping plover chicks would extend from the oceanside low water line to the soundside low water line or to the farthest extent of dune habitat if no soundside intertidal habitat exists. | ML1: A 300-meter buffer will be established around the nest when unfledged chicks are present. If chicks move outside of the buffer, it will be adjusted to include an additional 200 meters from the chicks' location. Closures will be removed 2 weeks after fledging. ML2: A 200-meter buffer will be established around the unfledged chicks' location. Foraging and roosting habitat will be included from the ocean (low water line) to the dune (or sound shoreline, if accessible). Buffers will be adjusted/increased as needed when chicks are mobile. Buffers move with chicks. Buffers will remain until Wilson's plover chicks have fledged or 2 weeks after American oystercatcher chicks have fledged (observed flight of 30 meters); a pedestrian corridor may be established prior to the end of the 2-week waiting period for permitting access to the points and spits. | ML1: A 300-meter buffer will be established around nests or colony. If chicks move outside of the buffer, it will be adjusted to provide a standard buffer of 200 meters from the chicks' location. ML2: A 200-meter buffer will be established around the chicks' location. Buffers will be adjusted as needed when chicks are mobile. |
| | All Species: Vehicles and/or pedestrians may be allowed to pass through portions of the buffers or closures that are considered inaccessible to chicks because of steep topography, dense vegetation, or other naturally occurring obstacles. Access corridors outside of the prenesting area will be reopened after chicks fledge (except for American oystercatchers, where the area will remain closed for an additional 2 weeks). Prenesting closures can be removed after Jul 31, or 2 weeks after all breeding activity has ceased or chicks have fledged, whichever is later. Areas outside of SMAs would be managed under ML1 measures. | | |
| Breeding Data Collection/Reporting | The following data will be recorded: Date, time, location of breeding pair, courtship behavior, foraging, scrape, nest, or brood observations; identity of observer. Pair, nest, and brood identification number. Number, location, and status of territorial pairs, nesting pairs, nests, eggs, and chicks. GPS will be used to document nest location. Status of eggs/nest and presence/behavior of adults (laying, incubating, lost, abandoned, hatching, hatched). Status of chicks (age, behavior, fledge status) and presence/behavior of adults. Indications of potential predators, humans, pets, or ORVs within posted areas. Indications of cause of nest or chick loss, if apparent. Reproductive rate (chicks fledged per breeding pair). | The following data will be recorded: Date, time, and location of breeding pair, scrape, nest, or brood observations; identity of observer. Pair number; color band (if applicable). Number, location, and status of pairs, scrapes, nests, eggs, and chicks. Use GPS to document nest location. Status of eggs/nest and presence/behavior of adults (laying, incubating, lost, abandoned, hatching, hatched). Status of chicks (age, behavior, fledge status) and presence/behavior of adults. Indications of potential predators, humans, pets, or ORVs within posted areas. Indications of cause of nest or chick loss, if apparent. Reproductive rate (chicks fledged per breeding pair). | The following data will be recorded: Date, time, location, and species of nest/colony observations; identity of observer. Number and location of birds, nests, chicks, and fledglings. GPS will be used to document colony location. Status of colony and presence/behavior of adults (laying, incubating, lost, abandoned). Status of chicks (behavior, fledge status) and presence/behavior of adults. Indications of potential predators, humans, pets, or ORVs within posted areas. Indications of cause of nest or chick loss, if apparent. |

Table 10. Species Management Strategies for Alternatives C, D, and E

| Management Activity | Shorebirds | | |
|---|--|--|---|
| | Piping Plover | American Oystercatcher and Wilson's Plover | Colonial Waterbirds, including Least Terns, Common Terns, Gull-Billed Terns, and Black Skimmers |
| Nonbreeding Survey | The NPS will monitor presence, abundance, and behavior of migrating and wintering shorebirds from July through May using the SECN protocol. Survey sites will include all Nonbreeding Shorebird SMAs. The NPS will obtain data similar to International Shorebird Survey data. The following information will be recorded: Date, time, and location of observations; identity of observer; species and number of birds observed; band combination of any banded birds; weather variables and tidal stage; habitat; behavior of the majority of birds in the flock (foraging, resting, disturbed [source will be recorded], other); site management in effect where birds are seen; and number of pedestrians, pets, ORVs and other potential disturbances. Species to be surveyed include piping plover, American oystercatcher, Wilson's plover, red knot, and representative species of colonial waterbirds. | | |
| Nonbreeding Shorebird SMAs | <p>All Species: Nonbreeding Shorebird SMAs will be established and managed to reduce disturbance of migrating/wintering shorebirds at various locations throughout the Seashore. Such closures will be installed no later than when breeding season closures are removed at the same location(s). Pets will be prohibited within Nonbreeding Shorebird SMAs.</p> <p>Points and Spits: An annual habitat assessment will be conducted after all birds have fledged from the area. Nonbreeding resource closures will be established at the points and spits based on habitat used by wintering piping plovers in more than one (i.e., two or more) of the past 5 years, the presence of birds at the beginning of the migratory season, and suitable habitat types based on the results of the annual survey. This may include VFAs as well as areas closed to all recreational use. Actual locations of suitable foraging and roosting habitat may change periodically due to natural processes. Access to the inlet shorelines, where permitted, will be maintained by a corridor to be determined by NPS staff based on the annual habitat assessment.</p> <p>Ocean Shoreline Areas: In addition to the nonbreeding resource closures at the points and spits described above, the NPS will establish VFAs along the ocean shoreline that will provide relatively less-disturbed foraging, resting, and roosting areas for migrating and wintering shorebirds. These may include wider sections of beach with an upper-beach ORV corridor that has a buffer of at least 50 meters above the high tide line, and/or sections of beach that have been designated as vehicle free for other reasons, such as to provide pedestrians with opportunities for a natural beach experience. The following activities are generally compatible with migrating/wintering shorebird use of these areas: pedestrian access for fishing, beach walking, bird-watching, kayaking, kiteboarding, paddleboarding, photography, picnicking, sailing, shelling, stargazing, sunbathing, surfing, swimming, wildlife viewing, windsurfing, and commercial fishing due to the relatively low number and frequency of occurrences. If resource protection staff determines that any single activity or collection of activities is negatively impacting shorebird use of a specific location, the NPS may implement additional restrictions on compatible activities. The location(s) of all ocean shoreline Nonbreeding Shorebird SMAs will be subject to periodic review.</p> | | |
| Adaptive Management Initiatives | <p>The NPS would take an adaptive management approach to the species management program in order to evaluate the effectiveness of and improve the measures identified above. During the course of this plan, the NPS would seek funding and assistance to develop the following adaptive management initiatives related to shorebirds or shorebird habitat:</p> <p>Vegetation management: As a pilot project, an adaptive management study to evaluate methods for managing vegetation and improving habitat and wildlife access to available habitat in the Cape Point dredge pond area. The applicability and potential effectiveness of such measures at other locations will be determined.</p> <p>Habitat management: As a pilot project, an adaptive management study to evaluate methods of improving shorebird nesting and/or foraging habitat at one location in the Seashore by applying dredge material or by moving/manipulating sand or water at the site. The applicability and potential effectiveness of such measures at other locations will be determined.</p> <p>Enhanced predator management: An adaptive management study to evaluate whether predator management actions to be implemented under the (proposed) predator control program for protected species management are effective as is, or whether enhanced measures (such as managing avian predators or ghost crabs) would be beneficial and effective, or are necessary to achieve the desired future conditions for species protection.</p> <p>Colonial waterbird social attraction: As a pilot project, an adaptive management study to evaluate the effectiveness of using colonial waterbird decoys and audio-attraction to establish or re-establish colonial waterbird colonies in suitable habitat.</p> <p>Piping plover chick fledge rate: An adaptive management study to evaluate the short-term performance target of 1.0 chick fledged per breeding pair, as well as the 1.5 chicks fledged per pair productivity rate identified in the recovery plan, to determine what productivity rate is realistically attainable and would provide for a growing population at the Seashore over the long term. If the actual productivity rate is not sufficient to achieve the desired future conditions for piping plover, it will be determined what management actions (e.g., frequency of monitoring; size or timing of buffers) need to be changed in order to achieve the desired results. The NPS would seek funding for this study as a conservation measure to contribute to the piping plover knowledge base pursuant to its <i>Endangered Species Act</i> recovery responsibilities.</p> <p>After desired future conditions are attained, the NPS would seek funding to develop the following adaptive management initiatives related to resource protection buffers for shorebirds:</p> <p>Piping plover chick buffer distance: An adaptive management study to evaluate whether a reduced ORV or pedestrian buffer distance (i.e., less than that stated in this plan) after a certain time period, such as 2 weeks after chicks have hatched, would be adequate to prevent disturbance of piping plover chicks by ORVs and/or pedestrians using adjacent areas during daylight hours.</p> <p>Pass-through buffers during the incubation period: An adaptive management study or studies to evaluate whether a reduced buffer distance is adequate to prevent disturbance caused by ORVs driving past piping plover, American oystercatcher, or colonial waterbird nest sites if all other recreation (e.g., pedestrians, pets) is prohibited within the reduced buffer, and to determine whether a reduced buffer is adequate to prevent disturbance caused by pedestrians walking below the high tide line past piping plover, American oystercatcher, or colonial waterbird nest sites.</p> | | |
| Research | In addition to the species management procedures outlined in this table, through the issuance of a research permit, the NPS may authorize qualified researchers associated with recognized academic or research institutions to conduct additional scientific research on the respective species that will add to the existing knowledge of shorebird species or improve resource protection within the Seashore. Establishment of Research Areas may be authorized under such a permit. | | |
| Implementation of Adaptive Management and Research Initiatives | Should adaptive management initiatives and other research provide information that the NPS believes is an adequate basis for management changes, such changes would be evaluated and considered for implementation as part of the 5-year periodic review process described at the end of this table. | | |

| Management Activity | Sea Turtles |
|---|---|
| Survey Time and Frequency | <p>Sea turtle patrol will begin on May 1, unless leatherback nests have been reported within the state, in which case, the Seashore will follow the direction of NCWRC. Patrol will continue until Sep 15, or 2 weeks after the last sea turtle nest or crawl is found, whichever is later.</p> <p>Daily surveys will be conducted by ATV/UTV and possibly ORV for crawls and nests on all beaches, generally in the morning before onset of public ORV use. Daily surveys for nests end Sep 15, or 2 weeks after the last sea turtle nest or crawl is found, whichever is later. Periodic monitoring (e.g., every 2 to 3 days) for unknown nesting and emerging hatchlings will continue, especially in areas of high visitation, from that date until Nov 15.</p> <p>Monitoring will also occur for post-hatching washbacks during periods when there are large quantities of seaweed washed ashore or following severe storm events. Nest observations will stop when all nests have hatched or excavation indicates that unhatched nests are not viable.</p> <p>Once a light filter fence is installed, nests will be monitored daily for signs of hatchling emergence.</p> |
| Sea Turtle Data Collection/Reporting | <p>At a minimum, the NCWRC handbook will be followed and the following will be recorded:</p> <ul style="list-style-type: none"> • Date, location, and species of nests and false crawls; identity of observer. • Whether nests need to be relocated and, if so, why and where (new physical description and GPS location), number of eggs relocated, and time of day. • Necessary protective measures for nests and hatchlings. • Information regarding any post-hatching nest excavation and analysis. <p>All nests will be examined after hatching to determine productivity rates. Nests will be excavated in the evening, a minimum of 72 hours after the hatching event. In cases where hatching events or dates are unknown, nest cavities will be unearthed 80–90 days after the lay date. Any live hatchlings found during excavations will be released at dusk or after dark on the same day as excavation.</p> <p>For strandings, the following will be recorded: species, location (GPS), measurements, indications of human interactions, and disposition of animal/carcass. Samples and photos will be collected when necessary. Necropsies will be conducted when possible.</p> |
| Nest Closures/Buffers | <p>A buffer approximately 10 × 10 meters will be established with symbolic fencing and signage around nest. Closure size may be modified depending on environmental conditions at the nest site.</p> <p>Approximately 50–55 days into incubation, closures will be expanded to the surf line. The width of the closure will be based on the type and level of use in the area of the beach where the nest was laid:</p> <ol style="list-style-type: none"> 1. VFAs with little or no pedestrian traffic—25 meters wide (total). 2. Village beaches or other areas with high levels of pedestrian and other vehicle free use—50 meters wide (total). 3. Areas with ORV traffic—105 meters wide (total). <p>On the landward side of the nest, the closed area will be expanded to 15 meters from the nest where possible, but no less than 10 meters landward from the nest. If appropriate, traffic detours behind the nest area will be established and clearly marked with signs and reflective arrows.</p> <p>Light-filtering fence will be used in a U-shaped configuration around nests nearing their hatch dates, with the open face of the U oriented toward the water, to block light pollution from the villages and vehicles operating on the beach after dark.</p> <p>Once the buffer expansion is implemented, NPS staff will use rakes or a steel mat attached to an ATV to smooth any vehicle tracks between the nest and the water, so that tracks do not impede hatchlings from reaching the water.</p> <p>If multiple nests are located near each other (within 50 meters), and have similar hatch dates (within 14 days of each other), then closures will encompass all nests in the area and will not be removed until all nests within the closure have hatched.</p> |
| Nest Watch Program | <p>A cadre of trained volunteers will be established to watch nests that have reached their hatch windows in order to monitor hatchling emergence success and success reaching the water, and to provide for the minimization of negative impacts from artificial lighting, predation, and human disturbance. Depending on the number of nests that may be ready to hatch and the availability of volunteers, it may be necessary for NPS turtle staff to prioritize which nests are watched on any particular night. Priority will be given to watching the nests that are most likely to be negatively impacted by manageable factors.</p> |
| Nest Relocation | <p>By Apr 15, areas deemed unsuitable for turtle nests (e.g., those with a high erosion rate) will be identified by Seashore staff. Maps and descriptions of these areas will be analyzed by NCWRC prior to nesting season.</p> <p>When a nest is found, designated NPS staff members will assess the need for nest relocation and follow relocation guidance identified in the NCWRC handbook.</p> <p>If it is determined that the nest will not be relocated, it will be immediately protected with symbolic fencing and signs approximately 10 × 10 meters in size. Closure size may vary at the discretion of NPS staff depending on the environmental factors at a nest location.</p> <p>If a nest is threatened by an imminent storm event, NPS will consult with NCWRC to determine appropriate action.</p> |
| Strandings | <p>The Seashore will respond to sea turtle strandings in a timely manner, and will forward or report all information, pictures, and signs of human interaction to NCWRC.</p> <p>Necropsies of stranded turtles will be done when possible.</p> |
| Light Restrictions | <p>From May 1 through Nov 15:</p> <ul style="list-style-type: none"> • Portable lanterns, auxiliary lights, and powered fixed lights of any kind shining for more than 5 minutes at a time would be prohibited on Seashore ocean beaches. • Beach fires would be allowed/restricted as described in the respective alternatives. |
| Night-Driving Restrictions | From May 1 to Nov 15, all non-essential vehicle use is restricted or prohibited as described in the respective alternatives. |
| Light Management | <p>By May 1, 2012, turtle-friendly lighting fixtures will be installed on all Seashore structures visible from the ocean beach (except where prevented by other overriding lighting requirements, such as lighthouses, which serve as aids to navigation) and fishing piers operated by NPS concessioners.</p> <p>Educational material will be developed to inform visitors about their impact on the success of sea turtle nests.</p> <p>The Seashore will work with the USFWS, the NCWRC, and Dare County to encourage development of a turtle-friendly lighting education program for villages within the Seashore on Hatteras Island.</p> |

Table 10. Species Management Strategies for Alternatives C, D, and E

| Management Activity | Sea Turtles |
|---|--|
| Adaptive Management Initiatives | <p>The NPS would take an adaptive management approach to the species management program in order to evaluate the effectiveness of and improve the measures identified above. During the course of this plan, the NPS would seek funding and assistance to develop the following adaptive management initiatives for sea turtles:</p> <ul style="list-style-type: none"> • An assessment tool to measure ambient artificial lighting along the length of the Seashore, which can be used to reassess conditions after any management actions (such as a lighting ordinance) are implemented to reduce artificial lighting. After light management actions are implemented, levels of lighting will be reassessed and impacts on sea turtle nesting success will be monitored and evaluated. If supported by the findings, the NPS will work toward an incremental adjustment (i.e., increase) in nighttime ORV access to limited select locations where not in substantial conflict with turtle nesting and hatchling activity. • An adaptive management study to evaluate the level of human disturbance, if any, that might be caused by designating night-driving routes to select points and spits, and to develop management tools to minimize impacts to an acceptable level. If supported by the findings, the NPS will work toward an incremental adjustment (i.e., increase) in nighttime ORV access to limited select locations where not in substantial conflict with turtle nesting and hatchling activity. • An adaptive management study to determine ways to increase the number of hatchlings that emerge and reach the water. The NPS would seek funding for this study as a conservation measure to contribute to the sea turtle knowledge base pursuant to its <i>Endangered Species Act</i> recovery responsibilities. |
| Research | In addition to the species management procedures outlined in this table, through the issuance of a research permit, the NPS may authorize qualified researchers associated with recognized academic or research institutions to conduct additional scientific research on turtle species that will add to the existing knowledge of sea turtles or improve resource protection within the Seashore. Establishment of research areas could be authorized under such a permit. |
| Implementation of Adaptive Management and Research Initiatives | Should adaptive management initiatives and other research provide information that NPS believes is an adequate basis for management changes, such changes would be evaluated and considered for implementation as part of the 5-year periodic review process. |
| Management Activity | Seabeach Amaranth |
| Survey Time and Frequency | <p>Jul to Sep: Before removing any shorebird closures, surveys will be conducted for seabeach amaranth seedlings/plants.</p> <p>Aug: A Seashore-wide annual survey for seabeach amaranth will be conducted in all potential habitats. Some shorebird closures may not be surveyed until just prior to reopening an area to ORV traffic to minimize disturbance of nesting birds or chicks.</p> <p>Observations will end when all known seabeach amaranth plants have died back.</p> |
| Data Collection | The location of all individual plants or plant clusters will be recorded using GPS. It will be noted whether the plant is located in an area open or closed to recreational use. |
| Buffers/Closures | <p>Prior to Jun 1, suitable seabeach amaranth habitat will be identified at points and spits where plants have observed within the last 5 years and delineated with symbolic fencing if such areas are not already protected within existing shorebird resource closures.</p> <p>If a plant/seedling is found outside of an existing closure, symbolic fencing with signage will be erected creating a 10- x 10-meter buffer around the plant. If plants are located next to one another, the area will be expanded to create one enclosure protecting several plants.</p> <p>If a seabeach amaranth plant is found during the survey prior to reopening a bird closure to ORV and pedestrian use, the Seashore will protect the plant as described above and reopen the portions of the bird closure where seabeach amaranth plants do not exist.</p> <p>If seabeach amaranth is not present by Sep 1, seabeach amaranth buffers will be removed. If seabeach amaranth is present, buffers will remain until after the plants have senesced, which is typically around Dec 1.</p> |
| Adaptive Management Initiatives | <p>NPS would take an adaptive management approach to the species management program in order to evaluate the effectiveness of and improve the measures identified above. During the course of this plan, NPS would seek funding and assistance to develop the following adaptive management initiatives for seabeach amaranth:</p> <ul style="list-style-type: none"> • A study to assess the feasibility of seabeach amaranth restoration at up to four suitable sites. NPS would seek funding for this study as a conservation measure to contribute to the seabeach amaranth knowledge base pursuant to its <i>Endangered Species Act</i> recovery responsibilities. |
| Management Activity | All Species |
| Periodic Review | A systematic review of data, annual reports, and other information would be conducted by NPS every 5 years, after storms or events that Seashore management determines to be a major modification of habitat quantity or quality, or if necessitated by a significant change in protected species status (e.g., listing or de-listing), in order to evaluate the effectiveness of management actions in making progress toward the accomplishment of stated objectives. Periodic review could result in changes to the management actions in order to improve effectiveness. When desired future conditions for resources are met or exceeded, periodic review and adaptive management may allow for more flexible management of recreational use, provided adverse impacts of such use are effectively managed and wildlife populations remained stable. Where progress is not being made toward the attainment of desired future conditions, periodic review and adaptive management may provide for additional management including appropriate restrictions on recreational use. |

TABLE 10-1. SPECIES MANAGEMENT STRATEGIES FOR ALTERNATIVE F

| DEFINITIONS | |
|---|--|
| Breeding behavior: Shorebird behavior that includes, but is not limited to, courtship, mating, scraping, confirmed scrapes, and other breeding or nest-building activities. The terms breeding behavior and breeding activity are used synonymously. | periodic review and adaptive management may allow for more flexible management of recreational use, provided adverse impacts of such use are effectively managed and wildlife populations remained stable. Where progress is not being made toward goals, periodic review and adaptive management may result in <u>increased</u> restrictions on recreational use. |
| Human disturbance: Any human activity that changes the contemporaneous behavior of beach nesting birds that are breeding, nesting, foraging, or roosting, or migrating/wintering birds that are using the beach and associated habitats for foraging, resting, or roosting. Bird behaviors indicating disturbance include defensive displays; alarm calls; flushing or leaving a nest or feeding area; and diving or mobbing pedestrians, dogs, or vehicles. | Prenesting closure: A kind of resource closure in which an area of suitable habitat is proactively closed at the start of the shorebird breeding season to provide undisturbed habitat for bird breeding activities to occur. |
| Periodic review: A systematic review of data, habitat conditions, and other information to be conducted by the NPS every 5 years, or after storms or events that Seashore management determines to be a major modification of habitat quantity or quality, or after a significant change in protected species status (e.g., listing or de-listing), in order to evaluate the effectiveness of management actions in making progress toward the accomplishment of stated objectives. Periodic review could result in changes to the management actions in order to improve effectiveness. When desired future conditions for resources are met or exceeded, | Research area: Area of suitable habitat set aside on a temporary or long-term basis (such as a study site or control plot) as part of a research project authorized by NPS under a research permit. Resource closure: Any area posted as closed to all public entry in order to protect wildlife, such as breeding and foraging shorebirds and bird and turtle nests, or vegetation from human disturbance. |

| Management Activity | Shorebirds | | |
|--------------------------|---|--|---|
| | Piping Plover and Wilson's Plover | American Oystercatcher | Colonial Waterbirds, including Least Terns, Common Terns, Gull-Billed Terns, and Black Skimmers |
| Prenesting Surveys | Mar 15 to Jul 15: Prenesting closures will be surveyed three times per week. Outside of prenesting closures, suitable habitat will be surveyed twice per week, increasing to three times per week once birds are present. | Mar 15 to Jul 15: Prenesting closures will be surveyed three times per week. Outside of prenesting closures, suitable habitat will be surveyed twice per week, increasing to three times per week once breeding pairs are present. | May 1 to Jul 15: Prenesting closures will be surveyed three times per week. Outside of prenesting closures, suitable habitat will be surveyed twice per week, increasing to three times per week once breeding pairs are present. |
| Prenesting Closures | <p>All species: By Mar 1, Seashore staff will evaluate all potential breeding habitat for piping plover, Wilson's plover and American oystercatcher and recommend prenesting closures for those species based on that evaluation. CWB breeding habitat will be evaluated by Apr 1. Areas of newly created habitat will also be evaluated during the annual habitat assessment. Areas of suitable habitat that have had individual PIPL, WIPL or AMOY nests, or concentrations of more than 10 CWB nests in more than one of the past five years and new habitat that is particularly suitable for shorebird nesting, such as the habitat at new inlets or overwash areas, will be posted as prenesting closures using symbolic fencing (string between posts) or with other closure signs by Mar 15 at sites involving piping plover, Wilson's plover, and/or American oystercatcher; and by Apr 15 at sites involving only colonial waterbirds. Because CWB colonies may shift locations from year to year, ORV ramps and pedestrian access points that have had colonies in more than one of the past five years will remain open until scraping or nesting is observed. Prenesting closures adjacent to such ramps and access points will still be established in these areas, subject to standard buffers once scraping or nesting is observed. The NPS will determine the configuration of specific prenesting closures based on an annual habitat assessment. Once established at the beginning of the breeding season, these areas would not be reduced to accommodate an ORV corridor. Prenesting closures would be removed if no breeding activity is seen in the area by Jul 31 (or Aug 15 if black skimmers are present), or 2 weeks after all chicks have fledged, whichever comes later. Nonbreeding shorebird habitat protection would be implemented, as described later in this table, before prenesting areas are removed. Pedestrian access along ocean and inlet shorelines below the high tide line will be permitted in front of (i.e., seaward of) prenesting areas until breeding activity is observed, then standard buffers for breeding activity would apply. The NPS retains discretion at all times to enforce more protective closures or take other measures, if considered necessary, consistent with its obligations under the law.</p> <p>Pets and horses are prohibited in pedestrian shoreline access areas in front of prenesting areas. ORVs, pedestrians, pets and horses are prohibited within all resource closures, including prenesting closures.</p> <p>ORV corridors at Cape Point and South Point: When prenesting closures are implemented, the ORV access corridor at Cape Point and South Point will be reduced from 50 meters (164 feet) during the nonbreeding season to 35 meters (115 feet). Once established, the prenesting closure will not be modified if the beach erodes into the ORV corridor or into the protected habitat. Once breeding activity is observed, standard buffers for breeding activity will apply. The ORV corridor width will be restored to 50 meters (164 feet) after breeding activity is completed at the site and prenesting closures are removed.</p> | | |
| Courtship/Mating Surveys | All species: Prenesting closures would be surveyed three times per week. Outside of prenesting closures, potential suitable habitat would be surveyed three times per week once breeding pairs are present. | | |
| Courtship/Mating Buffers | <p>All species: The Seashore retains the discretion to expand courtship/mating buffers depending on bird behavior. In unprotected areas, a buffer will be established within 12 daylight hours when courtship or mating by piping plover, Wilson's plover or American oystercatchers is observed. When courtship or mating is observed in the immediate vicinity of paved roads, parking lots, campgrounds, buildings, and other facilities, such as within the villages or at NPS developed sites, NPS retains the discretion to provide resource protection to the extent possible while still allowing those facilities to remain operational. This provision does not apply to ORV routes or ORV ramp access, which would be subject to standard buffers.</p> <p>If breeding activity is observed outside of an existing closure or within a closure less than the prescribed buffer distance from the closure boundary, a buffer will be established or expanded to ensure a 75-meter buffer for the observed birds.</p> <p>Buffers will be increased in 50-meter increments if human disturbance* occurs.</p> <p>Outside of prenesting areas, closures will be removed if no breeding activity is observed for a 2-week period, or when associated breeding activity has concluded.</p> <p>*Buffers are not expanded for incidental disturbance associated with required NPS protected species monitoring.</p> | | |

Table 10-1. Species Management Strategies for Alternative F

| Management Activity | Shorebirds | | |
|--|--|---|--|
| | Piping Plover and Wilson's Plover | American Oystercatcher | Colonial Waterbirds, including Least Terns, Common Terns, Gull-Billed Terns, and Black Skimmers |
| Scrape/Nest Surveys | <p>A walk-through will be conducted to look for scrapes/nests every 3 days until such monitoring will disrupt other nesting species in the area. Monitoring of known and potential breeding areas will continue from a distance.</p> <p>Nests will be observed daily from a distance that does not disturb the birds, based on professional judgment.</p> <p>Nests will be approached once per week to observe and record data.</p> | <p>A walk-through will be conducted to look for scrapes/nests when observations suggest a scrape or nest is present.</p> <p>Nests will be observed daily from a distance that does not disturb the birds, based on professional judgment.</p> <p>For incubating birds that cannot be observed from a distance, nests will be checked every 3 days.</p> | <p>If scrape(s)/nest(s) are observed outside a resource closure or within a closure less than the prescribed buffer distance from the closure boundary, a 100-meter buffer will be established around the scrape location for least terns (if only least terns are present), or a 200-meter buffer when other colonial waterbird species are present.</p> <p>Buffers will be increased in 50-meter increments if human disturbance occurs.</p> <p>Colonies will be surveyed during the peak nesting period for each species, which generally is during the first part of June for tern species, but could be later for species such as black skimmers.</p> <p>Nests will be observed daily from a distance that does not disturb the birds, based on professional judgment.</p> <p>For incubating birds that cannot be observed from a distance, colony activity will be checked every 3 days.</p> |
| Scrape/Nest Buffers | <p>All species: The Seashore retains the discretion to expand scrape or nest buffers as needed to protect resources. In unprotected areas, a buffer will be established immediately when a nest with egg(s) is found. Prior to hatching, vehicles may pass by such areas within designated ORV access corridors that have been established along the outside edge of nesting habitat where, in the judgment of Seashore resources management staff, steep topography, dense vegetation, or other naturally-occurring obstacles minimize the risk of human disturbance. Such sites will be re-evaluated for disturbance during each subsequent survey. When scrape(s), nest(s) or chick(s) occur in the immediate vicinity of paved roads, parking lots, campgrounds, buildings, and other facilities, such as within the villages or at NPS developed sites, the NPS retains the discretion to provide resource protection to the extent possible while still allowing those facilities to remain operational. Regardless of the nature of the adjacent facilities, in all cases, as a minimum, NPS would provide signs, fencing and reduced buffers to protect nest(s) and chick(s) once they occur. This provision does not apply to ORV routes or ORV ramp access, which would be subject to standard buffers. Buffers will remain in place for 2 weeks after a nest is lost to determine if the pair will re-nest. For buffers that occur outside of, or that expand, the original prenesting areas, the buffer or expansion will be removed if no breeding activity is observed for a 2-week period, or when associated breeding activity has concluded.</p> | | |
| | <p>A 75-meter buffer/closure will be established around scrape(s) or nest(s). Buffers will be increased in 50-meter increments if human disturbance occurs.</p> <p>If a buffer falls within the intertidal zone, a full-beach closure will result.</p> | <p>A 150-meter buffer/closure will be established around scrape(s) or nest(s). Buffers will be increased in 50-meter increments if human disturbance occurs.</p> <p>If a buffer falls within the intertidal zone, a full-beach closure will result.</p> | <p>A 100-meter buffer/closure will be established around a least tern scrape, nest or colony.</p> <p>A 200-meter buffer/closure will be established around the scrape, nest or colony if any common terns, gull-billed terns, or black skimmers are present.</p> <p>Buffers will be increased in 50-meter increments if human disturbance occurs.</p> <p>If a buffer falls within the intertidal zone, a full-beach closure will result.</p> |
| Adult Foraging Surveys and Buffer | <p>PIPL: Suitable breeding habitat will be surveyed three times per week to monitor for adults with an associated scrape or nest territory foraging outside of an existing closure. If birds are observed foraging outside an existing closure, the site will be surveyed daily. If birds are observed foraging outside of a closure on two consecutive surveys, the buffer will be established or expanded using flexible increments based on observed bird behavior to include the foraging site. These closures are intended to provide foraging opportunities close to breeding sites. The closure will be removed if no foraging is observed for a 2-week period during the breeding season, or when associated breeding activity has concluded.</p> <p>WIPL: No additional buffers/closures.</p> | No additional buffers/closures. | No additional buffers/closures. |
| Unfledged Chick Surveys | <p>PIPL: Brood will be observed at least one hour each in a.m. and p.m. daily.</p> <p>WIPL: Observe brood once daily.</p> <p>All: Observations will end once chicks have fledged. Chicks are considered fledged at 35 days of age or when observed in sustained flight of at least 15 meters.</p> | <p>Brood will be observed at least once daily. If the brood cannot be located, at least one-half hour will be spent in efforts to locate the brood/chick.</p> <p>Observations will end once the chicks have fledged. Chicks are considered fledged if they have been observed to be proficient in flying or observed in sustained flight of at least 30 meters.</p> | <p>Colony will be observed daily.</p> <p>Observations will end after no unfledged chicks have been observed on three consecutive surveys. Chicks are considered fledged if they have been observed to be proficient in flying or observed in sustained flight of at least 15 meters.</p> |

| Management Activity | Shorebirds | | |
|--|--|--|--|
| | Piping Plover and Wilson's Plover | American Oystercatcher | Colonial Waterbirds, including Least Terns, Common Terns, Gull-Billed Terns, and Black Skimmers |
| Unfledged Chick Buffers | <p>PIPL: A 1,000-meter ORV buffer and, where disturbance can be minimized, a 300-meter pedestrian buffer will be established on either side of the nest when unfledged chicks are present. Buffers move with chicks.</p> <p>The buffer should extend 1,000 meters for ORVs (or 300 meters for pedestrians) on each side of a line drawn through the nest site and perpendicular to the long axis of the beach. The resulting area (2,000 meters wide for ORVs or 600 meters wide for pedestrians) of protected habitat for piping plover chicks would extend from the oceanside low water line to the soundside low water line or to the farthest extent of dune habitat if no soundside intertidal habitat exists.</p> <p>WIPL: A 200-meter buffer will be established around the unfledged chicks' location. Foraging and roosting habitat will be included from the ocean (low water line) to the dune (or sound shoreline, if accessible). Buffers will be adjusted/increased as needed when chicks are mobile. Buffers move with chicks.</p> | <p>A 200-meter buffer will be established around the unfledged chicks' location. Foraging and roosting habitat will be included from the ocean (low water line) to the dune (or sound shoreline, if accessible). Buffers will be adjusted/increased as needed when chicks are mobile. Buffers move with chicks.</p> <p>In areas designated for ORV use, buffers will remain until 2 weeks after American oystercatcher chicks have fledged (observed flight of 30 meters); a pedestrian corridor may be established prior to the end of the 2-week waiting period for permitting access to the points and spits.</p> | <p>A 200-meter buffer will be established around the chicks' location. Buffers will be adjusted as needed when chicks are mobile.</p> |
| | <p>All Species: Vehicles and/or pedestrians may be allowed to pass through portions of the buffers or closures that are considered inaccessible to chicks because of steep topography, dense vegetation, or other naturally occurring obstacles. Access corridors outside of the prenesting area will be reopened after chicks fledge (except for American oystercatchers, where the area will remain closed for an additional 2 weeks). Prenesting closures can be removed after Jul 31, or 2 weeks after all breeding activity has ceased or chicks have fledged, whichever is later.</p> | | |
| Breeding Data Collection/Reporting | <p>The following data will be recorded:</p> <ul style="list-style-type: none"> • Date, time, location of breeding pair, courtship behavior, foraging, scrape, nest, or brood observations; identity of observer. • Pair, nest, and brood identification number. • Number, location, and status of territorial pairs, nesting pairs, nests, eggs, and chicks. GPS will be used to document nest location. • Status of eggs/nest and presence/behavior of adults (laying, incubating, lost, abandoned, hatching, hatched). • Status of chicks (age, behavior, fledge status) and presence/behavior of adults. • Indications of potential predators, humans, pets, or ORVs within posted areas. • Indications of cause of nest or chick loss, if apparent. • Reproductive rate (chicks fledged per breeding pair). | <p>The following data will be recorded:</p> <ul style="list-style-type: none"> • Date, time, and location of breeding pair, scrape, nest, or brood observations; identity of observer. • Pair number; color band (if applicable). • Number, location, and status of pairs, scrapes, nests, eggs, and chicks. Use GPS to document nest location. • Status of eggs/nest and presence/behavior of adults (laying, incubating, lost, abandoned, hatching, hatched). • Status of chicks (age, behavior, fledge status) and presence/behavior of adults. • Indications of potential predators, humans, pets, or ORVs within posted areas. • Indications of cause of nest or chick loss, if apparent. • Reproductive rate (chicks fledged per breeding pair). | <p>The following data will be recorded:</p> <ul style="list-style-type: none"> • Date, time, location, and species of nest/colony observations; identity of observer. • Number and location of birds, nests, chicks, and fledglings. GPS will be used to document colony location. • Status of colony and presence/behavior of adults (laying, incubating, lost, abandoned). • Status of chicks (behavior, fledge status) and presence/behavior of adults. • Indications of potential predators, humans, pets, or ORVs within posted areas. • Indications of cause of nest or chick loss, if apparent. |
| Nonbreeding Survey | <p>The NPS will monitor and document the presence, abundance, and behavior of migrating and wintering shorebirds from July through May. The NPS will obtain data similar to International Shorebird Survey data. The following information will be recorded: Date, time, and location of observations; identity of observer; species and number of birds observed; weather variables and tidal stage; habitat; behavior of the majority of birds in the flock (foraging, resting, disturbed [source will be recorded], other); site management in effect where birds are seen; and number of pedestrians, pets, ORVs and other potential disturbances. Species to be surveyed include piping plover, American oystercatcher, Wilson's plover, red knot, and other selected species. Species recently added to the surveys include whimbrel, sanderling, and black-necked stilt.</p> | | |
| Nonbreeding Shorebird Habitat Protection | <p>All Species: VFAs throughout the Seashore will provide relatively less disturbed foraging, resting, and roosting habitat for migrating and wintering birds. These areas will be open to pedestrians for recreational use. Pets on a leash in accordance with existing regulations will be permitted in VFAs, except as previously noted for pedestrian shoreline access in front of prenesting closures.</p> <p>Points and Spits: An annual habitat assessment will be conducted after all birds have fledged from the area. Prior to removing prenesting closures, resource closures will be established in the most sensitive portions of nonbreeding shorebird habitat at the points and spits based on habitat used by wintering piping plovers in more than one (i.e., two or more) of the past 5 years, the presence of birds at the beginning of the migratory season, and suitable habitat types based on the results of the annual habitat assessment. People and pets will be prohibited in these resource closures. Actual locations of suitable foraging and roosting habitat may change periodically due to natural processes. Access to the inlet shorelines, where permitted, will be maintained by a corridor to be determined by NPS staff based on the annual habitat assessment. For the nonbreeding season, the ORV corridor at Bodie Island Spit, Cape Point and South Point will be established at 50 meters (164 feet) after breeding activity is completed and prenesting closures are removed.</p> | | |

Table 10-1. Species Management Strategies for Alternative F

| Management Activity | Shorebirds | | |
|---|---|------------------------|---|
| | Piping Plover and Wilson's Plover | American Oystercatcher | Colonial Waterbirds, including Least Terns, Common Terns, Gull-Billed Terns, and Black Skimmers |
| Adaptive Management Initiatives | <p>The NPS would take an adaptive management approach to the species management program in order to evaluate the effectiveness of and improve the measures identified above. During the course of this plan, the NPS would seek funding and assistance to develop the following adaptive management initiatives related to shorebirds or shorebird habitat:</p> <p>Vegetation management: As a pilot project, an adaptive management study to evaluate methods for managing vegetation and improving habitat and wildlife access to available habitat in the Cape Point dredge pond area. The applicability and potential effectiveness of such measures at other locations will be determined.</p> <p>Habitat management: As a pilot project, an adaptive management study to evaluate methods of improving shorebird nesting and/or foraging habitat at one location in the Seashore by applying dredge material or by moving/manipulating sand or water at the site. The applicability and potential effectiveness of such measures at other locations will be determined.</p> <p>Enhanced predator management: An adaptive management study to evaluate whether predator management actions to be implemented under the (proposed) predator control program for protected species management are effective as is, or whether enhanced measures (such as managing avian predators or ghost crabs) would be beneficial and effective, or are necessary to achieve the desired future conditions for species protection.</p> <p>Colonial waterbird social attraction: As a pilot project, an adaptive management study to evaluate the effectiveness of using colonial waterbird decoys and audio-attraction to establish or re-establish colonial waterbird colonies in suitable habitat.</p> <p>Piping plover chick fledge rate: An adaptive management study to evaluate the short-term performance target of 1.0 chick fledged per breeding pair, as well as the 1.5 chicks fledged per pair productivity rate identified in the recovery plan, to determine what productivity rate is realistically attainable and would provide for a growing population at the Seashore over the long term. If the actual productivity rate is not sufficient to achieve the desired future conditions for piping plover, it will be determined what management actions (e.g., frequency of monitoring; size or timing of buffers) need to be changed in order to achieve the desired results. The NPS would seek funding for this study as a conservation measure to contribute to the piping plover knowledge base pursuant to its <i>Endangered Species Act</i> recovery responsibilities.</p> <p>After desired future conditions are attained, the NPS would seek funding to develop the following adaptive management initiatives related to resource protection buffers for shorebirds:</p> <p>Piping plover chick buffer distance: An adaptive management study to evaluate whether a reduced ORV or pedestrian buffer distance (i.e., less than that stated in this plan) after a certain time period, such as 2 weeks after chicks have hatched, would be adequate to prevent disturbance of piping plover chicks by ORVs and/or pedestrians using adjacent areas during daylight hours.</p> <p>Pass-through buffers during the incubation period: An adaptive management study or studies to evaluate whether a reduced buffer distance is adequate to prevent disturbance caused by ORVs driving past piping plover, American oystercatcher, or colonial waterbird nest sites if all other recreation (e.g., pedestrians, pets) is prohibited within the reduced buffer, and to determine whether a reduced buffer is adequate to prevent disturbance caused by pedestrians walking below the high tide line past piping plover, American oystercatcher, or colonial waterbird nest sites.</p> <p>Nonbreeding shorebird management: Develop an adaptive management study to evaluate nonbreeding shorebird utilization of shoreline habitat that is open to ORV use compared to habitat that is not open to ORV use. Utilize findings in the future to determine best location and configuration of ORV corridors in areas designated for ORV use.</p> | | |
| Research | <p>In addition to the species management procedures outlined in this table, through the issuance of a research permit, the NPS may authorize qualified researchers associated with recognized academic or research institutions to conduct additional scientific research on the respective species that will add to the existing knowledge of shorebird species or improve resource protection within the Seashore. Establishment of Research Areas may be authorized under such a permit.</p> | | |
| Implementation of Adaptive Management and Research Initiatives | <p>Should adaptive management initiatives and other research provide information that the NPS believes is an adequate basis for management changes, such changes would be evaluated and considered for implementation as part of the 5-year periodic review process described at the end of this table.</p> | | |
| Management Activity | Sea Turtles | | |
| Survey Time and Frequency | <p>Sea turtle patrol will begin on May 1, unless leatherback nests have been reported within the state, in which case, the Seashore will follow the direction of NCWRC. Patrol will continue until Sep 15, or 2 weeks after the last sea turtle nest or crawl is found, whichever is later.</p> <p>Daily surveys will be conducted by UTV (and occasionally by ORV) to search for crawls and nests on all oceanside beaches and spits, generally in the morning before onset of public ORV use. Daily surveys for nests end Sep 15, or 2 weeks after the last sea turtle nest or crawl is found, whichever is later. Periodic monitoring (e.g., every 2 to 3 days) for unknown nesting and emerging hatchlings will continue, especially in areas of high visitation, from that date until Nov 15.</p> <p>Monitoring will also occur for post-hatching washbacks during periods when there are large quantities of seaweed washed ashore or following severe storm events. Nest observations will stop when all nests have hatched or excavation indicates that unhatched nests are not viable.</p> <p>Once a light filter fence is installed, nests will be monitored daily for signs of hatchling emergence.</p> | | |
| Sea Turtle Data Collection/Reporting | <p>At a minimum, the NCWRC handbook will be followed and the following will be recorded:</p> <ul style="list-style-type: none"> • Date, location, and species of nests and false crawls; identity of observer. • Whether nests need to be relocated and, if so, why and where (new physical description and GPS location), number of eggs relocated, and time of day. • Necessary protective measures for nests and hatchlings. • Information regarding any post-hatching nest excavation and analysis. <p>All nests will be examined after hatching to determine productivity rates. Nests will be excavated in the evening, a minimum of 72 hours after the hatching event. In cases where hatching events or dates are unknown, nest cavities will be unearthed 80–90 days after the lay date. Any live hatchlings found during excavations will be released at dusk or after dark on the same day as excavation.</p> <p>For strandings, the following will be recorded: species, location (GPS), measurements, indications of human interactions, and disposition of animal/carcass. Samples and photos will be collected when necessary. Necropsies will be conducted when possible.</p> | | |

| Management Activity | Sea Turtles |
|-----------------------------------|---|
| Nest Closures/Buffers | <p>A buffer approximately 10 × 10 meters will be established with symbolic fencing and signage around nest. Closure size may be modified depending on environmental conditions at the nest site.</p> <p>Approximately 50–55 days into incubation, closures will be expanded to the surf line. The width of the closure will be based on the type and level of use in the area of the beach where the nest was laid:</p> <ol style="list-style-type: none"> 1. VFAs with little or no pedestrian traffic—25 meters wide (i.e., 12.5 meters on either side of the nest). 2. Village beaches or other areas with high levels of pedestrian and other non-ORV use—50 meters wide (i.e., 25 meters on either side of the nest). 3. Areas with ORV traffic—105 meters wide (i.e., 52.5 meters on either side of the nest). <p>On the landward side of the nest, the closed area will be expanded to 15 meters from the nest where possible, but no less than 10 meters landward from the nest. If appropriate, traffic detours behind the nest area will be established and clearly marked with signs and reflective arrows.</p> <p>Light-filtering fence will be used in a U-shaped configuration around nests nearing their hatch dates, with the open face of the U oriented toward the water, to block light pollution from the villages and vehicles operating on the beach after dark.</p> <p>Once the buffer expansion is implemented, NPS staff will use rakes or a steel mat attached to an ATV or UTV to smooth any vehicle tracks between the nest and the water, so that tracks do not impede hatchlings from reaching the water.</p> <p>If multiple nests are located near each other (within 50 meters), and have similar hatch dates (within 14 days of each other), then closures will encompass all nests in the area and will not be removed until all nests within the closure have hatched.</p> |
| Nest Watch Program | <p>A cadre of trained volunteers will be established to watch nests that have reached their hatch windows in order to monitor hatchling emergence success and success reaching the water, and to provide for the minimization of negative impacts from artificial lighting, predation, and human disturbance. Depending on the number of nests that may be ready to hatch and the availability of volunteers, it may be necessary for NPS turtle staff to prioritize which nests are watched on any particular night. Priority will be given to watching the nests that are most likely to be negatively impacted by manageable factors.</p> |
| Nest Relocation | <p>In general, NPS staff will follow guidance in the NCWRC handbook and FWS Loggerhead Sea Turtle Recovery Plan, which is to allow nests to incubate at their original location if there is any reasonable likelihood of survival. Relocation of a nest is considered only as an option of last resort. Accommodation of ORV access shall not be a factor in determining whether a nest needs to be relocated.</p> <p>When relocation is determined to be necessary, nests will be moved toward the dunes immediately behind the original nest location (when possible). Narrow beaches or beaches without nearby dunes (i.e., points and spits) may necessitate relocations to adjacent areas above the high tide line that are free of vegetation. If a choice for a relocation site must be made among adjacent areas that are equally suitable biologically, then accommodation of ORV access to a popular location may be considered as a factor in choosing an appropriate relocation site. An adjacent site that is less suitable biologically shall not be selected for a relocated nest to accommodate ORV access.</p> <p>By Apr 15, Seashore staff will conduct an annual sea turtle nesting habitat assessment to identify areas deemed unsuitable for turtle nests (e.g., those with a high erosion rate) and will discuss with NCWRC prior to nesting season to confirm the high erosion area(s) in which nest relocation would occur during the upcoming nesting season.</p> <p>When a nest is found, designated NPS staff members will assess the need for nest relocation. If it is determined that the nest will NOT be relocated, it will be immediately protected with symbolic fencing and signs approximately 10 × 10 meters in size. Closure size may vary at the discretion of NPS staff depending on the environmental factors at a nest location. If it is determined that the nest will be relocated, NPS will follow relocation procedures identified in the NCWRC handbook. A nest will be relocated only when one or more of the following situations exist:</p> <ul style="list-style-type: none"> • The nest is located at or below the average high tide line, or within an existing “trough” or flooding pool above the average high tide line, where regular inundation or standing water will result in embryonic mortality. • The nest is laid in an area that is known to be susceptible to erosion, as identified by the annual habitat assessment. Such areas typically include the following locations where known erosion or water table issues are known to cause nest mortality, such as spits, points, manmade groins, and re-constructed beaches • When a nest is inspected to verify the presence of eggs and it is found that there are broken eggs in the nest resulting in yolk dripping down into the egg chamber. This situation can result from either predation or human impacts and can result in increased predation if the nest is left in place. NPS staff may “screen” a nest to further discourage additional predation from mammalian predators. • The nest is laid in an area in which unusual, but lawfully conducted, human activities pose a serious threat to nests, such as emergency “beach push” following a major storm event. When these situations arise, NPS will consult with NCWRC prior to conducting these activities to discuss the impact on existing turtle nests. <p>If a nest is threatened by an imminent storm event, NPS will consult with NCWRC to determine appropriate action.</p> |
| Strandings | <p>The Seashore will respond to sea turtle strandings in a timely manner, and will forward or report all information, pictures, and signs of human interaction to NCWRC.</p> <p>Necropsies of stranded turtles will be done when possible.</p> |
| Light Restrictions | <p>From May 1 through Nov 15:</p> <ul style="list-style-type: none"> • Portable lanterns, auxiliary lights, and powered fixed lights of any kind shining for more than 5 minutes at a time would be prohibited on Seashore ocean beaches. • Beach fires would be allowed/restricted as described in the respective alternatives. |
| Night-Driving Restrictions | <p>From May 1 until Nov 15 all non-essential vehicle use is prohibited from 9:00 p.m. until 7:00 a.m., except from Sept 16 to Nov 15, ORV routes with no turtle nests remaining will reopen for night driving.</p> |
| Light Management | <p>By May 1, 2012, turtle-friendly lighting fixtures will be installed on all Seashore structures visible from the ocean beach (except where prevented by other overriding lighting requirements, such as lighthouses, which serve as aids to navigation) and fishing piers operated by NPS concessioners.</p> <p>Educational material will be developed to inform visitors about their impact on the success of sea turtle nests.</p> <p>The Seashore will work with the USFWS, the NCWRC, and Dare County to encourage development of a turtle-friendly lighting education program for villages within the Seashore on Hatteras Island.</p> |

Table 10-1. Species Management Strategies for Alternative F

| Management Activity | Sea Turtles |
|---|---|
| Adaptive Management Initiatives | The NPS would take an adaptive management approach to the species management program in order to evaluate the effectiveness of and improve the measures identified above. During the course of this plan, the NPS would seek funding and assistance to develop the following adaptive management initiatives for sea turtles: <ul style="list-style-type: none"> • A study to develop a protocol for conducting an artificial lighting survey along the length of the Seashore, which can be used to assess artificial conditions before and after any management actions (such as a lighting ordinance) are implemented to reduce artificial lighting. After light management actions are implemented, levels of lighting will be reassessed and impacts on sea turtle nesting success will be monitored and evaluated. • An adaptive management study to evaluate the level of human disturbance, if any, that might be caused by designating night-driving routes to select points and spits, and to develop management tools to minimize impacts to an acceptable level. If supported by the findings, the NPS will work toward an incremental adjustment (i.e., increase) in nighttime ORV access to limited select locations where not in substantial conflict with turtle nesting and hatchling activity. • An adaptive management study to determine ways to increase the number of male hatchlings that emerge and reach the water. The NPS would seek funding for this study as a conservation measure to contribute to the sea turtle knowledge base pursuant to its <i>Endangered Species Act</i> recovery responsibilities. |
| Research | In addition to the species management procedures outlined in this table, through the issuance of a research permit, the NPS may authorize qualified researchers associated with recognized academic or research institutions to conduct additional scientific research on turtle species that will add to the existing knowledge of sea turtles or improve resource protection within the Seashore. Establishment of research areas could be authorized under such a permit. |
| Implementation of Adaptive Management and Research Initiatives | Should adaptive management initiatives and other research provide information that NPS believes is an adequate basis for management changes, such changes would be evaluated and considered for implementation as part of the 5-year periodic review process. |
| Management Activity | Seabeach Amaranth |
| Survey Time and Frequency | Jul to Sep: Before removing any shorebird closures, surveys will be conducted for seabeach amaranth seedlings/plants. Aug: A Seashore-wide annual survey for seabeach amaranth will be conducted in all potential habitats. Some shorebird closures may not be surveyed until just prior to reopening an area to ORV traffic to minimize disturbance of nesting birds or chicks. Observations will end when all known seabeach amaranth plants have died back. |
| Data Collection | The location of all individual plants or plant clusters will be recorded using GPS. It will be noted whether the plant is located in an area open or closed to recreational use. |
| Buffers/Closures | Prior to Jun 1, suitable seabeach amaranth habitat will be identified at points and spits where plants have observed within the last 5 years and delineated with symbolic fencing if such areas are not already protected within existing shorebird resource closures. If a plant/seedling is found outside of an existing closure, symbolic fencing with signage will be erected creating a 10- x 10-meter buffer around the plant. If plants are located next to one another, the area will be expanded to create one enclosure protecting several plants. If a seabeach amaranth plant is found during the survey prior to reopening a bird closure to ORV and pedestrian use, the Seashore will protect the plant as described above and reopen the portions of the bird closure where seabeach amaranth plants do not exist. If seabeach amaranth is not present by Sep 1, seabeach amaranth buffers will be removed. If seabeach amaranth is present, buffers will remain until after the plants have senesced, which is typically around Dec 1. |
| Adaptive Management Initiatives | NPS would take an adaptive management approach to the species management program in order to evaluate the effectiveness of and improve the measures identified above. During the course of this plan, NPS would seek funding and assistance to develop the following adaptive management initiatives for seabeach amaranth: <ul style="list-style-type: none"> • A study to assess the feasibility of seabeach amaranth restoration at up to four suitable sites. NPS would seek funding for this study as a conservation measure to contribute to the seabeach amaranth knowledge base pursuant to its <i>Endangered Species Act</i> recovery responsibilities. |
| Management Activity | All Species |
| Periodic Review | A systematic review of data, annual reports, and other information would be conducted by NPS every 5 years, after a major hurricane, or if necessitated by a significant change in protected species status (e.g., listing or de-listing), in order to evaluate the effectiveness of management actions in making progress toward the accomplishment of stated objectives. Periodic review could result in changes to the management actions in order to improve effectiveness. When desired future conditions for resources are met or exceeded, periodic review and adaptive management may allow for more flexible management of recreational use, provided adverse impacts of such use are effectively managed and wildlife populations remained stable. When progress is not being made toward the attainment of desired future conditions, periodic review and adaptive management may result in increased restrictions on recreational use. |

TABLE 11. SHOREBIRD/WATERBIRD BUFFER SUMMARY FOR ALL ALTERNATIVES

| Species | Alternative A | | Alternative B | | Alternatives C, D, and E | | Alternative F | |
|----------------------------------|--|----------------------------------|-------------------------------|---|---|---|-------------------------------|---|
| | Breeding Behavior/Nest Buffer | Unfledged Chicks | Breeding Behavior/Nest Buffer | Unfledged Chicks | Breeding Behavior/Nest Buffer (ML1 / ML2) | Unfledged Chicks (ML1 / ML2) | Breeding Behavior/Nest Buffer | Unfledged Chicks |
| Piping plover | 46 meters | 183 meters | 50 meters | 1,000 meters ORV (300 meters for pedestrians) | 75 meters / 75 meters | 1,000 meters ORV (300 meters for pedestrians) | 75 meters | 1,000 meters ORV (300 meters for pedestrians) |
| Wilson's plover | n/a | n/a | n/a | n/a | 300 meters / 150 meters | 300 meters / 200 meters | 75 meters | 200 meters |
| American oystercatcher | Behavior-based | 46-91 meters | 150 meters | 200 meters | 300 meters / 150 meters | 300 meters / 200 meters | 150 meters | 200 meters |
| Least tern | Same as other colonial waterbird | Same as other colonial waterbird | 100 meters | 200 meters | 300 meters / 100 meters | 300 meters / 200 meters | 100 meters | 200 meters |
| Other colonial waterbird species | Breeding based on behavior/nest 46-91 meters | 46-91 meters | 200 meters | 200 meters | 300 meters / 200 meters | 300 meters / 200 meters | 200 meters | 200 meters |

Note: Buffers apply to both ORVs and pedestrians, unless otherwise specified.

TABLE 12. ANALYSIS OF HOW ALTERNATIVES MEET OBJECTIVES

| Objectives | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|---|--|--|---|---|---|---|
| Management Methodology | | | | | | |
| Identify criteria to designate ORV routes and areas. | Meets objective to some degree. No criteria would be developed to designate routes and areas. The ocean and inlet shoreline and existing soundside routes would potentially be open to ORV use 24 hours a day, year-round. | Meets objective to some degree. No criteria would be developed to designate routes and areas. The ocean and inlet shoreline and existing soundside routes would potentially be open to ORV use, year-round. | Meets objective to a large degree. Routes and areas designated based on seasonal resource and visitor use characteristics of various areas in the Seashore. | Meets objective to a large degree. Routes and areas designated based on providing predictability for visitors and simplified management strategies. | Meets objective to a large degree. Routes and areas designated based on providing a wide variety of access opportunities for all users, while still protecting sensitive resources. | Meets objective to a large degree. Routes and areas designated based on providing a variety of access opportunities for all users, while still protecting sensitive resources. This alternative also provides more predictability than alternative E. |
| Establish ORV management practices and procedures that have the ability to adapt in response to changes in the Seashore's dynamic physical and biological environment. | Meets objective to a moderate degree. ORV use areas are determined by where resource management closures exist. Flexibility to adapt to changes, but lack of a framework to make these changes efficiently. | Meets objective to some degree. ORV use areas are set through resource management measures under the Consent Decree. Areas are set, but are rigid, and do not have flexibility to adapt as needed to respond to changing environment. | Meets objective to a large degree. Route, areas, and ORV management measures are established that are subject to Periodic Review of both ORV management and species management measures. | Meets objective to some degree. Route, areas, and ORV management measures are established that are subject to Periodic Review and species management measures, but not ORV management measures. The ability to implement safety closures would not be available. | Meets objective to a large degree. Route, areas, and ORV management measures are established that are subject to Periodic Review of both ORV management and species management measures. | Meets objective to a large degree. Route, areas, and ORV management measures are established that are subject to Periodic Review of both ORV management and species management measures. |
| Establish a civic engagement component for ORV management. | Meets objective to a moderate degree. The Seashore would conduct educational programs during bird and turtle hatching season, which would involve students from public schools, as well as other public involvement activities that engage the public. | Meets objective to a moderate degree. The Seashore would conduct educational programs during bird and turtle hatching season, which would involve students from public schools, as well as other public involvement activities that engage the public. | Meets objective to a large degree as the Seashore would implement more educational programs in local schools, expand the Junior Ranger program, and enlist volunteers for a Sea Turtle Nest Watch Program. | Meets objective to a large degree as the Seashore would implement more educational programs in local schools, expand the Junior Ranger program, and enlist volunteers for a Sea Turtle Nest Watch Program. | Meets objective to a large degree as the Seashore would implement more educational programs in local schools, expand the Junior Ranger program, and enlist volunteers for a Sea Turtle Nest Watch Program. | Meets objective to a large degree as the Seashore would implement more educational programs in local schools, expand the Junior Ranger program, and enlist volunteers for a Sea Turtle Nest Watch Program. |
| Establish procedures for prompt and efficient public notification of beach access status, including any temporary ORV use restrictions for such things as ramp maintenance, resource and public safety closures, storm events, etc. | Meets objective to some degree. Weekly beach access reports and online news releases provide prompt public notification. | Meets objective to a moderate degree. Weekly beach access reports, online news feeds, and Google Earth maps provide efficient beach access status updates. | Fully meets objective. Weekly beach access reports, online news feeds, and Google Earth maps provide efficient beach access status updates. Implementation of a permit system would provide ORV users with information regarding closed areas. | Fully meets objective. Weekly beach access reports, online news feeds, and Google Earth maps provide efficient beach access status updates. Implementation of a permit system would provide ORV users with information regarding closed areas. | Fully meets objective. Weekly beach access reports, online news feeds, and Google Earth maps provide efficient beach access status updates. Implementation of a permit system would provide ORV users with information regarding closed areas. | Fully meets objective. Weekly beach access reports, online news feeds, and Google Earth maps provide efficient beach access status updates. Implementation of a permit system would provide ORV users with information regarding closed areas. |
| Build stewardship through public awareness and understanding of NPS resource-management and visitor-use policies and responsibilities as they pertain to the Seashore and ORV management. | Meets objective to some degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. | Meets objective to some degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. Public opinion regarding the Consent Decree would detract from these efforts. | Meets objective to a large degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. Additional programs would be implemented and information provided through the permit system would increase awareness of Seashore resources. | Meets objective to a large degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. Additional programs would be implemented and information provided through the permit system would increase awareness of Seashore resources. | Meets objective to a large degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. Additional programs would be implemented and information provided through the permit system would increase awareness of Seashore resources. | Meets objective to a large degree. Seashore programs would continue to provide information regarding resource management and aim to build stewardship through public awareness. Additional programs would be implemented and information provided through the permit system would increase awareness of Seashore resources. |

| Objectives | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|---|--|---|---|---|--|---|
| Natural Physical Resources | | | | | | |
| Minimize impacts from ORV use to soils and topographic features, for example, dunes, ocean beach, wetlands, tidal flats, and other features. | Meets objective to some degree. ORV use not permitted on dunes, but permitted on the ocean and inlet shoreline and existing soundside routes would potentially be open to ORV use 24 hours a day, year-round. Lack of defined areas likely to lead to increased non-compliance and potential for these resources to be impacted. | Meets objective to a moderate degree. ORV use not permitted on dunes, but permitted on the ocean and inlet shoreline and existing soundside routes would potentially be open to ORV use, year-round. Night-driving restrictions reduce amount of disturbance from beach driving. Implementation of larger buffers and backshore closures would offer protection to resources. | Meets objective to a large degree, as ORV use not permitted on dunes, night-driving restrictions, and carrying capacity limits. However, a large amount of beach open to ORV use could result in impacts to physical resources. | Fully meets objective, as ORV use not permitted on dunes, night-driving restrictions, and beach parking limitations. Least amount of mileage open to ORV use year-round would minimize resource impacts. | Fully meets objectives, as ORV use not permitted on dunes, night-driving restrictions, carrying capacity limits, and soundside driving restrictions. | Meets objective to a large degree, as ORV use not permitted on dunes, night-driving restrictions, and carrying capacity limits. However, a large amount of beach open to ORV use could result in impacts to physical resources |
| Threatened, Endangered, and Other Protected Species | | | | | | |
| Provide protection for threatened, endangered, and other protected species (e.g., state-listed species) and their habitats, and minimize impacts related to ORVs and other uses as required by laws and policies such as the <i>Endangered Species Act</i> , the <i>Migratory Bird Treaty Act</i> , and NPS laws and management policies. | Meets objective to some degree, as temporary resource closures provide protection for sensitive species but buffers would require frequent adjustments to provide adequate protection. | Meets objective to a moderate degree, as increased buffer distances and night-driving restrictions provide increased levels of species protection. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use 7 months per year provide proactive (prior to breeding season) protection. | Fully meets objective with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use year-round providing large areas of resource protection. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use 5.5 months per year provide proactive (prior to breeding season) protection. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, prenesting closures and large, pre-determined buffers for breeding/nesting activity would provide proactive (prior to breeding season) protection. |
| Vegetation | | | | | | |
| Minimize impacts to native plant species related to ORV use. | Meets objective to some degree as driving on dune vegetation is prohibited, but lack of defined ORV areas or backshore closures could result in increased non-compliance and impacts to the resource. | Meets objective to a moderate degree as driving on dune vegetation is prohibited and ocean backshore closures are provided. Sensitive areas with marginal width may be open in the winter that would result in non-compliance problems. | Meets objective to a large degree by adding protective signage at soundside parking areas. Location of ORV corridor at the toe of the dune, with no buffer, may impact vegetation. | Fully meets objective as driving on dune vegetation is prohibited. Year-round SMAs protect large areas, reducing potential impacts to vegetation. ORV corridor would provide a 10 meter buffer from the toe of the dune, further protecting vegetation. | Fully meets objective by closing some soundside access areas and adding protective signage at remaining soundside parking areas. ORV corridor would provide a 10 meter buffer from the toe of the dune, further protecting vegetation. | Meets objective to a large degree by adding protective signage at soundside parking areas. However, there is the potential for damage to vegetation from new soundside access points. Location of ORV corridor at the toe of the dune, with no buffer, may impact vegetation. |
| Other Wildlife and Wildlife Habitat | | | | | | |
| Minimize impacts to wildlife species and their habitats related to ORV use. | Meets objective to some degree, as temporary resource closures provide protection for other wildlife species but buffers are not as large as other alternatives and would not offer large levels of protection. | Meets objective to a moderate degree, as increased buffer distances and night-driving restrictions provide increased levels of species protection, which would include protection to other bird and invertebrate species. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use 7 months per year. | Fully meets objective with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use year-round, which would also offer protection to other bird species and invertebrates. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, and SMAs closed to ORV use 5.5 months per year. | Meets objective to a large degree with increased buffer distances, night-driving restrictions, pet regulations, prenesting closures, and year-round and seasonal VFAs that leave areas of the Seashore less disturbed for wildlife. |

Table 12. Analysis of How Alternatives Meet Objectives

| Objectives | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|--|--|---|--|--|---|--|
| Cultural Resources | | | | | | |
| Protect cultural resources, such as shipwrecks, archeological sites, and cultural landscapes, from impacts related to ORV use. | Meets objective to some degree as Seashore protections would be put in place for cultural resources, such as shipwrecks, but allowing driving at night and allowing access to large areas of the Seashore would provide for more access to these resources and more possibility for these resources to be disturbed. | Meets objective to a moderate degree as Seashore protection would be in place for cultural resources, such as shipwrecks, and seasonal restrictions on night driving would further limit access to these resources. Large areas of the Seashore would still be accessible by ORV and would provide some level of access to these resources. | Meets objective to a large degree as Seashore protection would be in place for cultural resources, such as shipwrecks, and seasonal restrictions on night driving would further limit access to these resources. Further protection would be provided by the establishment of SMAs that limit access to certain areas of the Seashore during certain times of year and the addition of a permit system that could be revoked for non-compliance, decreasing the probability of drivers taking non-compliant actions. | Meets objective to a large degree as Seashore protection would be in place for cultural resources, such as shipwrecks, and seasonal restrictions on night driving would further limit access to these resources. Further protection would be provided by the establishment of SMAs that limit access to certain areas of the Seashore during certain times of year and the addition of a permit system that could be revoked for non-compliance, decreasing the probability of drivers taking non-compliant actions. | Meets objective to a large degree as Seashore protection would be in place for cultural resources, such as shipwrecks, and seasonal restrictions on night driving would further limit access to these resources. Further protection would be provided by the establishment of SMAs that limit access to certain areas of the Seashore during certain times of year and the addition of a permit system that could be revoked for non-compliance, decreasing the probability of drivers taking non-compliant actions. | Meets objective to a large degree as Seashore protection would be in place for cultural resources, such as shipwrecks, and seasonal restrictions on night driving would further limit access to these resources. Further protection would be provided by the establishment of year-round and seasonal VFAs that limit access to certain areas of the Seashore during certain times of year and the addition of a permit system that could be revoked for non-compliance, decreasing the probability of drivers taking non-compliant actions. |
| Visitor Use and Experience | | | | | | |
| Ensure that ORV operators are informed about the rules and regulations regarding ORV use at the Seashore. | Meets objective to some degree as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, and on the website. No permit system would be in place to convey information or provide a mechanism for ensuring regulations are followed. | Meets objective to a moderate degree as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, on the website, and within the required night-driving permit. | Fully meets objective as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, and on the website. This alternative includes a required education component as part of the ORV permit. | Fully meets objective as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, and on the website. This alternative includes a required education component as part of the ORV permit. | Fully meets objective as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, and on the website. This alternative includes a required education component as part of the ORV permit. | Fully meets objective as ORV rules are posted at visitor centers, on ORV ramp bulletin boards, in the park newspaper, and on the website. This alternative includes a required education component as part of the ORV permit. |
| Manage ORV use to allow for a variety of visitor use experiences. | Meets objective to some degree as ORV and VFAs are not officially designated. VFAs occur through seasonal and safety closures throughout the Seashore, but no defined use areas exist to provide for a variety of visitor use experiences. | Meets objective to some degree as ORV and VFAs are not officially designated. VFAs occur through seasonal and safety closures throughout the Seashore, but no defined use areas exist to provide for a variety of visitor use experiences. | Meets objective to a moderate degree as more defined areas for ORV and vehicle free recreational opportunities are provided. New interdunal road access would be provided, offering additional options to ORV users. Some separation of uses and unique opportunities are provided for various user groups. | Meets objective to a moderate degree as more defined areas for ORV and vehicle free recreational opportunities are provided. New interdunal road access would be provided, offering additional options to ORV users. Some separation of uses and unique opportunities are provided for various user groups, but large areas would be closed to all visitors for most of the year, and would not be available to provide for the visitor experience. | Meets objective to a large degree as more defined areas for ORV and vehicle free recreational opportunities are provided. New interdunal road access would be provided, offering additional options to ORV users. Additional user opportunities would be provided including the addition of a park-and-stay options, as well as self-contained vehicle camping. The addition of pedestrian routes, additional parking on the soundside, as well as the potential for water taxi access would all contribute to offering a variety of visitor experiences. | Meets objective to a large degree as more defined areas for ORV and vehicle free recreational opportunities are provided. New interdunal road access would be provided, offering additional options to ORV users. Additional visitor experiences would be provided through pedestrian routes, extra trails, and new parking. Providing some areas of the Seashore that are vehicle-free year-round or seasonally would provide for a greater variety of visitor experiences. |

| Objectives | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|--|--|--|---|---|---|---|
| Minimize conflicts between ORV use and other visitor uses. | Meets objective to some degree as no designated areas for uses are established, which could result in real or perceived conflicts between ORV uses and other visitor uses. | Meets objective to some degree as no designated areas for uses are established, which could result in real or perceived conflicts between ORV uses and other visitor uses. | Meets objective to a large degree as designation of ORV and VFAs would help minimize conflicts. Implementation of a permit system would provide additional education and the ability to revoke permits would likely increase compliance with ORV use regulations and further reduce conflicts. Seasonal night-driving restrictions would also reduce potential visitor use conflicts. | Meets objective to a large degree as designation of ORV and VFAs would help minimize conflicts. Implementation of a permit system would provide additional education and the ability to revoke permits would likely increase compliance with ORV use regulations and further reduce conflicts. Seasonal night-driving restrictions would also reduce potential visitor use conflicts. | Meets objective to a large degree as designation of ORV and VFAs would help minimize conflicts. Implementation of a permit system would provide additional education and the ability to revoke permits would likely increase compliance with ORV use regulations and further reduce conflicts. Seasonal night-driving restrictions would also reduce potential visitor use conflicts. | Meets objective to a large degree as designation of ORV and VFAs would help minimize conflicts. Implementation of a permit system would provide additional education and the ability to revoke permits would likely increase compliance with ORV use regulations and further reduce conflicts. Seasonal night-driving restrictions would also reduce potential visitor use conflicts. |
| Visitor Safety | | | | | | |
| Ensure that ORV management promotes the safety of all visitors. | Meets objective to a moderate degree as ORV safety closures would be provided, as well as right-of-way and unsafe operation regulations contained in the CFR. | Meets objective to a large degree as ORV safety closures would be provided, as well as right-of-way and unsafe operation regulations contained in the CFR. Increased signage, lower speed limits, and increased public awareness would contribute to visitor safety. | Fully meets objective as ORV safety closures would be provided. Reduced speed limits would also apply in all areas. Village beaches would be closed to ORV use during the summer. Permit requirement would provide further information for increasing visitor safety. | Fully meets objective. Although ORV safety closures would not be provided, areas where these occur would be closed year-round as SMAs. Village beaches would be closed to ORVs year-round. Reduced speed limits would also apply in all areas. | Fully meets objective as ORV safety closures would be provided. Reduced speed limits would also apply in all areas. Beach width requirements would limit some ORV use in narrow beach areas and village beaches would be closed to ORV use during the summer. | Fully meets objective. Speed limits, village beach closures, and safety closures would be provided. Also, additional pedestrian safety and right-of-way requirements would provide increased protection. |
| Seashore Operations | | | | | | |
| Identify operational needs and costs to fully implement an ORV management plan. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. | Meets objective to a large degree as implementation costs have been identified, but carries a degree of uncertainty. |
| Identify potential sources of funding necessary to implement an ORV management plan. | Meets objective to a moderate degree. Funding expected under annual budget, but no additional funding source provided. | Meets objective to a moderate degree. Funding expected under annual budget, but no additional funding source provided. | Meets objective to a large degree. Funding expected under annual budget, additional funding would occur by from permit fees utilizing cost recovery. | Meets objective to a large degree. Funding expected under annual budget, additional funding would occur by from permit fees utilizing cost recovery. | Meets objective to a large degree. Funding expected under annual budget, additional funding would occur by from permit fees utilizing cost recovery. | Meets objective to a large degree. Funding expected under annual budget, additional funding would occur by from permit fees utilizing cost recovery. |
| Provide consistent guidelines, according to site conditions, for ORV routes, ramps, and signage. | Meets objective to some degree. Guidelines are not set and conditions would not be predictable. | Meets objective to a moderate degree. Increased signage would be consistent, but no consistent guidelines for routes and ramps would exist. | Meets objective to a large degree. Guidelines for ramp establishment and maintenance, signage, and routes would be established. | Meets objective to a large degree. Guidelines for ramp establishment and maintenance, signage, and routes would be established. | Meets objective to a large degree. Guidelines for ramp establishment and maintenance, signage, and routes would be established. | Meets objective to a large degree. Guidelines for ramp establishment and maintenance, signage, and routes would be established. |

Note: Objectives are measured as fully meets objective, largely meets objective, moderately meets objective, or meets objective to some degree.

TABLE 13. ENVIRONMENTAL IMPACT SUMMARY BY ALTERNATIVE

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative | | | | | | | | | | | | | | | | | | |
|---|---|--|--|--|--|--|---|---|--|--|--|--|---|---|---|--|--|--|--|--|--|--|--|--|
| Wetlands and Floodplains | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetlands | <p>Impacts of the Alternative on Marine Intertidal Wetlands: Under all alternatives, there would be short term, negligible adverse impacts to marine intertidal wetlands due to continued ORV use in these areas</p> <table border="1"> <tr> <td>Impacts of the Alternative: Under alternative A, there would be long-term minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes.</td><td>Impacts of the Alternative: Under alternative B, there would be long-term minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes.</td><td>Impacts of the Alternative: Under alternative C, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by the installation of signage.</td><td>Impacts of the Alternative: Under alternative D, there would be long-term negligible to minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side, which would not be protected with signage. Impacts to vegetated wetlands along interior ORV routes would continue.</td><td>Impacts of the Alternative: Under alternative E, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by signage and closures of soundside access points.</td><td>Impacts of the Alternative: Under alternative F, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by the installation of signage.</td></tr> <tr> <td>There would be no construction (or related impacts) under the no-action alternatives.</td><td>There would be no construction (or related impacts) under the no-action alternatives.</td><td>Construction activities would avoid wetland areas, resulting in indirect, long-term negligible adverse impacts to wetlands.</td><td>Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands.</td><td>Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands.</td><td>Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands.</td></tr> <tr> <td>Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse.</td><td>Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse.</td><td>Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse.</td><td>Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse.</td><td>Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse.</td><td>Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse.</td></tr> </table> | | | | | | Impacts of the Alternative: Under alternative A, there would be long-term minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. | Impacts of the Alternative: Under alternative B, there would be long-term minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. | Impacts of the Alternative: Under alternative C, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by the installation of signage. | Impacts of the Alternative: Under alternative D, there would be long-term negligible to minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side, which would not be protected with signage. Impacts to vegetated wetlands along interior ORV routes would continue. | Impacts of the Alternative: Under alternative E, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by signage and closures of soundside access points. | Impacts of the Alternative: Under alternative F, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by the installation of signage. | There would be no construction (or related impacts) under the no-action alternatives. | There would be no construction (or related impacts) under the no-action alternatives. | Construction activities would avoid wetland areas, resulting in indirect, long-term negligible adverse impacts to wetlands. | Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands. | Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands. | Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. |
| Impacts of the Alternative: Under alternative A, there would be long-term minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. | Impacts of the Alternative: Under alternative B, there would be long-term minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. | Impacts of the Alternative: Under alternative C, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by the installation of signage. | Impacts of the Alternative: Under alternative D, there would be long-term negligible to minor adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side, which would not be protected with signage. Impacts to vegetated wetlands along interior ORV routes would continue. | Impacts of the Alternative: Under alternative E, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by signage and closures of soundside access points. | Impacts of the Alternative: Under alternative F, there would be long-term negligible adverse impacts to wetlands due to direct damage from ORV use in and around vegetated wetlands on the sound side and along interior ORV routes. Impacts to soundside wetlands would remain at a negligible level due to the protection provided by the installation of signage. | | | | | | | | | | | | | | | | | | | |
| There would be no construction (or related impacts) under the no-action alternatives. | There would be no construction (or related impacts) under the no-action alternatives. | Construction activities would avoid wetland areas, resulting in indirect, long-term negligible adverse impacts to wetlands. | Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands. | Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands. | Construction activities would avoid wetland areas, resulting in indirect long-term negligible adverse impacts to wetlands. | | | | | | | | | | | | | | | | | | | |
| Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wetlands would be long-term minor to moderate adverse. | | | | | | | | | | | | | | | | | | | |
| Floodplains | <p>Impacts of the Alternative: There would be no construction under alternative A. As a result, there would be no impacts to the functions or values of floodplains.</p> <p>Cumulative Impacts: No cumulative impacts would occur.</p> | <p>Impacts of the Alternative: There would be no construction under alternative B. As a result, there would be no impacts to the functions or values of floodplains.</p> <p>Cumulative Impacts: No cumulative impacts would occur.</p> | <p>Impacts of the Alternative: Under alternative C, there would be long-term minor adverse impacts to floodplains due to the construction or expansion of seven parking areas in the floodplain.</p> <p>Cumulative Impacts: Cumulative impacts to floodplains would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Under alternative D there would be long-term negligible adverse impacts to floodplains due to the location of four ORV access ramps in the 100-year floodplain.</p> <p>Cumulative Impacts: Cumulative impacts to floodplains would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Under alternative E, there would be long-term minor adverse impacts to floodplains due to the construction or expansion of 14 parking areas in the floodplain.</p> <p>Cumulative Impacts: Cumulative impacts to floodplains would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Under alternative F, there would be long-term minor adverse impacts to floodplains due to the construction or expansion of 12 surfaced and 2 unsurfaced parking areas in the floodplain.</p> <p>Cumulative Impacts: Cumulative impacts to floodplains would be long-term minor to moderate adverse.</p> | | | | | | | | | | | | | | | | | | |

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| Federally Listed Threatened or Endangered Species | | | | | | |
| Piping Plover | <p>Impacts of the Alternative: Overall, impacts to piping plover from resource management activities (primarily as a result of surveys and field activities) would be long-term minor to moderate adverse. Although the management of the species would provide a certain level of benefit, the manner in which buffers would be established, along with the need to adjust buffers frequently would have an adverse impact on the species.</p> <p>Overall, impacts to piping plover from ORV and other recreational use would be long-term moderate to major adverse as much of the Seashore would be open to recreational use, with an increased potential that piping plover could be impacted due to disturbance from ORV use and other recreational activities. Lack of a permit system for education and law enforcement, no night-driving restrictions, and lack of compliance with pet leash requirements would contribute substantially to these adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term moderate to major adverse.</p> | <p>Impacts of the Alternative: Overall, impacts under alternative B from resource management activities (primarily resulting from the effects of surveying and field activities) would be long-term minor to moderate beneficial. Buffers for piping plover would be larger and provide more protection compared to buffers under alternative A. Minor adverse impacts would occur from human presence during monitoring activities, but on the whole the establishment of prenesting closures early in the breeding season, monitoring activities, education and outreach efforts, and establishment of prescribed buffers would provide long-term minor to moderate beneficial impacts to the species.</p> <p>Overall, impacts to piping plover from ORV and other recreational use would be long-term moderate adverse. While some buffers would be increased in an attempt to separate recreational uses from piping plover, access to these buffers would be provided at all Seashore beaches and could result in intentional or un-intentional non-compliance (i.e., when signs are washed out), which would impact the species. Adverse impacts would also occur due to limited prenesting protection outside of the points and spits, and the potential for protective buffers to be reduced during critical life stages of plover chicks.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term moderate adverse.</p> | <p>Impacts of the Alternative: Overall impacts under alternative C from resources management activities (primarily resulting from the effects of surveying and field activities) would be long-term moderate beneficial. As with alternative B, minor adverse impacts would occur from human presence during monitoring activities, but on the whole the establishment of SMAs early in the breeding season, monitoring activities, and establishment of prescribed buffers would provide long-term moderate beneficial impacts to the species.</p> <p>Overall, impacts to piping plover from ORV and other recreational use would be long-term minor adverse. The establishment of the SMAs which proactively reduce or preclude recreational use early in the breeding season, ORV permit requirements, seasonal night-driving restrictions, and pet and other recreational activity restrictions would all provide benefits in terms of species protection. As there would still be some opportunity for recreational use to come in contact with and impact piping plovers, and the fact that alternative C would still include some level of pedestrian access to three SMAs during a portion of the breeding season, impacts to piping plover would be long-term minor adverse.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term minor adverse.</p> | <p>Impacts of the Alternative: Overall impacts to piping plover from resources management activities (primarily resulting from the effects of surveying and field activities) under alternative D would be long-term moderate to major beneficial. As with all species management activities, minor adverse impacts would occur from human presence during monitoring, but on the whole the implementation of SMAs that prohibit ORV use year-round and only allow pedestrian access outside of the breeding season, establishment of prenesting closures early in the breeding season, monitoring activities, and establishment of prescribed buffers would provide long-term moderate to major beneficial impacts to the species.</p> <p>Overall impacts from ORV and other recreational use would be long-term minor adverse. The establishment of SMAs that are closed to ORVs year-round and managed under ML1 procedures during the breeding season would proactively preclude recreational use early in the breeding season from large areas of the Seashore, which would reduce the potential for disturbance to plovers during critical life stages. This protection, combined with ORV permit requirements, seasonal night-driving restriction, and pet and other recreational activity restrictions would all provide benefits in terms of species protection. Although there would be benefits from seasonal night-driving restrictions, they would not be as great as other action alternatives because driving after dark (until 10:00 p.m.) would still be occurring, even during seasonal restrictions. The potential for adverse impacts would exist from the park-and-stay option under this alternative. As there would still be some opportunity for recreational use to come in contact with and impact the species, impacts would be long-term minor to moderate adverse.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term minor adverse.</p> | <p>Impacts of the Alternative: Overall impacts under alternative E from resources management activities (primarily resulting from the effects of surveying and field activities) would be long-term moderate and beneficial for piping plovers. As with all species management activities, minor adverse impacts would occur from human presence during monitoring activities, but on the whole the establishment of SMAs early in the breeding season, monitoring activities, and establishment of prescribed buffers would provide long-term moderate beneficial impacts to the species. Long-term moderate benefits to nonbreeding populations would be greater under alternative F than under alternatives C or E because of the addition of the year-round VFAs.</p> <p>Overall impacts under alternative F from ORV and other recreational use would be long-term minor to moderate adverse. The establishment of prenesting closures, year-round and seasonal VFAs, ORV permit requirements, and pet and other recreational activity restrictions would all provide benefits in terms of species protection. As alternative F would provide for more flexible access to various areas of the Seashore, the potential for disturbance to piping plover is increased over alternatives C and D, resulting in long-term minor to moderate adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Overall impacts under alternative F from resources management activities (primarily resulting from the effects of surveying and field activities) would be long-term moderate and beneficial for piping plovers. As with all species management activities, minor adverse impacts would occur from human presence during monitoring activities, but on the whole the establishment of prenesting closures, monitoring activities, and establishment of prescribed buffers would provide long-term moderate beneficial impacts to the species. Long-term moderate benefits to nonbreeding populations would be greater under alternative F than under alternatives C or E because of the addition of the year-round VFAs.</p> <p>Overall impacts under alternative F from ORV and other recreational use would be long-term minor to moderate adverse. The establishment of prenesting closures, year-round and seasonal VFAs, ORV permit requirements, and pet and other recreational activity restrictions would all provide benefits in terms of species protection. As alternative F would provide for more flexible access to various areas of the Seashore, the potential for disturbance to piping plover is increased over alternatives C and D, resulting in long-term minor to moderate adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to piping plover would be long-term minor to moderate adverse.</p> |

Table 13. Environmental Impact Summary by Alternative

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| Sea Turtles | <p>Impacts of the Alternative: Overall, resources management activities under alternative A would have long-term moderate benefits due to the protection provided to sea turtles. Overall, ORV and other recreational use under alternative A would result in long-term major adverse impacts to sea turtles due to the amount of Seashore available for ORV use and the lack of night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term moderate to major adverse.</p> | <p>Impacts of the Alternative: Overall, resource management activities under alternative B would have long-term moderate benefits due to the protection provided to sea turtles. Although additional restrictions and regulations would help lessen some of the impacts from ORV use and other recreational activities, overall, the impacts would be long-term moderate adverse.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term moderate adverse.</p> | <p>Impacts of the Alternative: Overall, resource management activities under alternative C would have long-term moderate to major beneficial impacts due to the added protection provided to sea turtles. Restrictions placed on nonessential, recreational ORV use under alternative C would provide substantial long-term benefits to sea turtles, including seasonal night-driving restrictions that close the beach before dark (7:00 p.m.), some adverse impacts would still occur in areas where their use is allowed. Therefore, overall, ORV and other recreational use would have long-term minor adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Overall, similar to alternative C, management activities under alternative D would result in long-term moderate to major beneficial impacts.</p> <p>While restrictions placed on ORV use under alternative D would provide long-term moderate to major beneficial impacts, similar to alternative C, there would still be some level of adverse impact to sea turtles in areas where ORV use and beach fires are allowed; therefore, overall impacts from ORV and other recreational use would be long-term minor adverse.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term minor adverse.</p> | <p>Impacts of the Alternative: Management activities would provide long-term moderate to major beneficial impacts to sea turtles. While additional restrictions and regulations would help lessen some of the impacts from ORVs and other recreational activities, overall, the impacts would be long-term moderate adverse from allowing night driving until 10:00 p.m., and due to increased recreational access throughout the Seashore during the turtle nesting season, including a park-and-stay option for ORVs at selected points and spits.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term moderate adverse.</p> | <p>Impacts of the Alternative: Overall, resource management activities would provide long-term moderate to major beneficial impacts to sea turtles. While additional restrictions, such as prohibiting night driving from 9:00 p.m. to 7:00 a.m and regulations would help lessen some of the impacts from ORV and other recreational use, overall, the impacts would be long-term minor to moderate adverse, due to not prohibiting night driving prior to 9:00 p.m. and the earlier re-opening of prenesting areas (after shorebird breeding activity has concluded), resulting in increased recreational access throughout the Seashore during the sea turtle nesting season.</p> <p>Cumulative Impacts: Cumulative impacts to sea turtles would be long-term minor to moderate adverse.</p> |
| Seabeach Amaranth | <p>Impacts of the Alternative: Overall, because of the protection of seabeach amaranth habitat and plants under alternative A, resources management actions would have long-term minor to moderate beneficial impacts, if plants are detected. Overall, ORV and other recreational use under alternative A would have long-term moderate adverse impacts as plants may go undetected and therefore unprotected from this use.</p> <p>Cumulative Impacts: Cumulative impacts to seabeach amaranth would be long-term moderate adverse.</p> | <p>Impacts of the Alternative: Overall, because of the protection of seabeach amaranth habitat and plants under alternative B, resources management actions would have long-term minor to moderate beneficial impacts, if plants are detected. Overall, ORV and other recreational use would result in long-term moderate adverse impacts. Slightly more protection would be provided for the species when compared to alternative A, due to shorebird breeding closures being larger and lasting longer.</p> <p>Cumulative Impacts: Cumulative to seabeach amaranth would be long-term moderate adverse.</p> | <p>Impacts of the Alternative: Overall, because of the protection of seabeach amaranth habitat and plants under alternative C, resources management actions would have long-term moderate beneficial impacts to seabeach amaranth as the establishment of SMAs and increased protection for the species would occur compared to alternatives A and B. Overall, ORV and other recreational use would result in long-term minor to moderate adverse impacts. Because of the establishment of SMAs and protection of approximately 40 miles of beach, the adverse impacts under alternative C would likely be long-term minor to moderate adverse.</p> <p>Cumulative Impacts: Cumulative impacts to seabeach amaranth would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Overall, because of the increased level of protection of seabeach amaranth habitat and plants under alternative D, when compared to other alternatives, resources management actions would have long-term moderate to major beneficial impacts. Overall ORV and other recreational use would result in long-term minor adverse impacts. Because the establishment of SMAs closed to ORVs year-round would protect approximately 40 miles of beach, the adverse impacts under alternative D would be greatly reduced compared to the other alternatives and result in long-term minor adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to seabeach amaranth would be long-term minor adverse.</p> | <p>Impacts of the Alternative: Overall, because of the protection of seabeach amaranth habitat and plants under alternative E, resources management actions would have long-term minor to moderate beneficial impacts as ORV access to more areas would be allowed during the germination period, than under action alternatives C and D. Overall, ORV and other recreational use would have long-term minor to moderate adverse impacts to seabeach amaranth due to the increased level of recreational access allowed when compared to the other action alternatives.</p> <p>Cumulative Impacts: Cumulative impacts to seabeach amaranth would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: Overall, because of the protection of seabeach amaranth habitat and plants under alternative F, resources management actions would have long-term minor to moderate beneficial impacts as ORV access to more areas would be allowed during the germination period, than under action alternatives C and D. Overall, ORV and other recreational use would be similar to those under alternative E and result in long-term minor to moderate adverse impacts to seabeach amaranth.</p> <p>Cumulative Impacts: Cumulative impacts to seabeach amaranth would be long-term minor to moderate adverse.</p> |

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| State-Listed and Special Status Species | | | | | | |
| American Oystercatcher | <p>Impacts of the Alternative: Impacts would be long-term minor to moderate adverse as surveying and lack of specific prenesting closures for this species may miss early nesters. Piping plover prenesting closures, which could be utilized by this species as well, would not protect a number of American oystercatcher nest sites used in recent years. Also, buffer distances based on bird behavior may not provide adequate protection for the species.</p> | <p>Impacts of the Alternative: Establishment of piping plover prenesting closures earlier in the season that could be used by oystercatchers and establishment of larger, pre-set buffers would result in long-term beneficial impacts to American oystercatchers. While there would still be minor adverse impacts related to human disturbance during field activities, resources management activities on the whole would provide information and result in actions that would be beneficial to the species.</p> | <p>Impacts of the Alternative: Implementation of 10 SMAs that are closed to ORVs during the breeding season would provide a proactive resource closure early in the breeding season. Establishment of prenesting closures earlier in the season and establishment of larger, pre-set buffers would result in long-term beneficial impacts to American oystercatchers. While there would still be minor adverse impacts related to human disturbance during field activities, on the whole, resources management activities would provide information that would enable the implementation of adaptive management initiatives and contribute to better management. These activities would result in long-term beneficial impacts to the American oystercatcher, greater than those provided under alternative B.</p> | <p>Impacts of the Alternative: Establishment of 10 SMAs that are closed to ORVs year-round and all managed under ML1 procedures during the breeding season would provide long-term benefits to breeding and wintering American oystercatchers, greater than those under alternative C. Additional benefits would be provided from surveying and closures outside of these established SMAs, as well as from the education and outreach provided. These surveying and field activities would provide information that would enable the implementation of adaptive management initiatives and contribute to better management. These activities would result in long-term beneficial impacts to this species, greater than those provided under alternative B.</p> | <p>Impacts of the Alternative: Implementation of 10 SMAs, 7 of which are closed to ORVs during the breeding season, would provide a proactive resource closure early in the breeding season. Establishment of prenesting closures earlier in the season and establishment of larger, pre-set buffers would result in long-term beneficial impacts to American oystercatchers. While there would still be minor adverse impacts from human disturbance during field activities, resources management activities on the whole would provide information that would enable the implementation of adaptive management initiatives and contribute to better management. These activities would result in long-term beneficial impacts to this species, greater than those provided under alternative B.</p> | <p>Impacts of the Alternative: Implementation of prenesting closures would provide a proactive resource closure early in the breeding season. Seasonal and year-round VFAs that total 39 miles of Seashore would provide additional areas with less disturbance for shorebirds. Establishment of prenesting closures earlier in the season and establishment of larger, pre-set buffers would result in long-term beneficial impacts to American oystercatchers. While there would still be minor adverse impacts related to human disturbance during field activities, resources management activities on the whole would provide information that would enable the implementation of adaptive management initiatives and contribute to better management. These activities would result in long-term beneficial impacts to the species, greater than those provided under alternative B.</p> |

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| American Oystercatcher (continued) | Impacts would be long-term moderate to major adverse as buffers that adjust frequently based on bird behavior are more subject to non-compliance. The lack of designated VFAs, a permitting system, carrying capacity, or seasonal night-driving restrictions, and allowing pets at the Seashore during breeding season would contribute to these adverse impacts. | Establishment of prenesting closures for piping plover earlier in the season, implementation of larger, more immediate buffers, longer lasting closures for American oystercatchers once breeding behavior occurs, and night-driving restrictions would benefit the American oystercatcher. However, recreational use, with no carrying capacity, would still occur in the vicinity of this species and the established buffers may not be large enough to afford adequate protection. Because the birds would not be under constant observation, disturbance may go undetected and implementation of adequate buffers may be delayed in some nesting locations. Compliance with closures may not be absolute, resulting in minor to moderate adverse impacts if non-compliance occurs. Further adverse impacts would result from allowing pets in the Seashore during breeding season, resulting in the possibility of non-compliance with these regulations. Because of these factors, impacts to American oystercatchers from ORV use and other recreational activities would be long term moderate adverse. | Implementation of a permit system with an educational component, larger buffer sizes, seasonal night-driving restrictions, establishment of breeding and nonbreeding SMAs, and not allowing pets in SMAs would benefit the American oystercatcher. SMAs would provide a proactive method of limiting recreational uses early in the breeding season, and limit the potential for impacts to state-listed/special status species. However, alternative C does manage three SMAs under ML2 procedures, which provide for some level of pedestrian access into these areas, and introduces the potential for impacts to the species. Although there would be some protection measures in place, ORV and other recreational use could still have impacts to the species, resulting in long-term minor to moderate adverse impacts to American oystercatchers. | Providing large SMAs that are closed year-round to ORVs and closed to pedestrians during the breeding season would provide large undisturbed areas for both breeding and nonbreeding oystercatchers. Further benefits would be provided by seasonal night-driving restrictions, the establishment of a permit system with an educational component, and prohibition of pets in SMAs year-round. With these measures in place, impacts to American oystercatchers from ORV and other recreational use would be long-term minor adverse, as the chance of disturbance still exists, but would be lower than that under the other alternatives evaluated. | Implementation of a permit system with an educational component, larger buffer sizes, seasonal night-driving restrictions, restrictions on pets in SMAs, and establishment of breeding and nonbreeding SMAs would benefit the American oystercatcher. SMAs would provide a proactive method of limiting recreational uses early in the breeding season, and limit the potential for impacts to state-listed/special status species. However, alternative E does allow an ORV access corridor at three SMAs managed under ML2 procedures during the breeding season (more than the other action alternatives), which provide for some level of pedestrian or ORV access into these area, which introduces the potential for impacts to the species. Although there would be some protection measures in place, recreational use could still result in long-term minor to moderate adverse impacts to American oystercatchers. | Implementation of a permit system with an educational component, prenesting closures, seasonal night-driving restrictions, allowing pets under the regulations of 36 CFR 2.15 with the additional prohibition of pets in resource closures and in pedestrian shoreline access areas in front of (i.e., seaward of) bird prenesting areas and establishment of seasonal and year-round VFAs that total 39 miles of Seashore would benefit the American oystercatcher. Prenesting closures would provide a proactive method of limiting recreational uses early in the breeding season, and limit the potential for impacts to state-listed/special status species, with additional areas that are relatively less disturbed provided by prenesting closures. However, alternative F does manage all areas of the Seashore to allow for ORV and/or pedestrian access, which introduces the potential for impacts to the species. As there would be some protection measures in place, but recreational use could still have impacts to the species, impacts to American oystercatchers would be long-term minor to moderate adverse. |

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| Colonial Waterbirds | <p>Impacts of the Alternative: Impacts would be long-term minor to moderate adverse as no prenesting closures would be established for colonial waterbirds. Some species, such as terns and black skimmers, may be able to utilize the prenesting closures established for piping plovers; however, those prenesting areas would not protect a number of colonial waterbird nest sites used in recent years. Also, buffer distances based on bird behavior may not provide adequate protection for the species.</p> <p>Impacts would be long-term moderate to major adverse as buffers may not be adequate to protect the species, and disturbance from recreational uses is more likely. The lack of designated VFAs, a permitting system, carrying capacity, or seasonal night-driving restrictions, and allowing pets in the vicinity of breeding birds would also contribute to adverse impacts.</p> | <p>Impacts of the Alternative: Establishment of piping plover prenesting closures earlier in the season that would be used by some colonial waterbird species and establishment of larger, pre-set buffers would result in long-term beneficial impacts to colonial waterbirds. While there would still be minor adverse impacts related to human disturbance during field activities, resources management activities on the whole would provide information and result in actions that would be beneficial to the species.</p> <p>Impacts to colonial waterbirds from ORV and other recreational use would be long-term moderate adverse, for the same reasons as American oystercatchers under this alternative.</p> | <p>Impacts of the Alternative: Impacts to colonial waterbirds from surveying and field activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers.</p> | <p>Impacts of the Alternative: Impacts to colonial waterbirds from surveying and field activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers.</p> | <p>Impacts of the Alternative: Impacts to colonial waterbirds from resources management activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers.</p> | <p>Impacts of the Alternative: Impacts to colonial waterbirds from resources management activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers.</p> |

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| Wilson's Plover | <p>Impacts of the Alternative: Impacts would be long-term minor adverse as the habitat for this species would be well surveyed during piping plover surveys and this species would be able to take advantage of management measures for piping plover as their breeding seasons and habitat requirements are similar. Also, buffer distances based on bird behavior may not provide adequate protection for the species. Some benefits may occur from incidental management of Wilson's plover during piping plover management activities, both during breeding and nonbreeding seasons.</p> <p>Impacts would be long-term moderate to major adverse as no specific management would be provided for this species, although they could utilize buffers and closures established for piping plover. The lack of designated VFAs, a permitting system, carrying capacity, or seasonal night-driving restrictions, and allowing pets at the Seashore during breeding season would contribute to these adverse impacts.</p> | <p>Impacts of the Alternative: Establishment of piping plover prenesting closures earlier in the season that could be used by other species and establishment of larger, pre-set buffers for piping plover, used by Wilson's plover, would result in long-term beneficial impacts to Wilson's plover. While there would still be minor adverse impacts related to human disturbance during field activities, species surveying and field activities on the whole would provide information and result in actions that would be beneficial to the species.</p> <p>Impacts to Wilson's plover from ORV and other recreational use would be long-term minor to moderate adverse. Although this species would face the same adverse impacts as American oystercatchers and colonial waterbirds, it also tends to utilize closures for piping plover and would therefore be provided slightly more protection than other state-listed/special status species.</p> | <p>Impacts of the Alternative: Impacts to Wilson's plover from surveying and field activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers, with slightly greater benefits as this species would also benefit from the management measures applied to piping plover.</p> <p>Impacts to Wilson's plover from ORV and other recreational use would be long-term minor adverse, less than those under alternative A and B. Although this species would face the same adverse impacts as American oystercatchers and colonial waterbirds, it also tends to utilize closures for piping plover, in addition to the specific buffers/closures provided for the species, and would therefore be provided slightly more protection than other state-listed/special status species.</p> | <p>Impacts of the Alternative: Impacts to Wilson's plover from surveying and field activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers, with slightly greater benefits as this species would also benefit from the management measures applied to piping plover.</p> <p>Impacts to Wilson's plover from ORV and other recreational use would be long-term negligible to minor adverse. Although this species would face the same adverse impacts as American oystercatchers and colonial waterbirds, it also tends to utilize closures for piping plover, in addition to the buffers/closures provided specifically for this species, and would therefore be provided slightly more protection than other state-listed/special status species.</p> | <p>Impacts of the Alternative: Impacts to Wilson's plover from resources management activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers, with slightly greater benefits as this species would also benefit from the management measures applied to piping plover.</p> <p>Impacts to Wilson's plover from ORV and other recreational use would be long-term minor adverse. Although this species would face the same adverse impacts as American oystercatchers and colonial waterbirds, it also tends to utilize closures for piping plover, in addition to the buffers/closures provided specifically for this species, and would therefore be provided slightly more protection than other state-listed/special status species.</p> | <p>Impacts of the Alternative: Impacts to Wilson's plover from resources management activities would be long-term beneficial, for the same reasons as discussed above for American oystercatchers, with slightly greater benefits as this species would also benefit from the management measures applied to piping plover.</p> <p>Impacts to Wilson's plover from ORV and other recreational use would be long-term minor adverse. Although this species would face the same adverse impacts as American oystercatchers and colonial waterbirds, it also tends to utilize closures for piping plover, in addition to the buffers/closures provided specifically for this species, and would therefore be provided slightly more protection than other state-listed/special status species.</p> |

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| Red Knot | <p>Impacts of the Alternative Common to All: Many of the surveying and field activities for other species would occur outside of the primary time when the red knot is a resident at the Seashore. Therefore, any impacts to this species from surveying and field activities for other species would be long-term negligible adverse.</p> <p>Impacts to nonbreeding red knot would be long-term minor adverse as their prime foraging habitat (ocean shoreline) would not be afforded protection by nonbreeding closures, although the ability of this species to use wintering closures for piping plover at inlets and Cape Point would result in some benefit.</p> <p>Impacts would be long-term moderate adverse as no specific management would be provided for this species especially during a key life stage of wintering. The lack of designated VFAs, a permitting system, or night-driving restrictions when red knots are at the Seashore, and allowing pets at the Seashore during the migrating/nonbreeding season would contribute to these adverse impacts. Impacts to red knots would be lower than other species as they would not be subject to impacts during their breeding cycle and their use of the Seashore corresponds to times of lower visitation.</p> | <p>The red knot would benefit from extended breeding season closures for other species and from wintering closures for piping plover at the inlets and Cape Point. Impacts to nonbreeding red knot would be long-term minor adverse as their prime foraging habitat (ocean shoreline) would not be afforded protection by nonbreeding closures.</p> <p>Impacts to red knots from ORV and other recreational use would be long-term moderate adverse as no specific management would be provided for this species especially during a key life stage of wintering. Although this species may benefit from longer lasting breeding season closures for other species and from winter closures established for piping plovers, the lack of designated VFAs, a year-round permitting system, no night-driving restrictions when red knots are at the Seashore, and allowing pets at the Seashore during the migrating / nonbreeding season would contribute to these adverse impacts.</p> | <p>Nonbreeding Shorebird SMAs and the establishment of VFAs along the ocean shoreline would result in beneficial impacts to nonbreeding red knots. However, the ability of this species to use wintering closures that have been established for piping plover as well as the establishment of SMAs, some of which are closed to ORVs year-round, would be beneficial to those red knot that happen to use those areas, and overall result in long-term beneficial impacts to the species when compared to alternatives A and B.</p> <p>Impacts to red knot from recreation and other activities would be long-term minor adverse due to the additional nonbreeding closures provided under alternative C that offer this wintering species further protection.</p> | <p>Nonbreeding Shorebird SMAs and the establishment of VFAs along the ocean shoreline would result in beneficial impacts to nonbreeding red knots. However, the ability of this species to use wintering closures that have been established for piping plover as well as the establishment of SMAs, some of which are closed year-round, would be beneficial, and overall result in long-term beneficial impacts to the species when compared to alternatives A and B.</p> <p>Impacts to red knot from recreation and other activities would be long-term negligible to minor adverse due to the additional nonbreeding closures provided under alternative D that offer this wintering species further protection, as well as the large year-round SMAs that would offer further protection during red knot wintering.</p> | <p>The ability of this species to use wintering closures that have been established for piping plover as well as the establishment of SMAs, some of which are closed year-round, would be beneficial, and overall result in long-term beneficial impacts to the species when compared to alternatives A and B.</p> <p>Impacts to red knot from ORV and other recreational use would be long-term minor adverse due to the additional nonbreeding closures provided under alternative E that offer this wintering species further protection; however, there would be greater adverse impacts than under alternatives D or F due to fewer miles of shoreline being closed to ORVs under alternative E during the nonbreeding season.</p> | <p>The ability of this species to use wintering closures that have been established for piping plover as well as the establishment of year-round and seasonal VFAs over 39 miles of the Seashore (of which 26 miles would be year-round and provide protection of nonbreeding habitat) would be beneficial, and overall result in long-term beneficial impacts to the species when compared to alternatives A and B.</p> <p>Impacts to red knot from ORV and other recreational use would be long-term minor adverse due to the wintering closures established for piping plover, as well as the 26 miles of year-round VFAs that provide less disturbed nonbreeding habitat.</p> |
| All State-Listed and Special Status Species | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term moderate to major adverse. | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term moderate adverse. | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term minor to moderate adverse. | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term minor adverse. | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term minor to moderate adverse. | Cumulative Impacts (for all State-listed and Special Status Species): Cumulative impacts to state-listed and special status species would be long-term minor to moderate adverse. |

Table 13. Environmental Impact Summary by Alternative

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| Wildlife and Wildlife Habitat - Other Bird Species | Impacts of the Alternative Common to All: Many of the surveying and field activities for protected species would occur outside of the primary time when other bird species are residents at the Seashore. Therefore, any impacts to other bird species from surveying and field activities for protected species would be long-term negligible adverse. | | | | | |
| | Impacts of the Alternative: Impacts to other bird species from resources management activities would be long-term minor adverse as nonbreeding closures would not be species-specific and therefore would not protect important habitat areas such as the ocean shoreline. Impacts of ORV and other recreational use would be long-term moderate adverse as no specific management would be provided for this species, increasing the possibility of disturbance to the species from recreational use. The lack of designated VFAs, a permitting system, or night-driving restrictions during the time period when these species are present at the Seashore, and allowing ORVs, people and pets at the Seashore during the nonbreeding season in the vicinity of these species would contribute to adverse impacts. There would be no construction and therefore no construction-related to disturbance to other bird species under the no-action alternatives. | Impacts of the Alternative: Impacts to other bird species would be long-term minor adverse as nonbreeding closures would not be species-specific and therefore would not protect important habitat areas such as the ocean shoreline when many of these species are wintering or migrating. Impacts of ORV and other recreational use would be long-term moderate adverse as no specific management would be provided for this species, increasing the possibility of disturbance to the species from recreational use. The lack of designated VFAs, allowing night driving during the time period when other bird species are present at the Seashore, and allowing ORVs, people and pets at the Seashore during the nonbreeding season in the vicinity of these species would contribute to adverse impacts. | Impacts of the Alternative: The establishment of both breeding and nonbreeding SMAs, some of which are closed to ORVs year-round, would result in long-term beneficial impacts to other bird species. Beneficial impacts would be greater than those under alternative C due to the amount of mileage closed to ORV use year-round. Impacts from ORV and other recreational use would be long-term minor adverse due to the additional nonbreeding closures provided under alternative C that offer wintering species further protection. | Impacts of the Alternative: The establishment of SMAs, which would be closed to ORVs year-round, would result in long-term beneficial impacts to other bird species. Beneficial impacts would be greater than those under alternative C due to the amount of mileage closed to ORV use year-round. ORV and other recreational use would result in long term negligible to minor adverse impacts to other bird species due to additional nonbreeding closures provided under alternative E that offer species further protection, with greater adverse impacts than under alternatives D or F from fewer miles of shoreline being closed to ORVs under alternative E during the nonbreeding season. Adverse impacts would be greater than those under alternatives C or D due to the increased level of recreational access provided under alternative E. | Impacts of the Alternative: The establishment of both breeding and nonbreeding SMAs, some of which are closed to ORVs year-round, would result in long-term beneficial impacts to other bird species. ORV and other recreational use would result in long term negligible to minor adverse impacts to other bird species due to additional nonbreeding closures provided under alternative E that offer species further protection, with greater adverse impacts than under alternatives D or F from fewer miles of shoreline being closed to ORVs under alternative E during the nonbreeding season. Adverse impacts would be greater than those under alternatives C or D due to the increased level of recreational access provided under alternative E. | Impacts of the Alternative: The establishment of prenesting areas, seasonal and year-round VFAs, and wintering habitat closures would result in long-term beneficial impacts to other bird species. Additional benefits, when compared to the other alternatives, would be realized under alternative F from nonbreeding closures as well as the 26 miles of year-round VFAs that would provide protection during this time. Impacts to other bird species from ORV and other recreational use would be long-term minor adverse due to the additional nonbreeding closures provided under alternative F that offer wintering species further protection. |
| | Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (other bird species) would be long-term minor to moderate adverse. | Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (other bird species) would be long-term minor adverse. | Cumulative Impacts: Impacts to other bird species from construction activities would be short-term negligible to minor and adverse due to temporary displacement during construction activities. | Cumulative Impacts: Impacts to other bird species from construction activities would be short-term negligible to minor and adverse due to temporary displacement during construction activities. | Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (other bird species) would be long-term negligible to minor adverse. | Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (other bird species) would be long-term minor adverse. |

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| Wildlife and Wildlife Habitat - Invertebrates | Impacts of the Alternative Common to All: The use of vehicles to conduct resources management activities would result in long-term negligible adverse impacts to invertebrates due to the potential for mortality of individual invertebrate species. | | | | | |
| | Impacts of the Alternative: Recreational ORV use would result in long-term minor to moderate adverse impacts to invertebrate species primarily due to mortality arising from unlimited night driving in the intertidal and wrack areas. Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term minor to moderate adverse. | Impacts of the Alternative: Recreational ORV use would result in long-term minor adverse impacts to invertebrate species resulting from the continued use of ORVs in invertebrate habitat. Impacts would be reduced when compared to alternative A due to limitations on ORV use at night and within the larger resources management closures under alternative B. Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term minor to moderate adverse. | Impacts of the Alternative: Recreational ORV use would result in long-term negligible to minor adverse impacts to invertebrate species resulting from the continued use of ORVs in invertebrate habitat. Impacts would be reduced due to longer seasonal restrictions on vehicle use under alternative C. Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term minor adverse. | Impacts of the Alternative: Recreational ORV use would result in long-term negligible adverse impacts to invertebrate species resulting from the continued use of ORVs in invertebrate habitat. Impacts to invertebrates would be reduced under this alternative due to the amount of beach closed to recreational use. Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term negligible to minor adverse. | Impacts of the Alternative: Recreational ORV use would result in long-term minor adverse impacts to invertebrate species resulting from the continued use of ORVs in invertebrate habitat. Adverse impacts would be greater than those under alternatives C or D due to the increased level of recreational access provided under alternative E. Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term minor adverse. | Impacts of the Alternative: Recreational ORV use would result in long-term minor adverse impacts to invertebrate species resulting from the continued use of ORVs in invertebrate habitat. Cumulative Impacts: Cumulative impacts to wildlife and wildlife habitat (invertebrates) would be long-term minor adverse. |
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Table 13. Environmental Impact Summary by Alternative

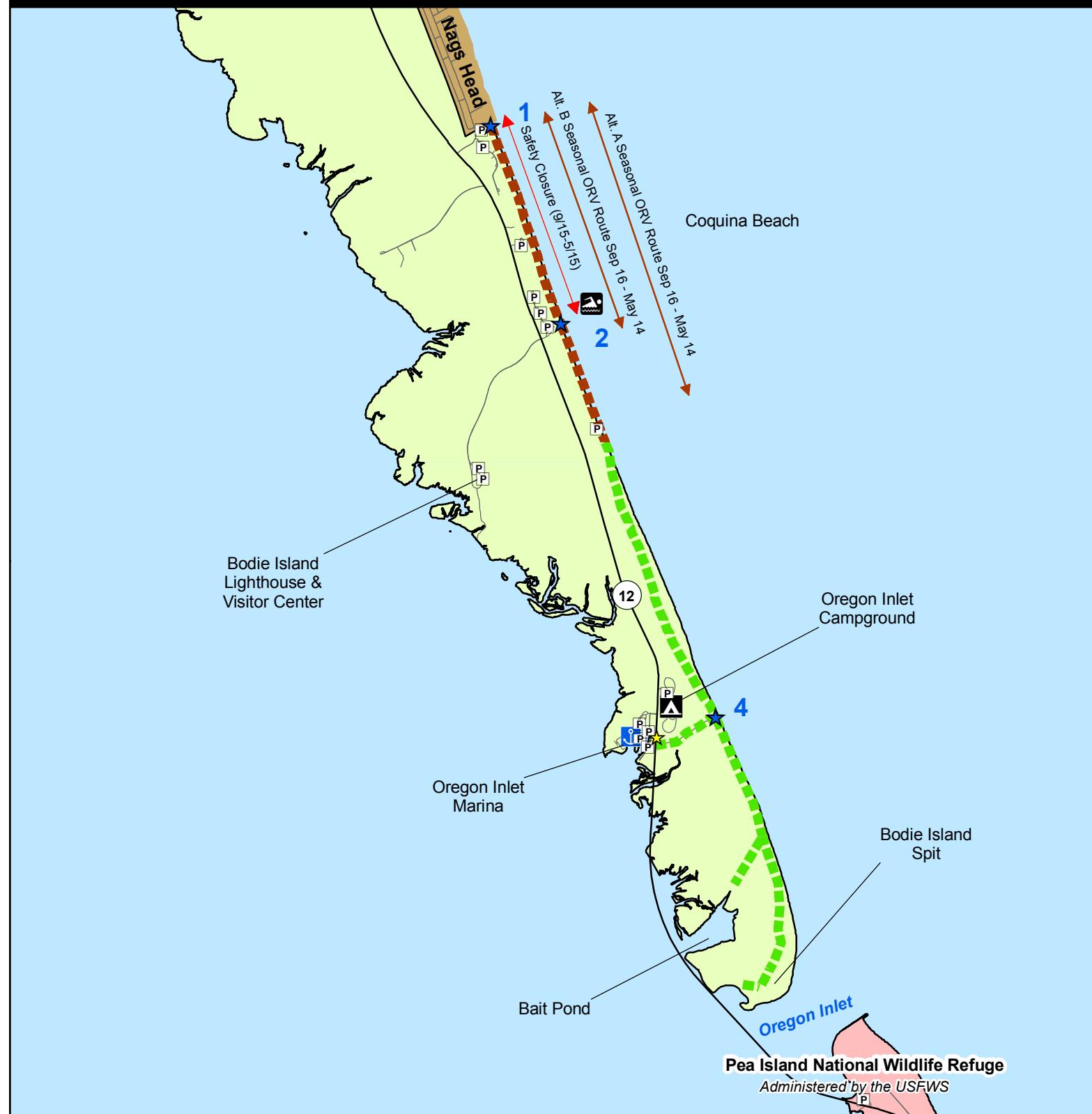
| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
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| Soundscapes | <p>Impacts of the Alternative: Overall, minor to moderate impacts, depending upon vehicle speed, would occur along the beaches where most routes are established for ORV driving. While impacts over the majority of the Seashore beaches would be long-term adverse due to greater numbers of designated year-round ORV routes, impacts would be short-term adverse in the areas in front of village beaches, which are only opened seasonally to ORV use. Short-term adverse impacts would also result during other closure periods along any ORV route for resource protection, safety or administrative purposes. During closures, the potential for increased vehicle concentrations along remaining open ORV routes would increase the frequency of occurrence of single ORV pass-by events. Impacts would remain minor to moderate adverse, depending on vehicle speed, but vehicle noise may dominate the natural soundscape more frequently. In general, as ORV use would continue intermittently over the life of the management plan, vehicle noise would be a recurring, long-term minor to moderate adverse impact in all areas of the Seashore beaches open to ORV driving. Additionally, as closure periods, which have the potential to provide short-term benefits, would be implemented throughout the life of the management plan, long-term benefits would arise. As noise from ORV use would add at least 3 decibels (A-weighted scale) (dBA) to the natural ambient sound levels within the Seashore, wildlife would also experience adverse impacts.</p> <p>Cumulative Impacts: Cumulative impacts to soundscapes would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: As described under alternative A, impacts to the natural soundscape within the Seashore would be minor to moderate, depending upon vehicle speed. Due to the slower speed limits proposed during the peak season when more visitors would be using beach areas, the potential for a greater reduction in visitor awareness would occur under this alternative as compared to alternative A. On beaches where ORV routes are open year-round, including the additional year-round route established under alternative B, impacts would be long-term and adverse, but would potentially become short-term adverse during closure periods. In locations where ORV routes are specifically designated as “seasonal,” impacts would be short-term adverse. As with alternative A, closures of any kind present the potential for increased concentrations of vehicles in areas where ORV routes remain open. In such areas, the potential for vehicle noise to more frequently dominate the sound energy would arise. Aside from the short-term benefits that would occur in areas undergoing closure periods of any kind, additional short-term benefits may occur under alternative B as a result of regulations imposed to seasonally eliminate night driving. Impacts to wildlife would be similar to those under alternative A.</p> <p>Cumulative Impacts: Cumulative impacts to soundscapes would be long-term minor to moderate adverse.</p> | <p>Impacts of the Alternative: As described under alternative B, impacts to the natural soundscape resulting from a 15 mph speed limit would be minor adverse. However, the potential for wildlife and visitor use impacts, as well as the extent of such impacts, may be reduced due to seasonal restrictions and designated VFAs. Like under alternatives A and B, impacts would be long-term adverse for year-round ORV areas, potentially becoming short-term subject to temporary resource closures. As seasonal closures would limit ORV activity to less than a year, short-term adverse impacts would result. Closures of any kind, depending on the closure length, would also provide short-term benefits by providing noise-free periods. Under alternative C there would be areas of negligible impacts due to designated VFAs and greater opportunities for natural sounds to prevail due to longer seasonal closure periods as compared to alternatives A and B. Conversely, fewer open ORV areas and longer seasonal closure periods also present the potential for greater concentrations of ORVs in areas with open ORV routes, thereby increasing the frequency of vehicle noise in such areas. Construction activities would be localized and of short duration and would be minor adverse.</p> <p>Cumulative Impacts: Cumulative impacts to soundscapes would be long-term minor adverse.</p> | <p>Impacts of the Alternative: As described under alternative A, impacts to the natural soundscape resulting from a 15 mph speed limit would be minor adverse. However, the potential for impacts to wildlife and visitor use from ORV noise would be the least under this alternative, as compared to the no-action and all action alternatives due to larger areas of designated vehicle free use. During resource closures, short-term benefits would occur due to the lack of ORV noise and would also be long-term benefits since closures would recur throughout the life of the management plan. The key difference between this alternative and all other alternatives is that alternative D has the greatest extent of long-term negligible adverse impacts resulting from the number of year-round vehicle-free designations. Alternative D also has the greatest extent of long-term benefits to the natural soundscape, visitors and wildlife due to these VFAs. However, this alternative would also present the greatest potential for increased ORV pass-by events that dominate the sound energy in designated ORV areas due to the fewer number of open ORV areas in which vehicles may drive. Like under alternative C, construction related noise impacts from ramp improvements and the construction of a new ramp would be minor adverse.</p> <p>Cumulative Impacts: Cumulative impacts to soundscapes would be long-term minor adverse.</p> | <p>Impacts of the Alternative: As described under alternative A, impacts to the natural soundscape on the beaches resulting from a 15 mph speed limit would be minor adverse. However, like under alternative C, the potential for wildlife and visitor use impacts, as well as the extent of such impacts, may be reduced due to seasonal restrictions and designated VFAs. On the other hand, pass-through zones and earlier openings along seasonal routes under this alternative would potentially provide fewer “noise-free” periods for visitors and wildlife. Vehicle diversions to other open routes may not be as frequent under this alternative as under the other action alternatives given that some seasonal routes are open longer than others. Although under this alternative, more ramps would be constructed, as compared to alternatives C and D, construction-related impacts would remain minor adverse due to the localized nature and short duration of the activities.</p> <p>Cumulative Impacts: Cumulative impacts under alternative E would be long-term minor adverse.</p> | <p>Impacts of the Alternative: As described under alternative A, impacts to the natural soundscape on the beaches resulting from a 15 mph speed limit would be minor adverse. Like under alternatives C and E, the potential for wildlife and visitor use impacts from ORV noise may be reduced due to seasonal closures and designated VFAs. “Noise-free” periods would be greater than alternatives C and E. Vehicle diversions to other open routes may not be as frequent under this alternative as under the other action alternatives given that some seasonal routes are open longer than others. Although under this alternative, more ramps would be constructed, as compared to alternatives C and D, construction-related impacts would remain minor adverse due to the localized nature and short duration of the activities.</p> <p>Cumulative Impacts: Cumulative impacts under alternative F would be long-term minor adverse.</p> |

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| Visitor Use and Experience | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term negligible to minor adverse impacts as some areas would be closed for resource protection, but alternative A would provide the most ORV access of any alternative. Should there be extensive resource closures in a given year, the potential for long-term moderate impacts exists. Those looking for a vehicle free experience at the Seashore would experience long-term moderate adverse impacts as alternative A does not provide for a specific separation of uses or designation of VFAs. Since night driving would be permitted under alternative A, there would be short-term minor adverse impacts to night skies.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term negligible to minor adverse for ORV users and long-term, moderate, and adverse for visitors who desire a vehicle free beach experience.</p> | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term moderate to major adverse impacts as one or more spit or point would be closed for an extended period of time during the breeding season. During the remainder of the year, there would be negligible to minor adverse impacts to ORV users as limited areas would be closed for resource protection. Those looking for a vehicle free experience at the Seashore would experience long-term moderate adverse impacts as alternative B does not provide for a specific separation of uses outside of seasonal ORV closures of village beaches and no VFAs would be designated. Since night driving would be seasonally restricted under alternative B, there would be long-term negligible to minor adverse impacts to night skies, with long-term beneficial impacts during times of seasonal night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term moderate to major adverse for ORV users, and long-term moderate adverse for visitors who desire a vehicle free beach experience.</p> | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term moderate to major adverse impacts as the designation of VFAs and the establishment of the SMAs would seasonally preclude ORV use from some areas of the Seashore that are popular ORV use areas. While three areas managed under ML2 procedures would have pedestrian access corridors, no ORV corridors would be provided in the SMAs, resulting in greater impacts to ORV users. Those looking for a vehicle free experience at the Seashore would experience long-term benefits as alternative C provides for pedestrian corridors in three SMAs under ML2 procedures, as well as providing additional VFAs. Since night driving would be seasonally restricted under alternative C, there would be long-term negligible to minor adverse impacts to night skies, with long-term beneficial impacts during times of seasonal night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term moderate to major adverse to ORV users, and long-term beneficial for visitors who desire a vehicle free beach experience.</p> | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term major adverse impacts as all SMAs and village beaches would be designated as VFAs year-round, which would prohibit the use of ORV in many popular visitor use areas. Those looking for a vehicle free experience at the Seashore would experience long-term benefits as alternative D provides for many designated VFAs throughout the Seashore, although pedestrian access would be prohibited in the SMAs during the breeding season. Since night driving would be seasonally restricted under alternative D, there would be long-term negligible to minor adverse impacts to night skies, with long-term beneficial impacts during times of seasonal night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term major and adverse to ORV users, and long-term beneficial for visitors who desire a vehicle free beach experience.</p> | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term moderate adverse impacts as the designation of VFAs and carrying capacity limits could or would preclude ORV use, either seasonally or year-round, from some areas of the Seashore that are popular visitor use areas. Improved access would be provided to the soundside under this alternative as well. Those looking for a vehicle-free beach experience at the Seashore would experience long-term benefits as alternative F provides for year-round VFAs, as well as seasonal ORV closures in areas such as village beaches, two new pedestrian trails, 14 new or improved parking areas with pedestrian access, and pedestrian access seaward of prenesting closures (prior to observed breeding activity). Since night driving would be seasonally restricted under alternative F, there would be long-term negligible to minor adverse impacts to night skies, with long-term beneficial impacts year-round in VFAs and seasonally on ORV routes during times of seasonal night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term moderate to major and adverse to ORV users, and long-term beneficial for visitors who desire a vehicle free beach experience.</p> | <p>Impacts of the Alternative: Those looking for an experience at the Seashore that includes ORV use would have long-term moderate adverse impacts as the designation of VFAs and carrying capacity limits could or would preclude ORV use, either seasonally or year-round, from some areas of the Seashore that are popular visitor use areas. Improved access would be provided to the soundside under this alternative as well. Those looking for a vehicle-free beach experience at the Seashore would experience long-term benefits as alternative F provides for year-round VFAs, as well as seasonal ORV closures in areas such as village beaches, two new pedestrian trails, 14 new or improved parking areas with pedestrian access, and pedestrian access seaward of prenesting closures (prior to observed breeding activity). Since night driving would be seasonally restricted under alternative F, there would be long-term negligible to minor adverse impacts to night skies, with long-term beneficial impacts year-round in VFAs and seasonally on ORV routes during times of seasonal night-driving restrictions.</p> <p>Cumulative Impacts: Cumulative impacts would be long-term moderate to major and adverse to ORV users, and long-term beneficial for visitors who desire a vehicle free beach experience.</p> |

Table 13. Environmental Impact Summary by Alternative

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|------------------------------|---|---|---|--|---|--|
| Socioeconomic Impacts | <p>Impact of the Alternative to the Region of Influence:</p> <p>The region of influence (ROI) is expected to experience long-term negligible adverse impacts or long-term beneficial impacts depending on the extent of beach closures. The Seashore villages (the villages bordering the Seashore) would experience the majority of the impacts with the potential for larger short-term impacts to specific businesses that cater most directly to ORV users.</p> | <p>Impact of the Alternative to the Region of Influence:</p> <p>The ROI is expected to experience long-term negligible to minor adverse impacts depending on the extent of beach closures. The Seashore villages would experience the majority of the impacts with the potential for larger short-term impacts to specific businesses that cater most directly to ORV users. Based on the current visitation statistics, the probability of negligible impacts is greater than the probability of minor adverse impacts.</p> | <p>Impact of the Alternative to the Region of Influence:</p> <p>The ROI is expected to experience long-term negligible to minor adverse impacts. The Seashore villages would experience the majority of the impacts with the potential for larger short-term impacts to specific businesses that cater most directly to ORV users. Efforts to improve access through pedestrian corridors, when compared to the no-action alternatives, and changes to access ramps would decrease the impacts on businesses that rely on visitors using the beaches affected by the new corridors and ramps relative to the no-action alternatives. However, the longer ORV closures in the fall months may reduce visitation under alternative C relative to the no-action alternatives and make the mid to high impact scenarios more likely.</p> | <p>Impact of the Alternative to the Region of Influence:</p> <p>The ROI is expected to experience long-term minor adverse impacts. The Seashore villages would experience the majority of the impacts with the potential for larger short-term impacts to specific businesses that cater most directly to ORV users. Compared to the other alternatives, alternative D provides the least access to the beach by ORVs resulting in larger projected adverse impacts.</p> | <p>Impact of the Alternative to the Region of Influence:</p> <p>The ROI is expected to experience long-term negligible to minor adverse impacts. Based on the visitation statistics for 2008, the probability of negligible impacts is greater than the probability of minor adverse impacts. The Seashore villages would experience the majority of the impacts. Like alternative B, alternative E provides for more ORV access and the impacts would likely be on the lower end of the range compared to alternatives C and D.</p> | <p>Impact of the Alternative to the Region of Influence:</p> <p>The ROI is expected to experience long-term negligible to minor adverse impacts. The Seashore villages would experience the majority of the impacts with the potential for larger short-term impacts to specific businesses that cater most directly to ORV users. Alternative F provides less ORV access to the beach compared to the no-action alternatives, especially with 26 miles of the Seashore designated as year-round VFA. However, some popular areas, such as Cape Point, South Point and Bodie Island spit, would have designated year-round or seasonal ORV routes, subject to resource closures. There are more VFAs for pedestrians because of the ORV route designations, as well as increased parking for pedestrian access. Compared to the no-action alternatives, these measures could increase overall visitation and increase the probability that revenue impacts would be at the low end of the estimated range rather than the high end.</p> |
| | <p>Impact of the Alternative to Small Business:</p> <p>Small businesses may experience long-term negligible to minor adverse impacts or long-term beneficial impacts depending on the extent of beach closures. Based on visitation statistics in 2007, there is a greater likelihood of negligible impacts.</p> <p>Impacts of the Alternative to Preservation Values:</p> <p>As a result of the long-term minor to major impacts to protected species, impacts to preservation values would be long-term moderate adverse.</p> | <p>Impact of the Alternative to Small Business:</p> <p>Small businesses may experience long-term negligible to moderate adverse impacts depending on the extent of beach closures. Based on current visitation statistics there is a greater likelihood of negligible or minor impacts.</p> <p>Impacts of the Alternative to Preservation Values:</p> <p>As a result of the long-term minor to moderate impacts to protected species, and addition of protection from seasonal night-driving restrictions, impacts to preservation values would be long-term minor to moderate adverse.</p> | <p>Impact of the Alternative to Small Business:</p> <p>Small businesses may experience long-term negligible to moderate adverse impacts, with a greater likelihood of adverse impacts relative to the no-action alternatives due to increased fall ORV closures.</p> <p>Impacts of the Alternative to Preservation Values:</p> <p>Adverse impacts to preservation values would be less under alternative C, relative to alternatives A and B, and overall impacts to preservation values would be long-term minor adverse with long-term beneficial impacts from the measures taken to protect sensitive species at the Seashore.</p> | <p>Impact of the Alternative to Small Business:</p> <p>Small businesses may experience long-term moderate to major adverse impacts. The adverse impacts are projected to be larger relative to the other alternatives because of the limits on beach access for ORVs.</p> <p>Impacts of the Alternative to Preservation Values:</p> <p>Adverse impacts to preservation values would be less under alternative D, relative to alternatives A and B, and the overall impact to preservation values would be long-term minor adverse, with the closure of sensitive areas to ORVs under alternative D year-round substantially increasing the probability of long-term beneficial impacts relative to all other alternatives.</p> | <p>Impact of the Alternative to Small Business:</p> <p>Small businesses may experience long-term negligible to moderate adverse impacts, with a likelihood of adverse impacts in the lower end of the range relative to alternatives C and D due to increased ORV access closures.</p> <p>Impacts of the Alternative to Preservation Values:</p> <p>Adverse impacts to preservation values would be less under alternative E, relative to alternatives A and B, and overall preservation values would be long-term minor to moderate adverse with long-term beneficial impacts from the measures taken by the Seashore to protect threatened and endangered, as well as special status species.</p> | <p>Impact of the Alternative to Small Business:</p> <p>Small businesses would experience long-term negligible to moderate adverse impacts. The extra efforts to increase ORV access and pedestrian access should increase the probability that the impacts are on the low rather than high end of the range.</p> <p>Impacts of the Alternative to Preservation Values:</p> <p>Adverse impacts to preservation values would be less under alternative F, relative to alternatives A and B, and overall preservation values would be long-term minor to moderate adverse, with long-term beneficial impacts from the measures taken by the Seashore to protect threatened and endangered, as well as special status species.</p> |

| Impact Topic | Alternative A: No Action—Continuation of Management under the Interim Strategy | Alternative B: No Action—Continuation of Management under Consent Decree | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Management | Alternative F: NPS Preferred Alternative |
|---|---|--|---|---|---|--|
| Socioeconomic Impacts (continued) | Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions. | Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions. | Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions. | Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions. | Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions. | Cumulative Impacts: Cumulative Impacts for socioeconomics to the ROI would be long-term negligible to minor adverse or beneficial, depending on national economic conditions. |
| Seashore Operations and Management | Impacts of the Alternative: Overall, each division could accomplish within current funding, without shifting priorities or having a noticeable change in operations, resulting in long-term negligible adverse impacts to all areas of Seashore operations. | Impacts of the Alternative: Overall, there would be an increase in duties related to ORV management for staff in the park management/administration, visitor protection, and resources management divisions. Although these staff could accomplish these duties within existing budgets, it would require them to re-prioritize and re-allocate staff, and would not leave staff with adequate time to address other needs at the park outside of ORV management, resulting in long-term moderate adverse impacts. Staff in facility management and Interpretation would not see a large change in operations and would be able to accomplish ORV related tasks within current funding, without shifting priorities or having a noticeable change in operations, resulting in long-term negligible adverse impacts to these two divisions. Overall, impacts to Seashore operations would be long-term moderate adverse. | Impacts of the Alternative: Overall, there would be an increase in duties related to ORV management for staff in the park management/administration, resources management, facility management divisions that could result in some re-prioritization of work, but would not be expected to impact overall duties resulting in long-term minor adverse impacts. In the visitor protection division, staff could accomplish their duties with existing budgets, but it would require them to re-prioritize and re-allocate staff, and would not leave staff with adequate time to address other needs at the park outside of ORV management, resulting in long-term moderate adverse impacts. Staff in the interpretation division would not see a large change in operations and would be able to accomplish ORV related tasks within current funding, without shifting priorities or having a noticeable change in operations, resulting in long-term negligible adverse impacts Overall, impacts to Seashore operations would be long-term, minor to moderate (but mostly minor) adverse. | Impacts of the Alternative: Overall, there would long-term negligible adverse impacts to all divisions as each division would be expected to execute their duties from existing, or expected, funding sources, without having to re-prioritize staff. These impacts are due, in part, to the expected cost recovery under the proposed permit program. Overall impacts to Seashore operations would be long-term negligible adverse. | Impacts of the Alternative: Overall, there would be an increase in duties related to ORV management for staff in the facility management division that could result in some re-prioritization of work, but would not be expected to impact overall duties resulting in long-term minor adverse impacts. In the park management/administration division, the increase in ORV related responsibilities would be similar, but slightly greater with long-term minor to moderate adverse impacts. In the visitor protection and resources management divisions, staff could accomplish their duties with existing budgets, but it would require them to re-prioritize and re-allocate staff, and would not leave staff with adequate time to address other needs at the park outside of ORV management, resulting in long-term moderate adverse impacts. Staff in the Interpretation division would not see a large change in operations and would be able to accomplish ORV related tasks within current funding, without shifting priorities or having a noticeable change in operations, resulting in long-term negligible adverse impacts. Overall impacts to Seashore operations would be long-term moderate adverse. | Impacts of the Alternative: Overall, there would be an increase in duties related to ORV management for staff in the facility management and park management/administration divisions that could result in some re-prioritization of work, but would not be expected to impact overall duties resulting in long-term minor adverse impacts. In the visitor protection and resources management divisions, staff could accomplish their duties with existing budgets, but it would require them to re-prioritize and re-allocate staff, and would not leave staff with adequate time to address other needs at the park outside of ORV management, resulting in long-term moderate adverse impacts. Staff in the interpretation division would not see a large change in operations and would be able to accomplish ORV related tasks within current funding, without shifting priorities or having a noticeable change in operations, resulting in long-term negligible adverse impacts. Overall impacts to Seashore operations would be long-term minor to moderate adverse. |



Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | ↔ Safety Closure |

ORV Routes

- Open to ORV all year*
- Seasonally open/closed*

*Areas open to ORV are subject to temporary resource or safety closures.

Alternatives A and B

Map 1 of 7

0 0.5 1 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | ↔ Safety Closure |

ORV Routes

- ■ ■ Open to ORV all year*
- ■ ■ Seasonally open/closed*

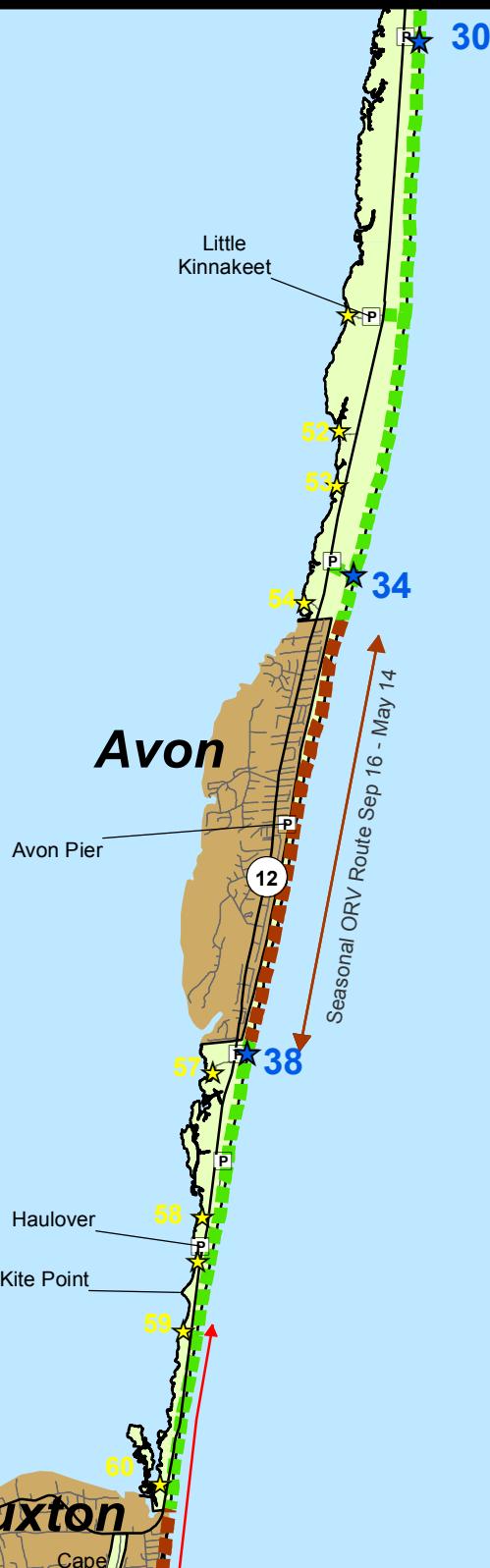
*Areas open to ORV are subject to temporary resource or safety closures.

Alternatives A and B

Map 2 of 7

0 0.5 1 1.5 Miles





Avon Pier

Seasonal ORV Route Sep 16 - May 14

Haulover

Kite Point

Cape

Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | ↔ Safety Closure |

ORV Routes

- ■ ■ Open to ORV all year*
- ■ ■ Seasonally open/closed*

*Areas open to ORV are subject to temporary resource or safety closures.

Alternatives A and B

Map 3 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | ↔ Safety Closure |

ORV Routes

- Open to ORV all year*
- Seasonally open/closed*

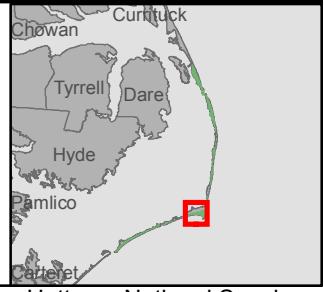
*Areas open to ORV are subject to temporary resource or safety closures.

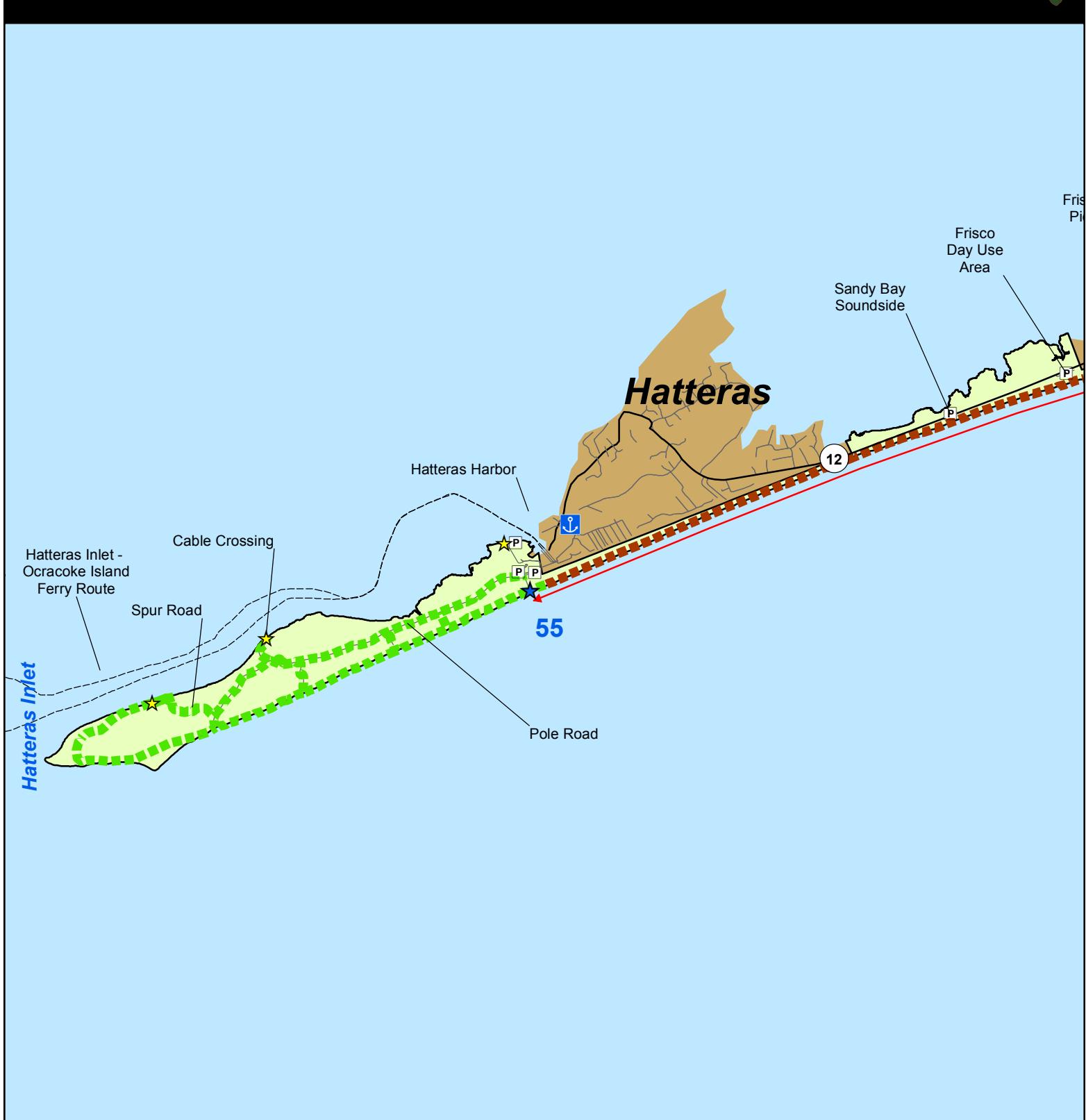
Alternatives A and B

Map 4 of 7



0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | — Ferry Route |
| | ↔ Safety Closure |

ORV Routes

- Open to ORV all year*
- Seasonally open/closed*

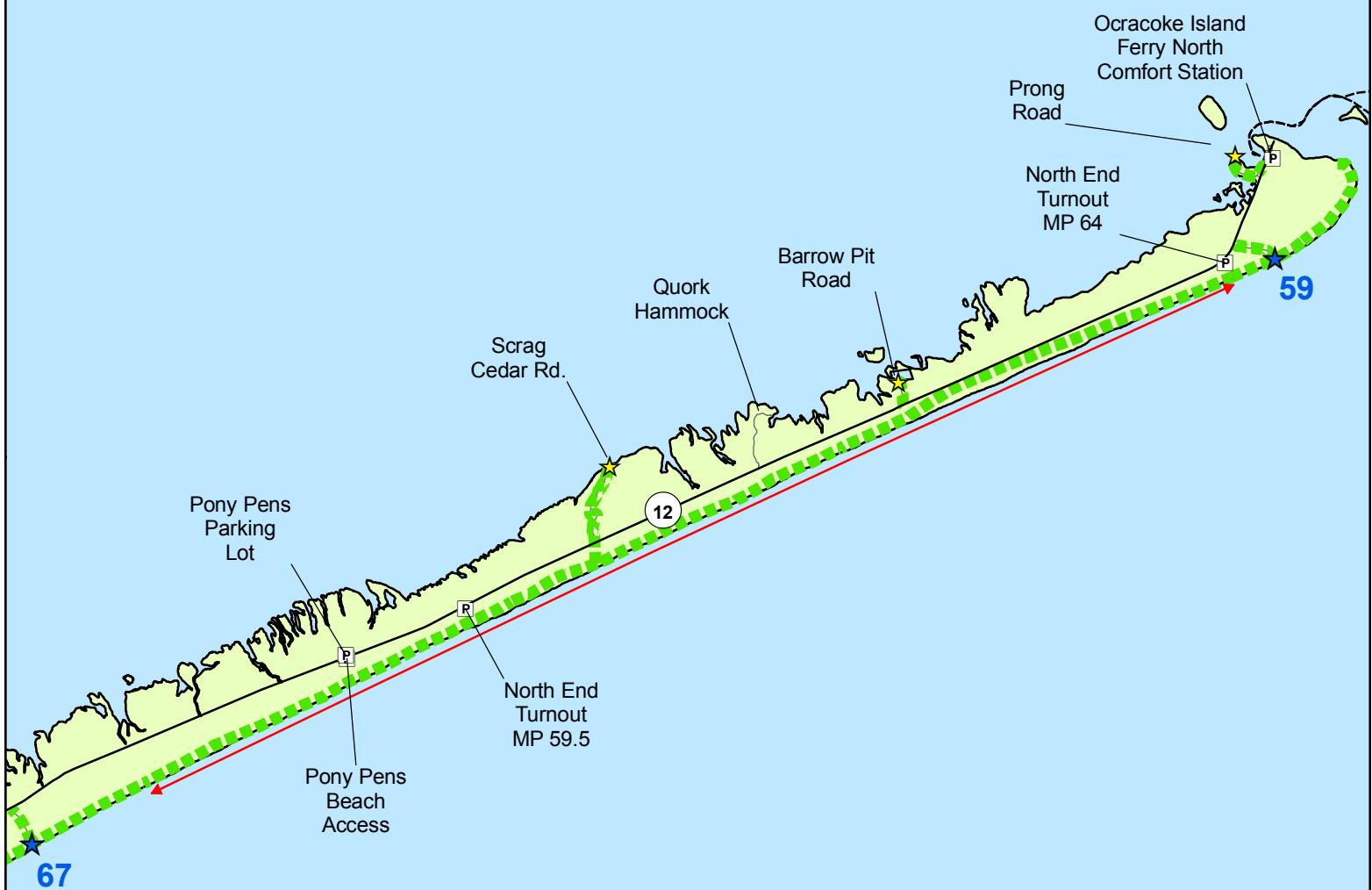
*Areas open to ORV are subject to temporary resource or safety closures.

Alternatives A and B

Map 5 of 7

0 0.5 1 1.5 Miles





Legend

| | | |
|-----------------------|--|-----------------|
| CAHA Boundary | | ORV Ramps |
| PINWR Boundary | | Oceanside Ramps |
| Villages | | Soundside Ramps |
| Boat Ramps | | US Hwy |
| Campgrounds | | State Hwy |
| Existing Parking Lots | | Other |
| Swim Beaches | | Ferry Route |
| | | Safety Closure |

ORV Routes

- Open to ORV all year*
- Seasonally open/closed*

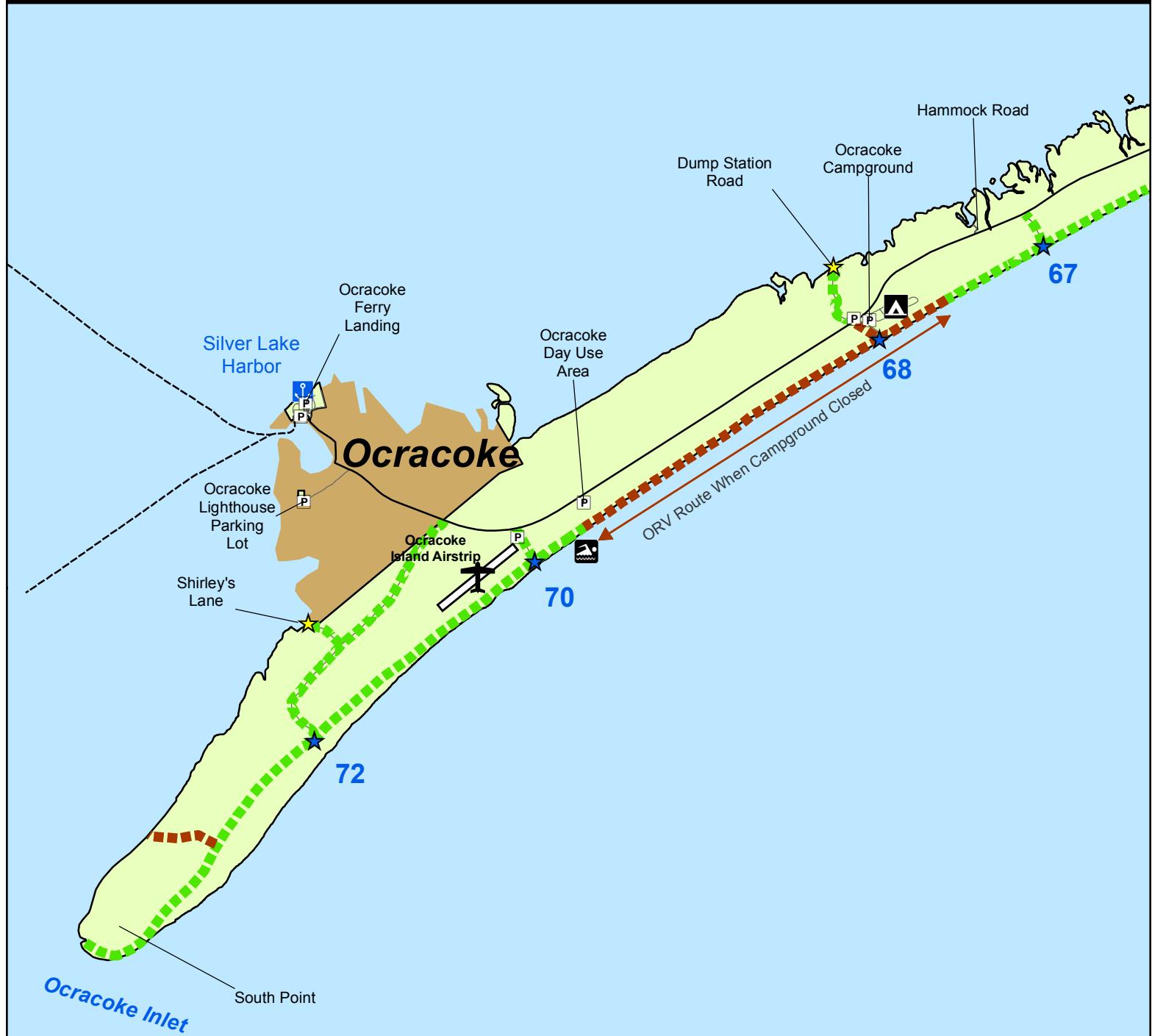
*Areas open to ORV are subject to temporary resource or safety closures.

Alternatives A and B

Map 6 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|---------------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ OceanSide Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| ▲ Campgrounds | — State Hwy |
| [P] Existing Parking Lots | — Other |
| ■ Swim Beaches | — Ferry Route |
| ← → Safety Closure | |

ORV Routes

- Open to ORV all year*
- Seasonally open/closed*

*Areas open to ORV are subject to temporary resource or safety closures.

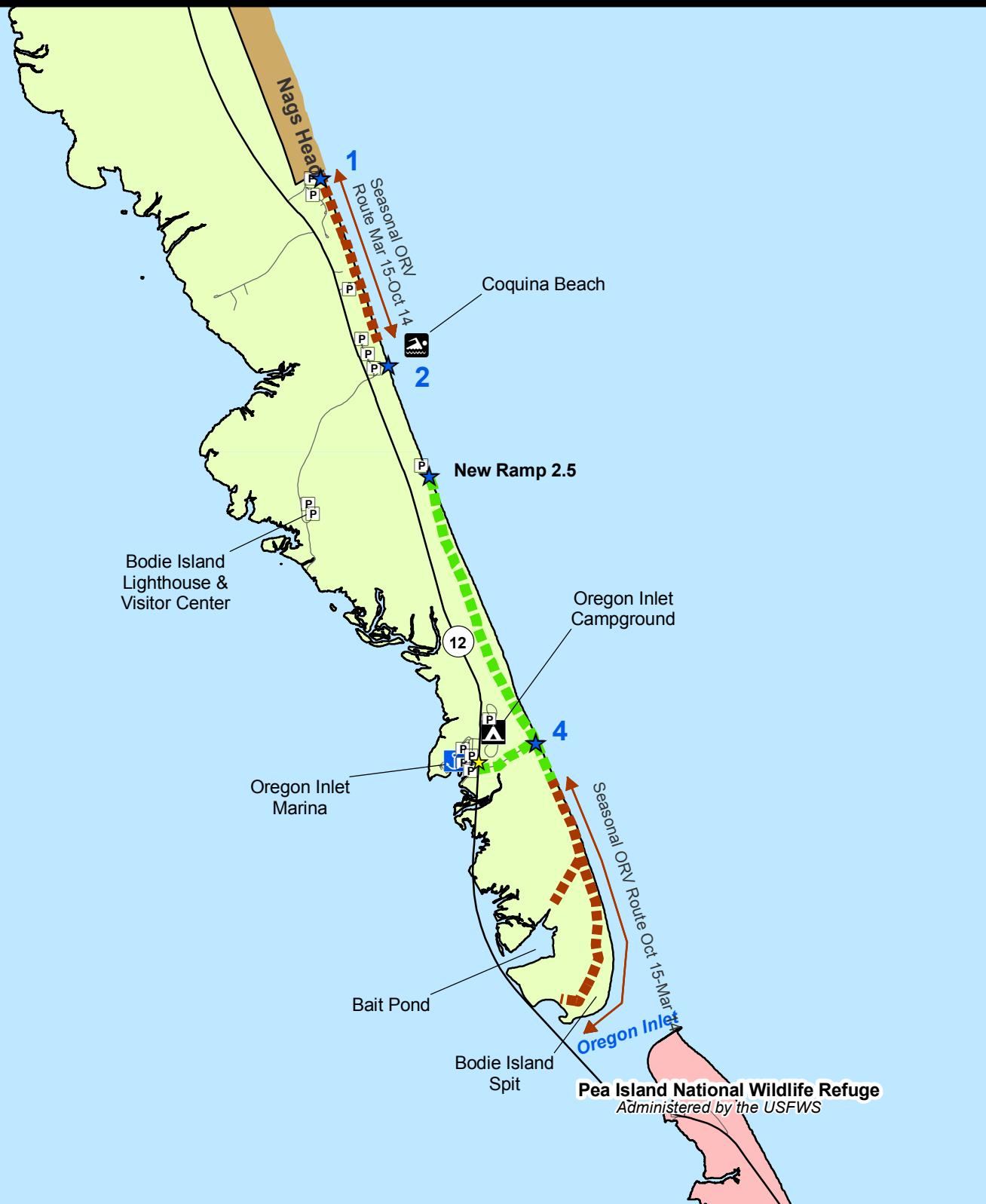
Alternatives A and B

Map 7 of 7



0 0.5 1 1.5 Miles





Legend

| | |
|----------------|-------------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Ocean Side Ramps |
| Villages | ★ Sound Side Ramps |
| Boat Ramps | ▲ Campgrounds |
| P | ■ Existing Parking Lots |
| Swim Beaches | |

ORV Routes

- Open to ORV all year*
- Seasonally Open to ORV*

*Areas open to ORV are subject to temporary resource or safety closures.

Alternative C

Map 1 of 7

0 0.5 1 Miles





Legend

| | |
|-------------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| P Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

- Open to ORV all year*
- Seasonally open/closed*

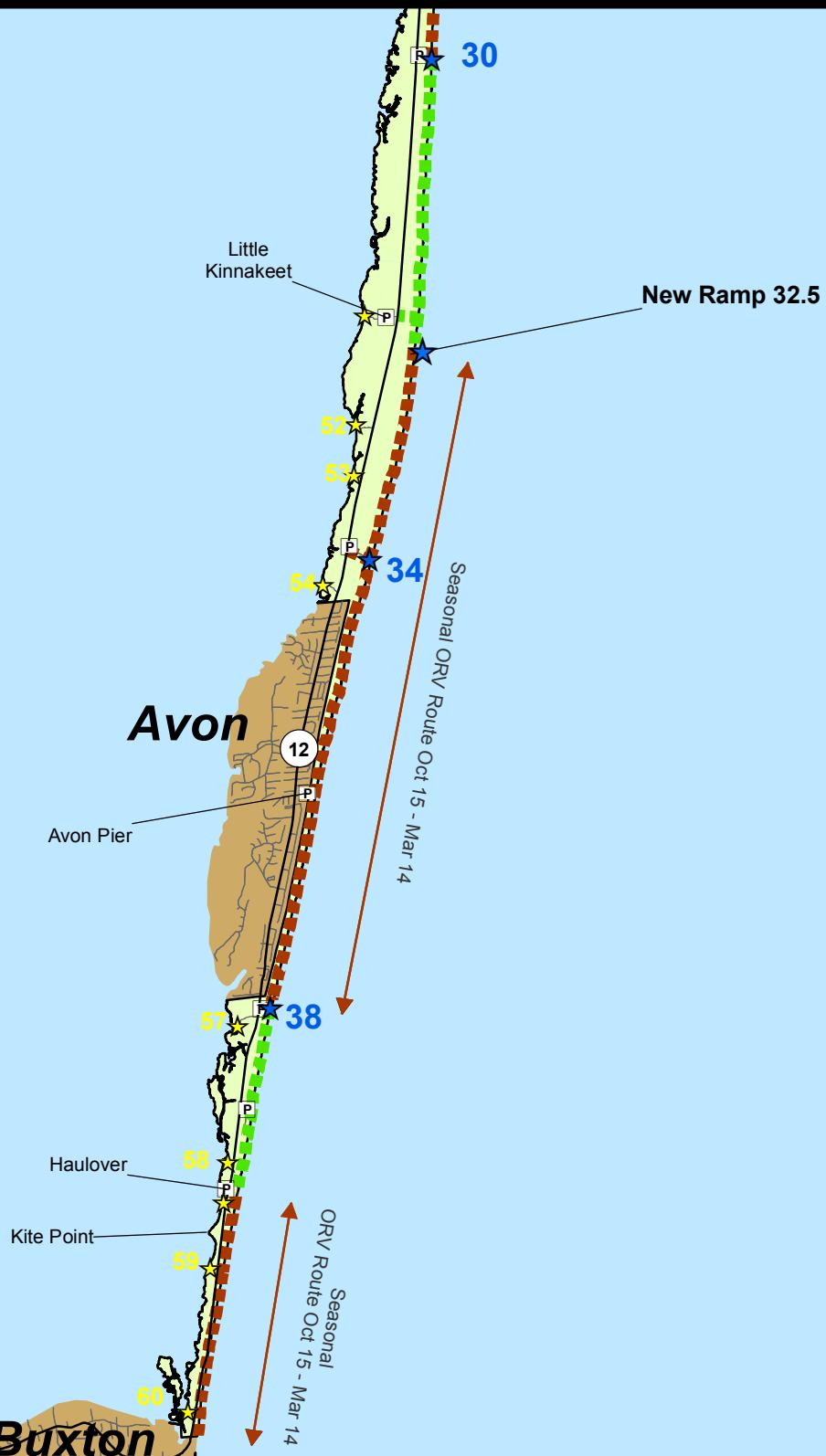
*Areas open to ORV are subject to temporary resource or safety closures.

Alternative C

Map 2 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

- Open to ORV all year*
- Seasonally open/closed*

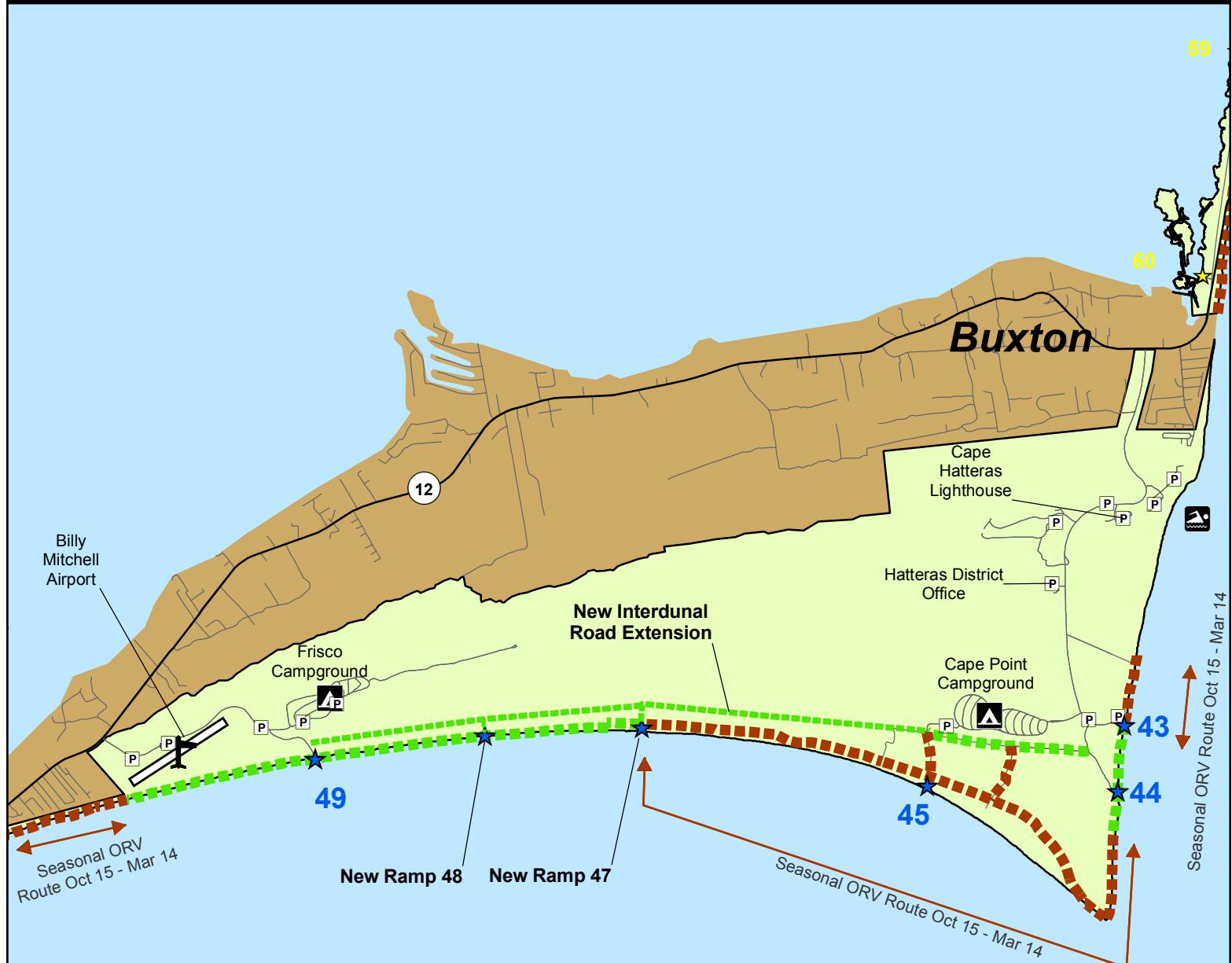
*Areas open to ORV are subject to temporary resource or safety closures.

Alternative C

Map 3 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

- Open to ORV all year*
- Seasonally open/closed*

*Areas open to ORV are subject to temporary resource or safety closures.

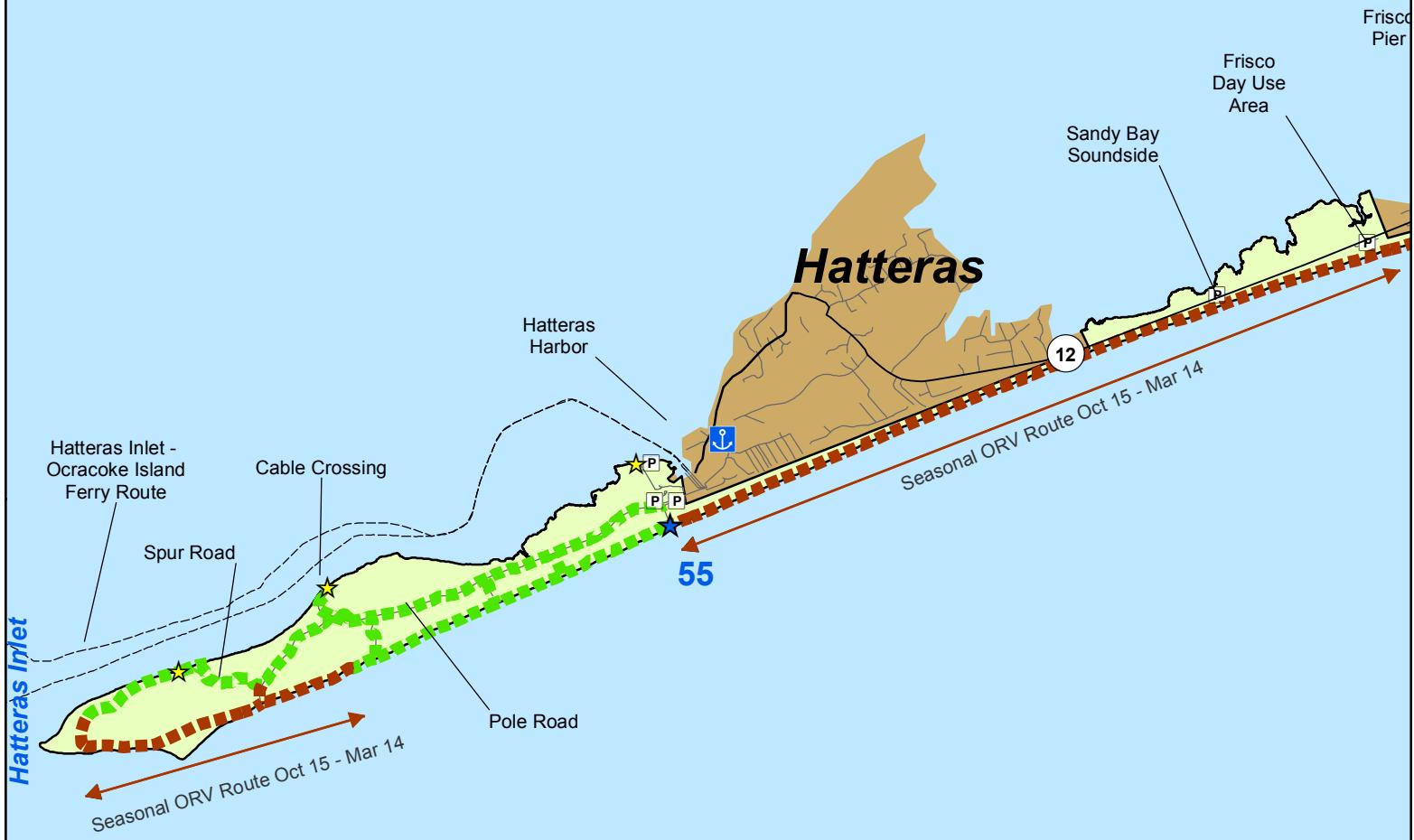
Alternative C

Map 4 of 7



0 0.5 1 1.5 Miles





Legend

- CAHA Boundary
- PINWR Boundary
- Villages
- Boat Ramps
- Campgrounds
- Existing Parking Lots
- Swim Beaches

- ORV Ramps
- Oceanside Ramps
- Soundside Ramps
- US Hwy
- State Hwy
- Other
- Ferry Route

ORV Routes

- ■ ■ Open to ORV all year*
 - ■ ■ Seasonally open/closed*

*Areas open to ORV
are subject to temporary
resource or safety closures.

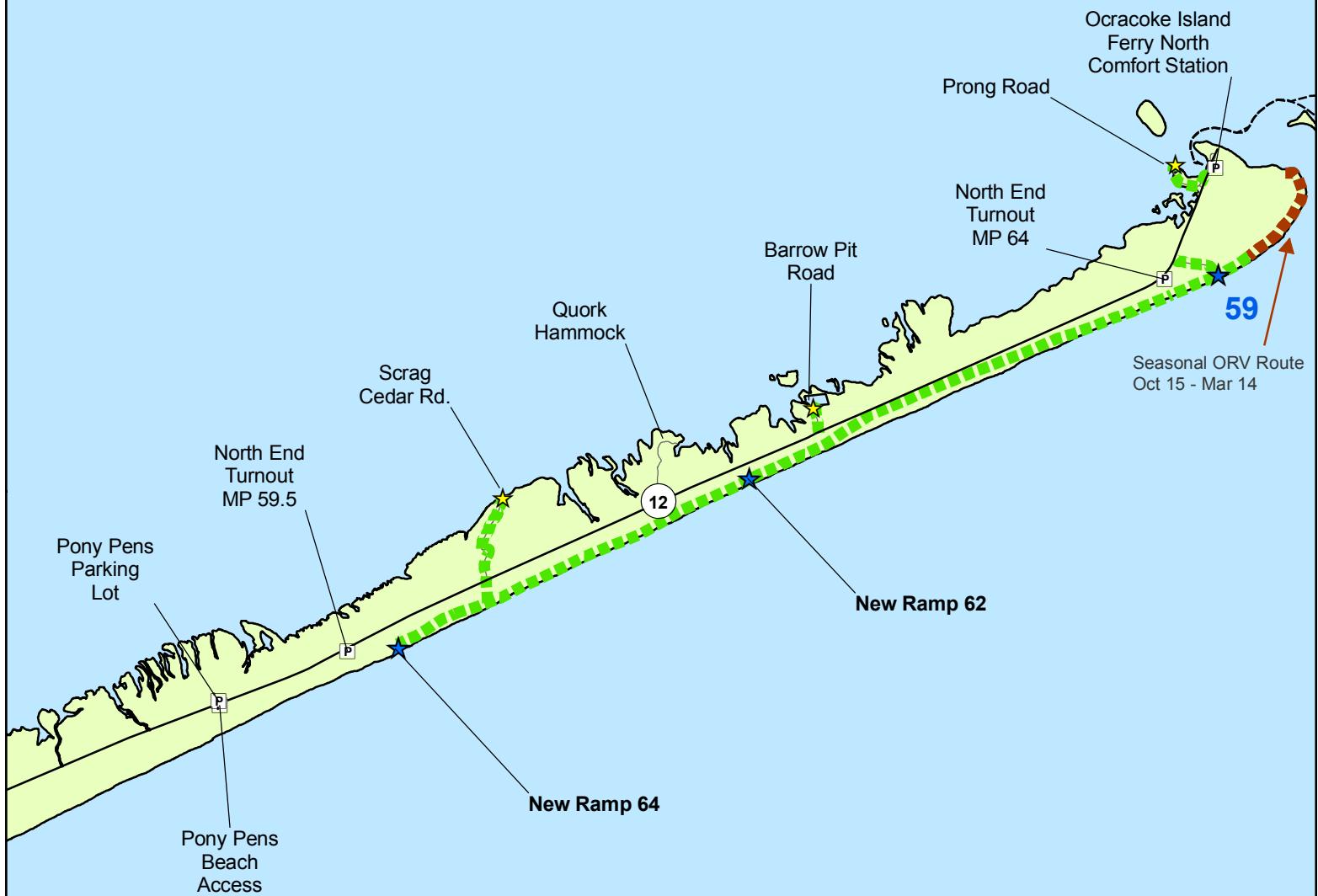
Alternative C

Map 5 of 7



A horizontal scale bar with tick marks at 0, 0.5, 1, and 1.5 miles. The segment between 0 and 1.5 is filled with a light gray color.





Legend

| | | |
|-----------------------|--|-------------------|
| CAHA Boundary | | ORV Ramps |
| PINWR Boundary | | ★ Oceanside Ramps |
| Villages | | ★ Soundside Ramps |
| Boat Ramps | | — US Hwy |
| Campgrounds | | — State Hwy |
| Existing Parking Lots | | — Other |
| Swim Beaches | | - - Ferry Route |

ORV Routes

- Open to ORV all year*
- Seasonally open/closed*

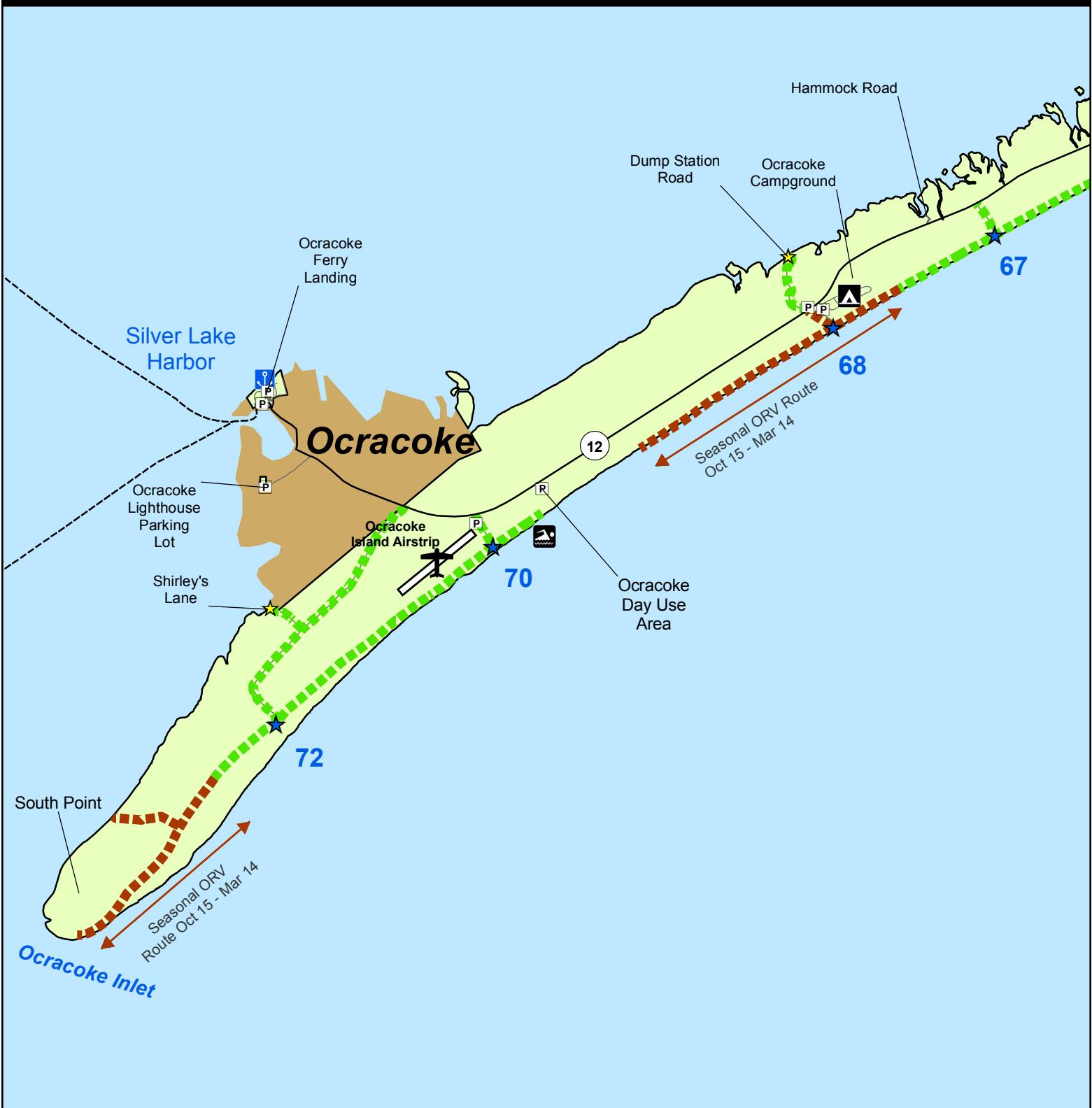
*Areas open to ORV are subject to temporary resource or safety closures.

Alternative C

Map 6 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

- Open to ORV all year*
- Seasonally open/closed*

*Areas open to ORV are subject to temporary resource or safety closures.

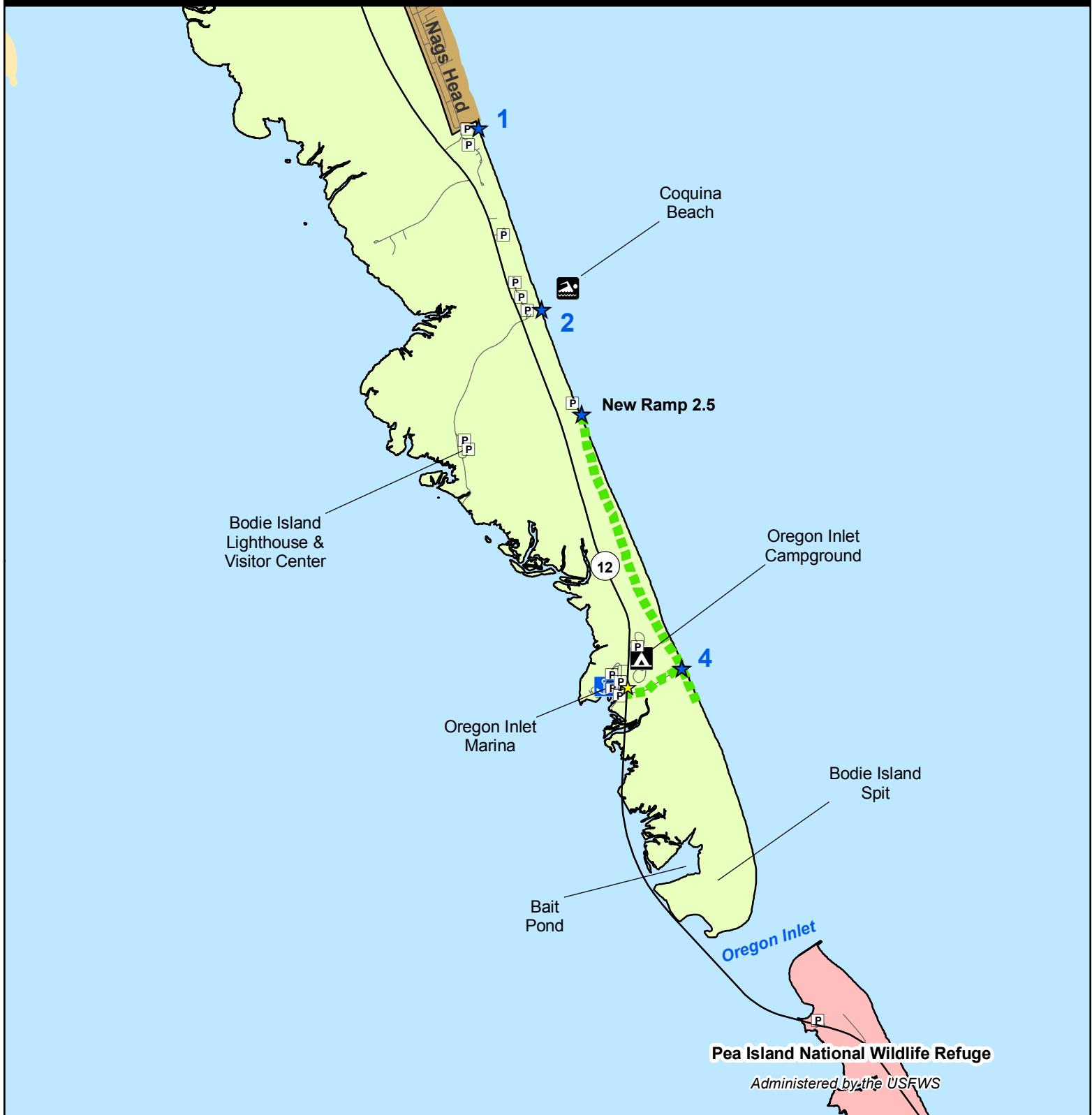
Alternative C

Map 7 of 7



0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | |
| Villages | |
| Boat Ramps | |
| Campgrounds | |
| Existing Parking Lots | |
| Swim Beaches | |
| | ★ Oceanside Ramps |
| | ★ Soundside Ramps |
| | — US Hwy |
| | — State Hwy |
| | — Other |
| | - - Ferry Route |

ORV Routes

■ ■ ■ Open to ORV all year*

*Areas open to ORV
are subject to temporary
resource or safety closures.

Alternative D

Map 1 of 7

0 0.5 1 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

■ ■ ■ Open to ORV all year*

*Areas open to ORV
are subject to temporary
resource or safety closures.

Alternative D

Map 2 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

■■■ Open to ORV all year*

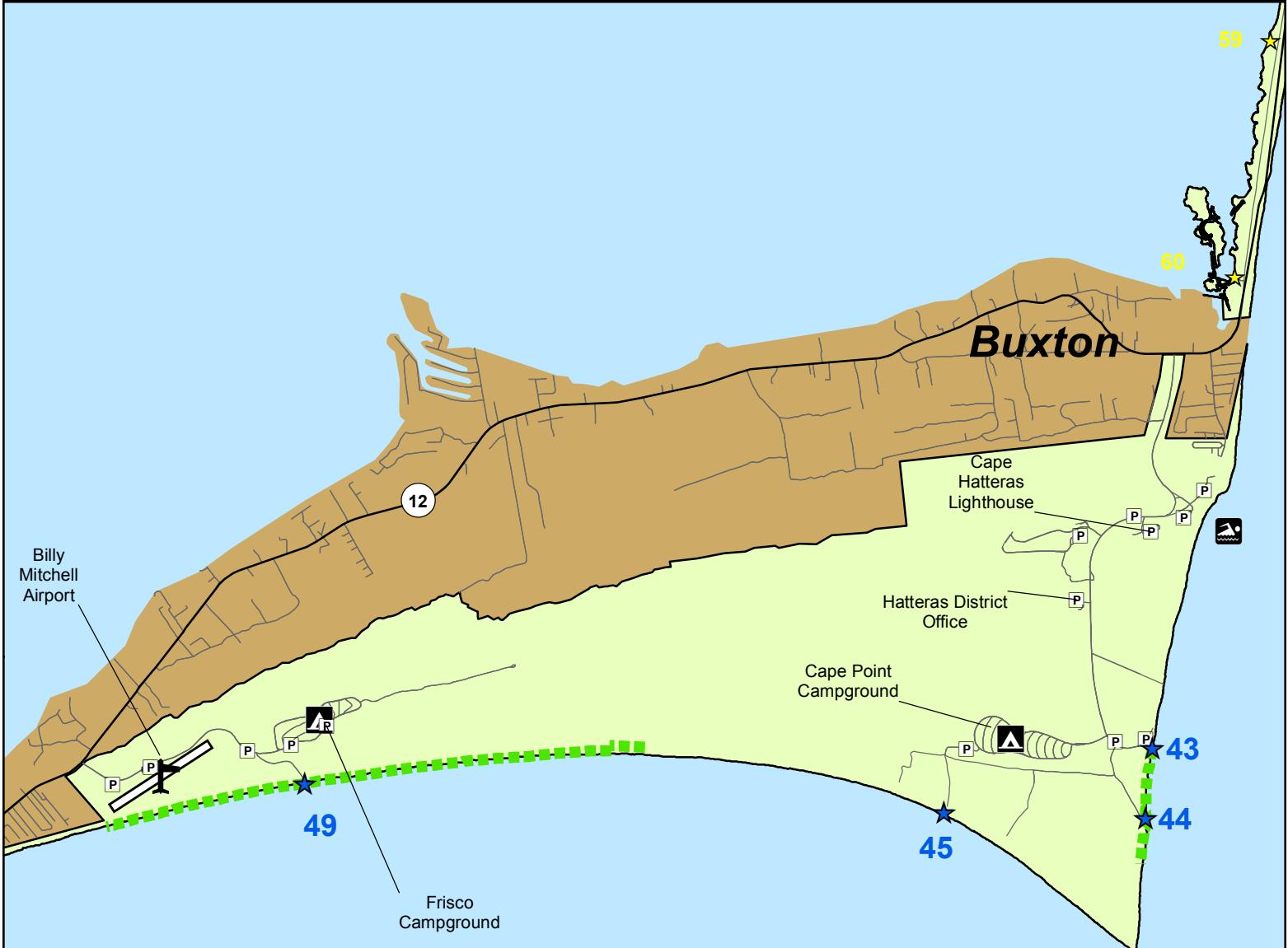
Alternative D

Map 3 of 7

0 0.5 1 1.5 Miles



*Areas open to ORV are subject to temporary resource or safety closures.



Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

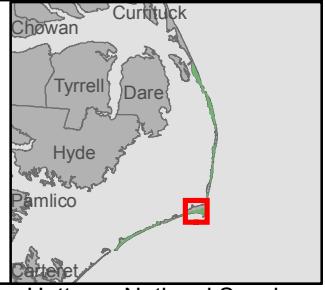
ORV Routes
■■■ Open to ORV all year*

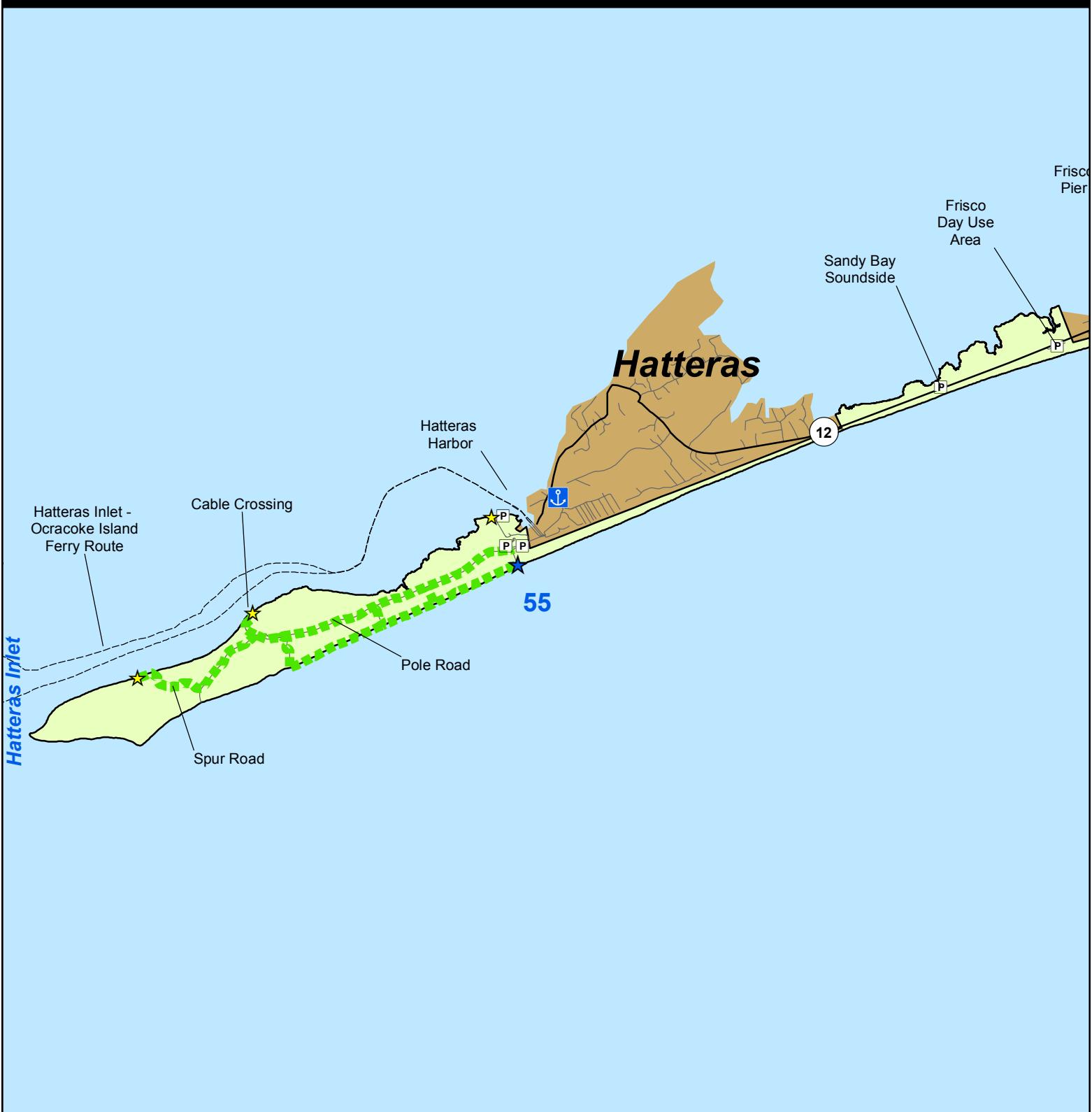
*Areas open to ORV
are subject to temporary
resource or safety closures.

Alternative D

Map 4 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - - Ferry Route |

ORV Routes

■■■■■ Open to ORV all year*

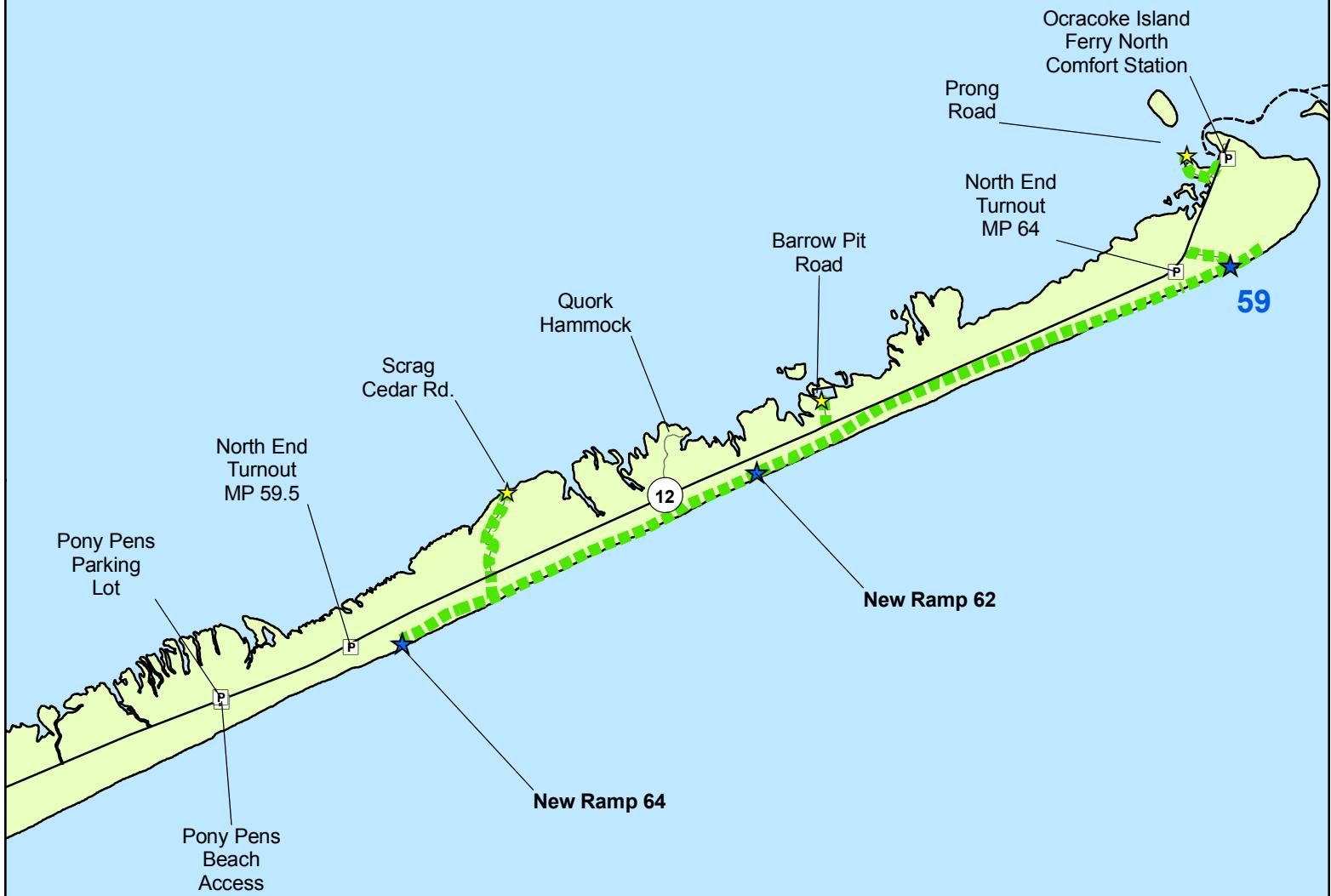
*Areas open to ORV are subject to temporary resource or safety closures.

Alternative D

Map 5 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - - Ferry Route |

ORV Routes

■ ■ ■ Open to ORV all year*

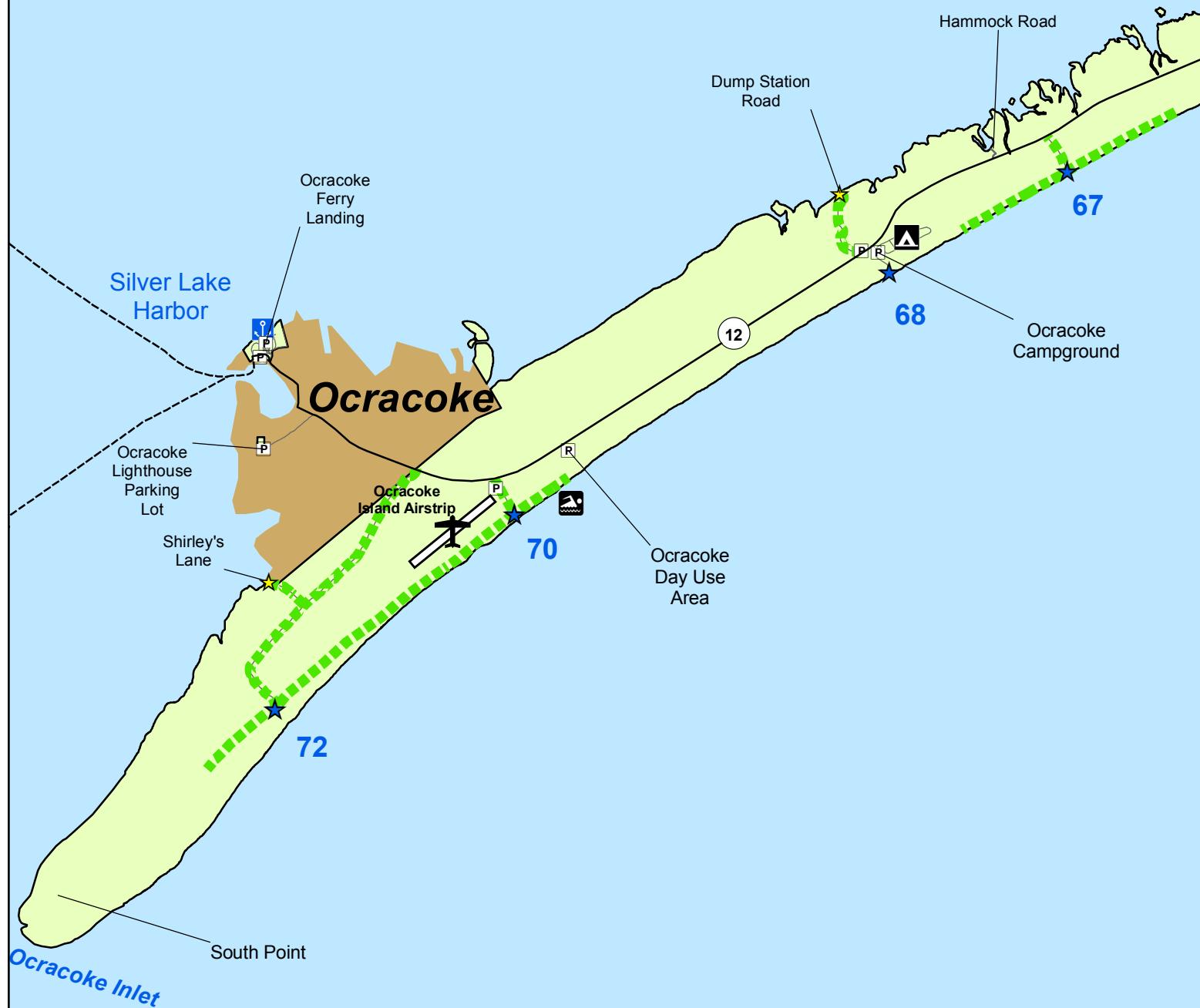
*Areas open to ORV are subject to temporary resource or safety closures.

Alternative D

Map 6 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ OceanSide Ramps |
| Villages | ★ SoundSide Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

■ ■ ■ Open to ORV all year*

*Areas open to ORV are subject to temporary resource or safety closures.

Alternative D

Map 7 of 7



0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

- Open to ORV all year
- Seasonally open/closed
- ×× ORV Year Round w/restrictions

*Areas open to ORV are subject to temporary resource or safety closures.

Alternative E

Map 1 of 7

0 0.5 1 Miles





Rodanthe

Rodanthe Fishing Pier

Waves

Salvo

Salvo Day Use Area

Seasonal ORV Route Nov 1 - Mar 31

Rodanthe

Seasonal ORV Route Nov 1 - Mar 31

23

12

46

27

48

30

New Ramp 24 or Ramp 26

Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

- Open to ORV all year
- Seasonally open/closed
- ×× ORV Year Round w/restrictions

*Areas open to ORV
are subject to temporary
resource or safety closures.

Alternative E

Map 2 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|---------------------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | ■ Open to ORV all year |
| Campgrounds | ■ Seasonally open/closed |
| Existing Parking Lots | — ORV Year Round w/restrictions |
| Swim Beaches | - - Ferry Route |

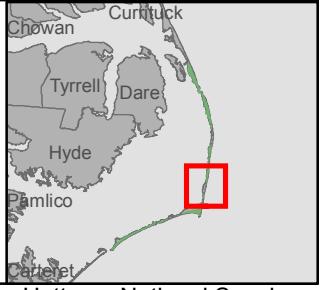
- ORV Routes**
- Open to ORV all year
 - Seasonally open/closed
 - ORV Year Round w/restrictions

*Areas open to ORV are subject to temporary resource or safety closures.

Alternative E

Map 3 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

- Open to ORV all year
- Seasonally open/closed
- ×× ORV Year Round w/restrictions

*Areas open to ORV are subject to temporary resource or safety closures.

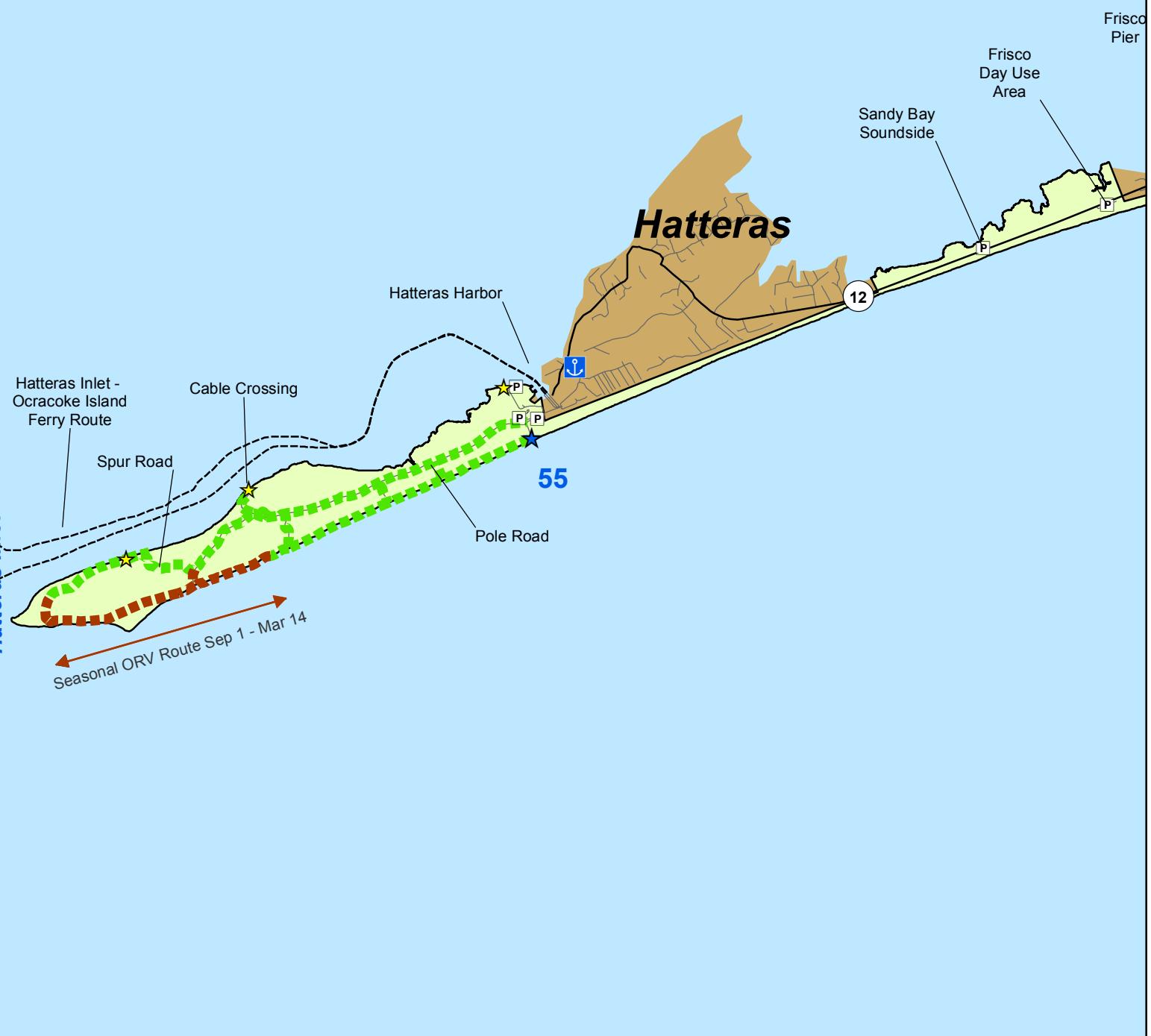
Alternative E

Map 4 of 7



0 0.5 1 1.5 Miles





Legend

| | |
|-------------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| P Existing Parking Lots | — Other |
| Swim Beaches | - - - Ferry Route |

ORV Routes

- Open to ORV all year
- Seasonally open/closed
- ×× ORV Year Round w/restrictions

*Areas open to ORV are subject to temporary resource or safety closures.

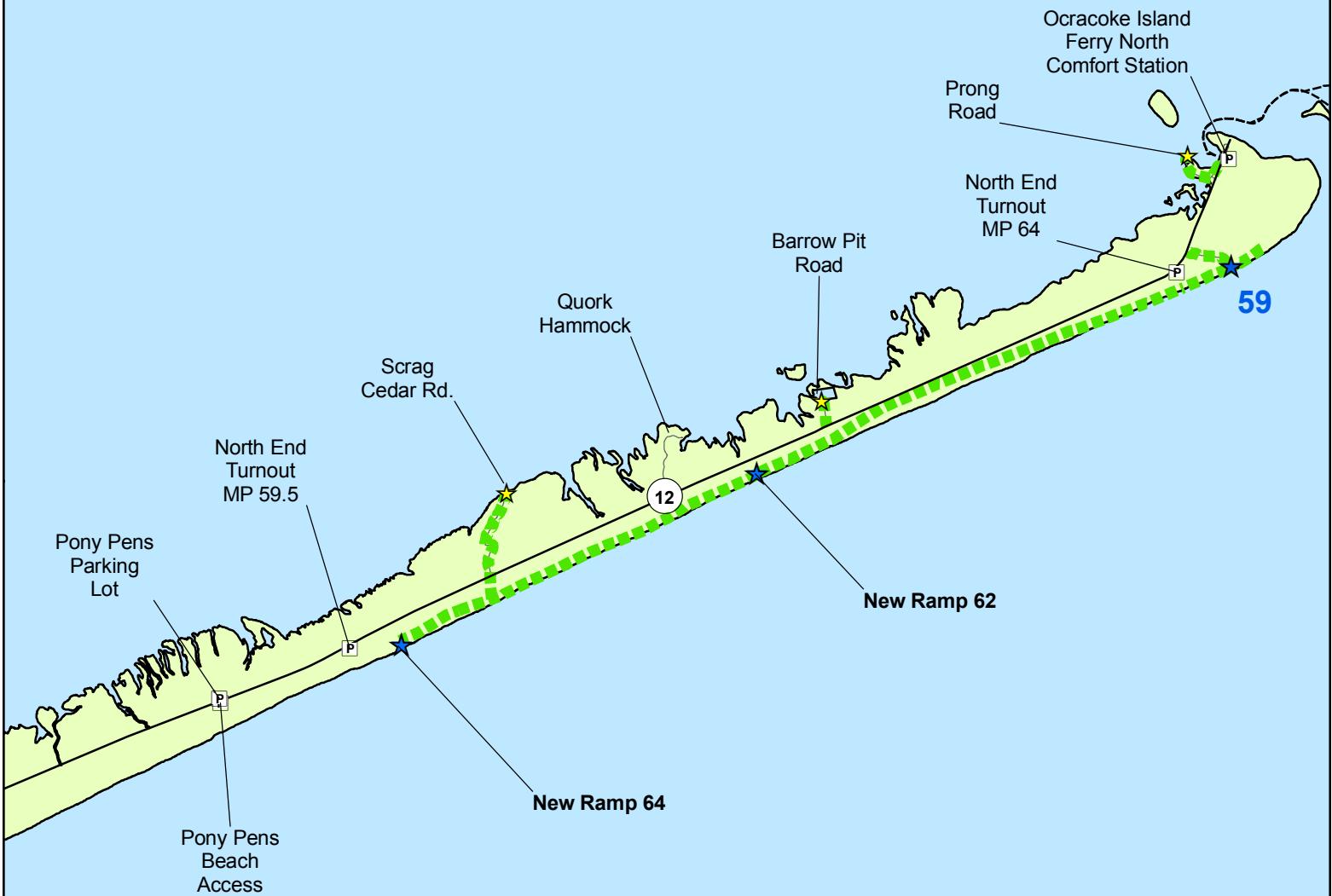
Alternative E

Map 5 of 7



0 0.5 1 1.5 Miles





Legend

| | | |
|-----------------------|--|-----------------|
| CAHA Boundary | | ORV Ramps |
| PINWR Boundary | | Oceanside Ramps |
| Villages | | Soundside Ramps |
| Boat Ramps | | US Hwy |
| Campgrounds | | State Hwy |
| Existing Parking Lots | | Other |
| Swim Beaches | | Ferry Route |

ORV Routes

- Open to ORV all year
- Seasonally open/closed
- ORV Year Round w/restrictions

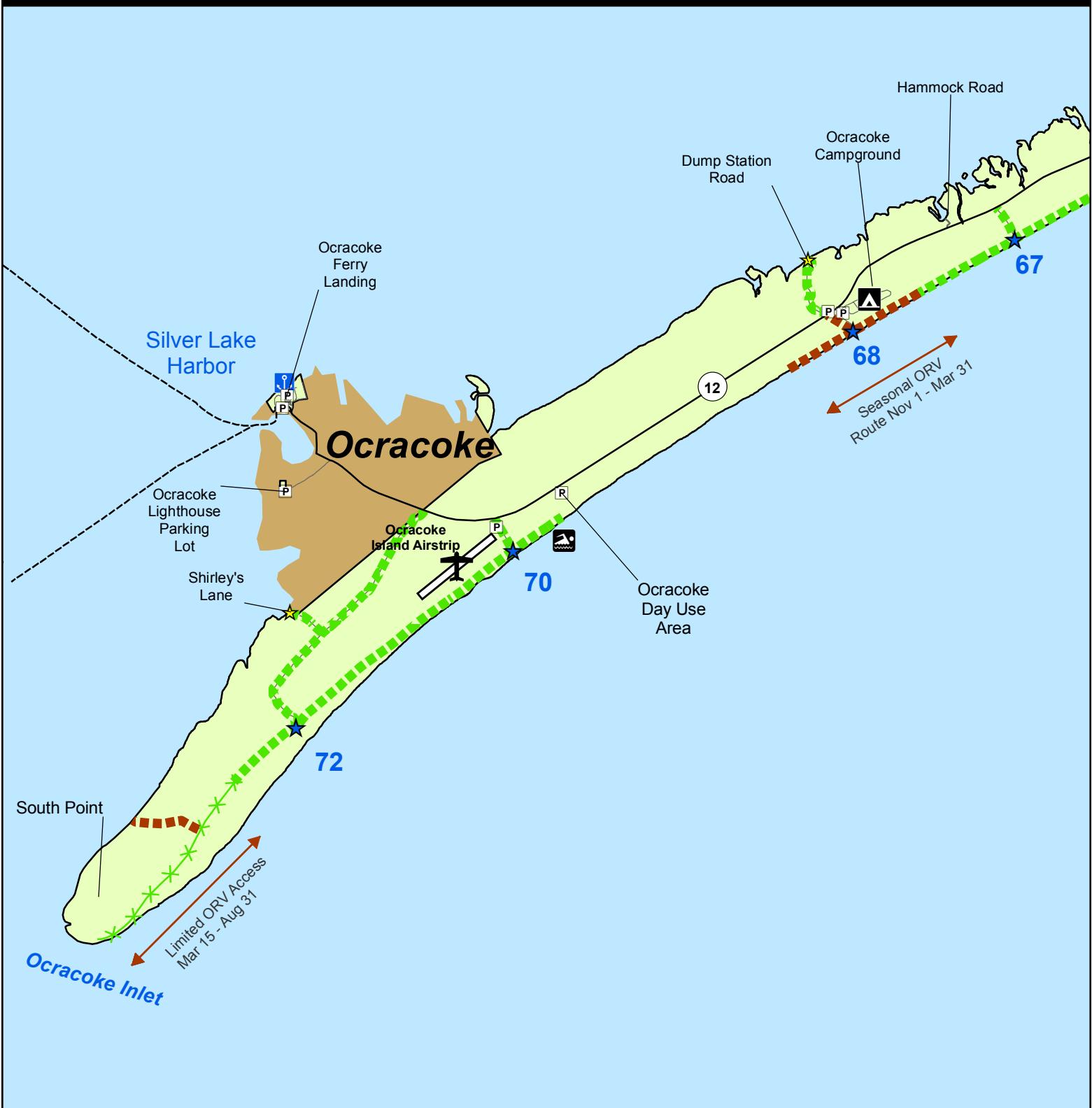
*Areas open to ORV are subject to temporary resource or safety closures.

Alternative E

Map 6 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|---------------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| ▲ Campgrounds | — State Hwy |
| [P] Existing Parking Lots | — Other |
| [Swim Beaches] | - - - Ferry Route |

ORV Routes

- Open to ORV all year
- Seasonally open/closed
- ×× ORV Year Round w/restrictions

*Areas open to ORV are subject to temporary resource or safety closures.

Alternative E

Map 7 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | — Ferry Route |

ORV Routes

- Open to ORV all year (green dashed line)
- Seasonally open/closed (red dashed line)

*Areas open to ORV are subject to temporary resource or safety closures.

Alternative F

Map 1 of 7

0 0.5 1 Miles





Rodanthe

Rodanthe Fishing Pier

Waves

Salvo

Salvo Day Use Area

Seasonal ORV Route Nov 1 - Mar 31

23

New Ramp 25.5

46

27

48

30

Legend

| | | | |
|--|-----------------------|--|-----------------|
| | CAHA Boundary | | ORV Ramps |
| | PINWR Boundary | | Oceanside Ramps |
| | Villages | | Soundside Ramps |
| | Boat Ramps | | US Hwy |
| | Campgrounds | | State Hwy |
| | Existing Parking Lots | | Other |
| | Swim Beaches | | Ferry Route |

ORV Routes

- Open to ORV all year
- Seasonally open/closed

*Areas open to ORV
are subject to temporary
resource or safety closures.

Alternative F

Map 2 of 7

0 0.5 1 1.5 Miles





Legend

| | | | | |
|-----------------------|--|-----------|--|-----------------|
| CAHA Boundary | | ORV Ramps | | Oceanside Ramps |
| PINWR Boundary | | | | Soundside Ramps |
| Villages | | | | US Hwy |
| Boat Ramps | | | | State Hwy |
| Campgrounds | | | | Other |
| Existing Parking Lots | | | | Ferry Route |
| Swim Beaches | | | | |

- ORV Routes**
- Open to ORV all year
 - Seasonally open/closed

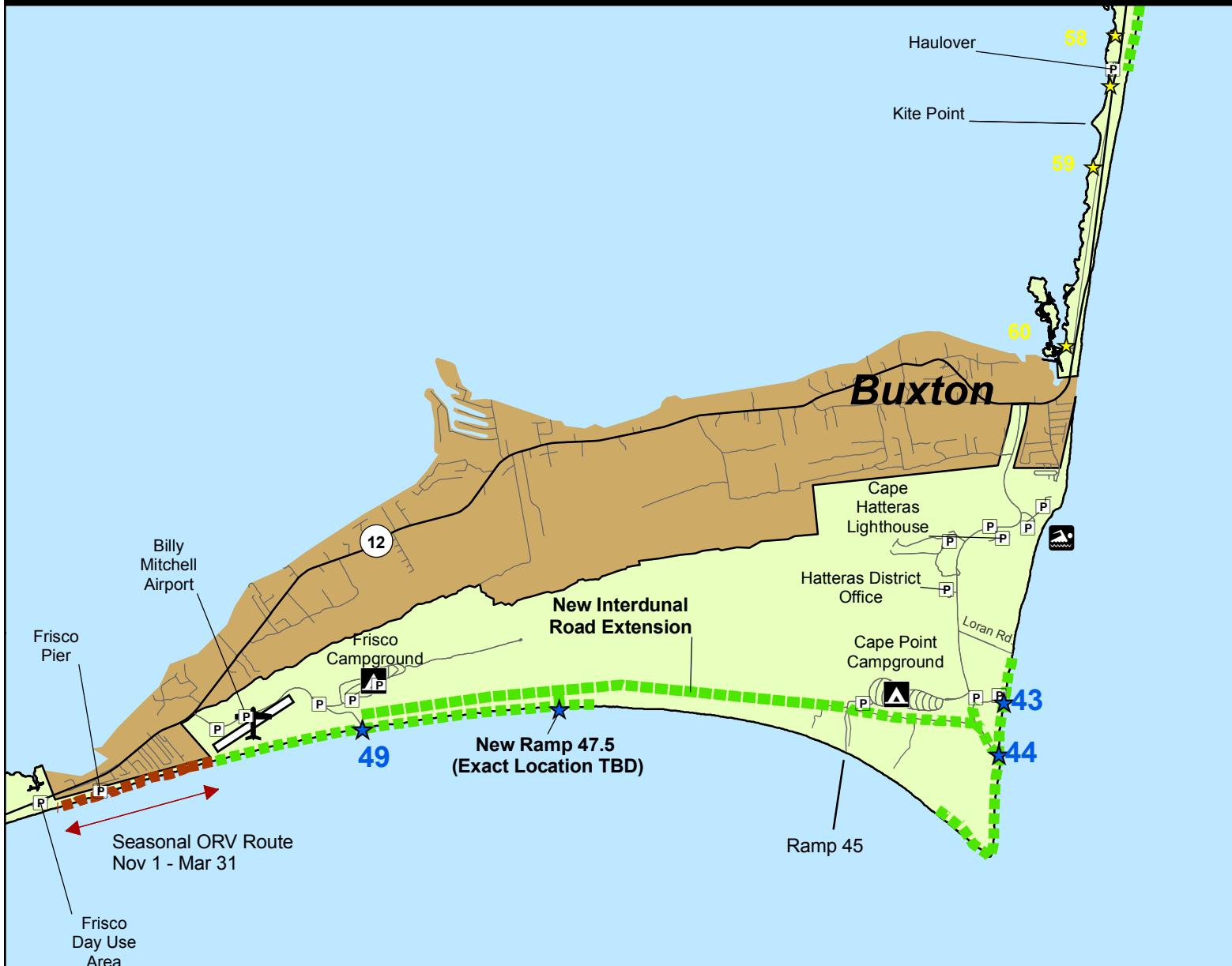
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Alternative F

Map 3 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — NC Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

- Open to ORV all year
- Seasonally open/closed

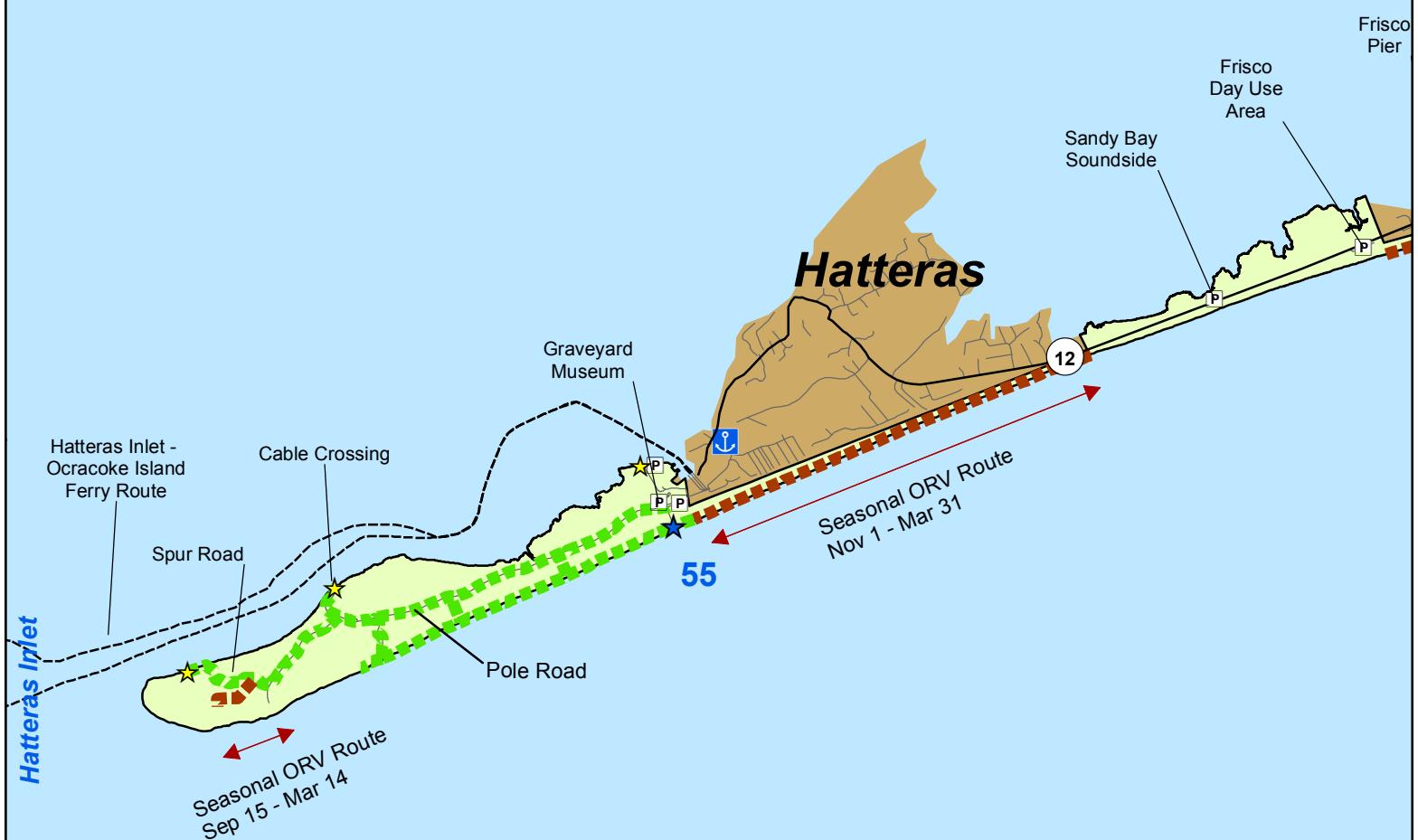
*Areas open to ORV are subject to temporary resource or safety closures.

Alternative F

Map 4 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

- Open to ORV all year
- Seasonally open/closed

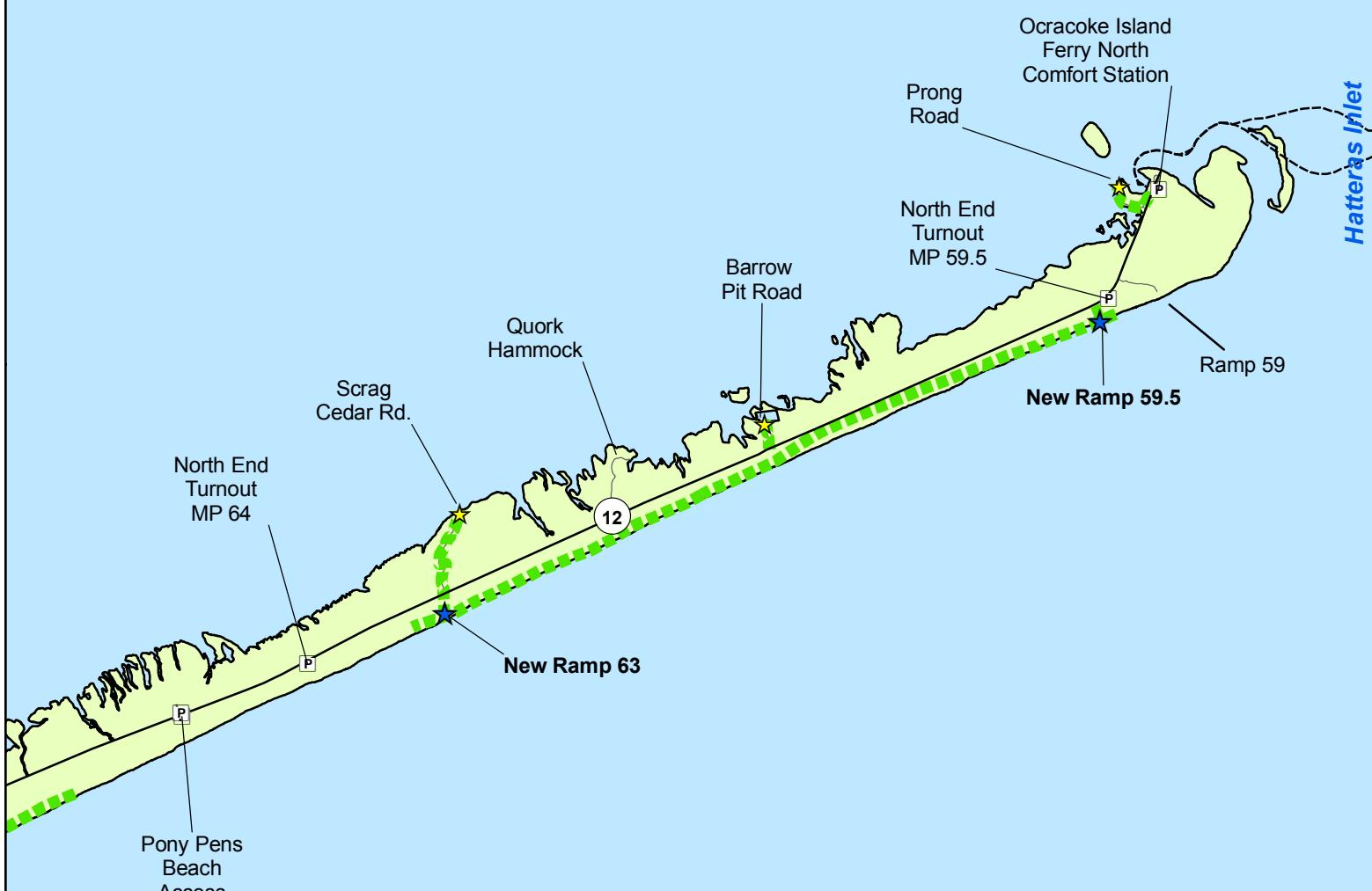
*Areas open to ORV
are subject to temporary
resource or safety closures.

Alternative F

Map 5 of 7

0 0.5 1 1.5 Miles





Legend

| | |
|-----------------------|-------------------|
| CAHA Boundary | ORV Ramps |
| PINWR Boundary | ★ Oceanside Ramps |
| Villages | ★ Soundside Ramps |
| Boat Ramps | — US Hwy |
| Campgrounds | — State Hwy |
| Existing Parking Lots | — Other |
| Swim Beaches | - - Ferry Route |

ORV Routes

- Open to ORV all year
- Seasonally open/closed

*Areas open to ORV
are subject to temporary
resource or safety closures.

Alternative F

Map 6 of 7

0 0.5 1 1.5 Miles



