Rehabilitation or Replacement of Pier at Bechers Bay

Santa Rosa Island

Environmental Assessment

Channel Islands National Park

Ventura, California

August 2007

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EXECUTIVE SUMMARY

BACKGROUND

The National Park Service proposes to replace or rehabilitate the existing pier at Bechers Bay on Santa Rosa Island in Channel Islands National Park. The purpose of this action is to provide a structurally sound pier at Santa Rosa Island in a manner that provides safe and dry vehicular and pedestrian access to the island for park visitors and staff, that is compatible with the character of the historic ranching district, that protects the area's natural resources, and that best serves park operations.

The existing pier at Bechers Bay, which was reconstructed in 1987, provides the only boat access to Santa Rosa Island for National Park Service staff and visitors. The pier provides for approximately 700 vessel landings per year and provides the only safe and economical means of delivering large quantities of materials and supplies to the island. In May of 2002, two bents (rows of piles) of steel piles supporting the pier collapsed near the shoreline. Emergency repairs were completed in June 2002 to keep island access operational. The pier had a lateral failure in December 2003 due to piling deterioration. Emergency repairs began in January 2004 and as of November 2006 all piles had been replaced. These emergency repairs will only provide an additional five years of service. If the pier is not replaced or rehabilitated, another failure could occur. Loss of the pier would result in loss of boat access to the island, which could lead to closure of the island for all but essential operations due to the cost of air transportation to the island and its inaccessibility by air during winter months. Closure of the pier would severely impede park operations, and visitor access. In addition, the pier's degraded condition and current configuration has created safety concerns for both park staff and visitors.

This environmental assessment evaluates four alternatives: the no action alternative, constructing a new pier on existing alignment of the current pier (National Park Service Preferred), rehabilitating the existing pier, and constructing a new pier on an adjacent alignment.

Impacts of the proposed alternatives were assessed in accordance with Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*, which requires that impacts to park resources be analyzed in terms of their context, duration, and intensity. It is important for the public and decision-makers to understand impacts in the short- and long-term, cumulatively, and within context, based on an understanding and interpretation by resource professionals and specialists. Impact topics evaluated in this environmental assessment include marine water resources / water quality, essential fish habitat, Santa Rosa Island fox, cultural landscapes / historic structures and districts, visitor use and experience, health and safety, and park operations.

Note to Reviewers and Respondents:

If you wish to comment on the environmental assessment, you may mail or email comments to the addresses listed below. National Park Service practice is to make public comments, including names and home addresses of respondents available for review during regular business hours. Individual respondents may request that their names and home address be withheld from the record, which will be honored to the extent allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be available for public inspection in their entirety.

Mailed comments can be sent to:

Superintendent, Channel Islands National Park
1901 Spinnaker Dr.
Ventura, CA 93001

Comments can be submitted on-line by following the appropriate links at:

http://parkplanning.nps.gov/CHIS

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CHAPTER 1 – PURPOSE OF AND NEED FOR ACTION

This environmental assessment (EA) evaluates a range of feasible alternatives and strategies for the replacement or rehabilitation of the deteriorating 574-foot pier on Santa Rosa Island, Channel Islands National Park. The EA has been prepared in accordance with National Environmental Policy Act (NEPA) and implementing regulations, 40 CFR Parts 1500-1508; National Park Service (NPS) *Director's Order 12 and Handbook, Conservation Planning, Environmental Impact Analysis, and Decision-making*; and in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR Part 800. Four alternatives are evaluated in this EA: the no action alternative and three action alternatives. The action alternatives include replacing the pier within its current footprint, rehabilitating the existing pier, and replacing the pier along a new alignment.

BACKGROUND

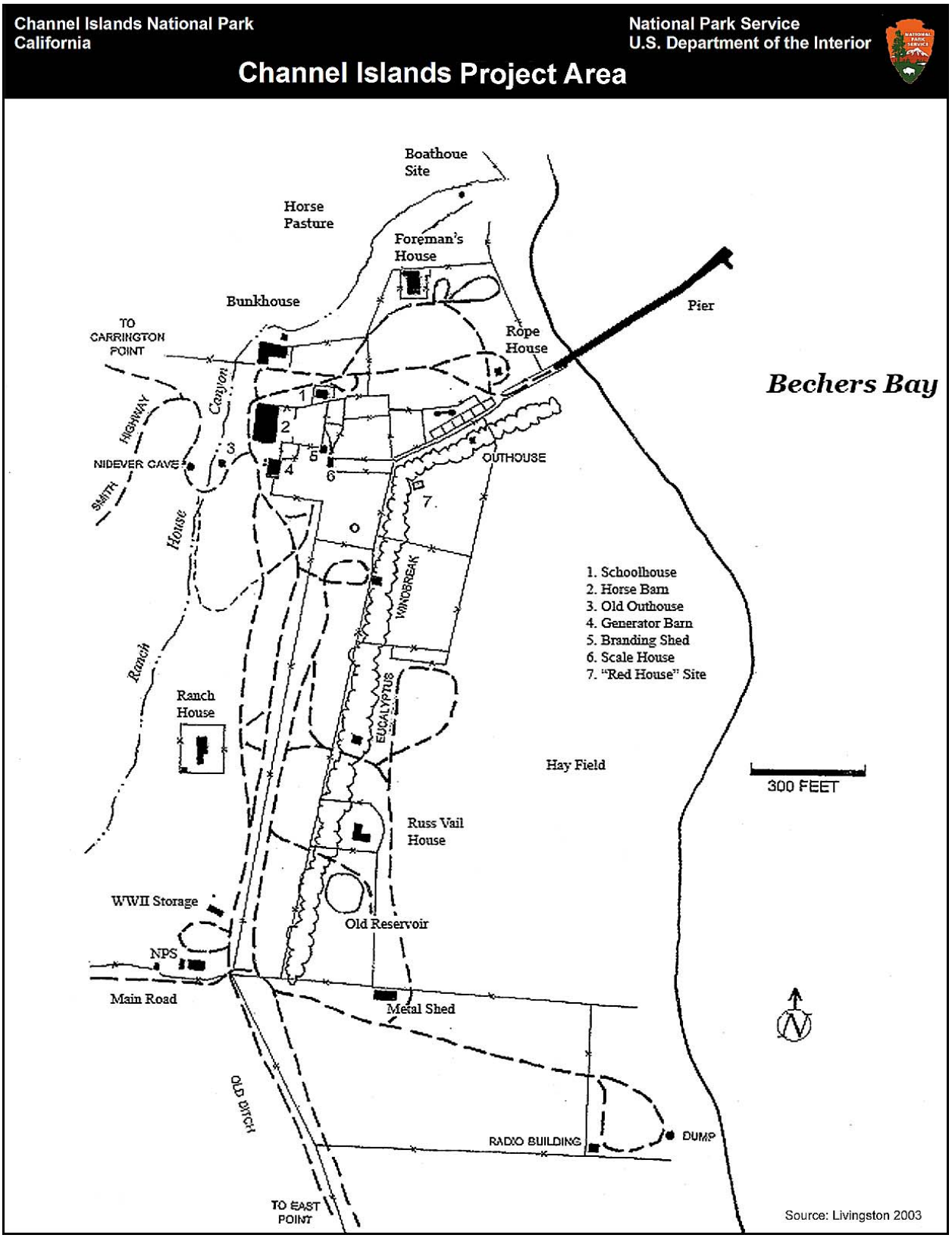
Channel Islands National Park consists of five of the eight Channel Islands off the coast of southern California. The park consists of 249,561 acres, half of which are under the ocean, and includes the islands of San Miguel (9,325 acres), Santa Rosa (52,794 acres), Anacapa (699 acres), Santa Barbara (639 acres), and Santa Cruz (60,645 acres, of which 46,090 acres is owned by the Nature Conservancy). These islands extend along the southern California coast from Point Conception near Santa Barbara to just north of Los Angeles (see Figure 1). National Park Service headquarters for Channel Islands National Park is located in the city of Ventura. The park is home to a wide variety of nationally and internationally significant natural and cultural resources. After being named a U.S. National Monument on April 26, 1938, and a National Biosphere Reserve in 1976, it was designated a National Park on March 5, 1980.

Santa Rosa Island, the second largest of the Channel Islands at almost 53,000 acres, is 40 miles west of Ventura. It is a diverse island of grass-covered rolling hills, steep canyons, creeks, rocky intertidal areas and sandy beaches. Along with the extensive natural and paleontological resources, Santa Rosa Island has rich archeological resources. Home to the Island Chumash until approximately 1820, "Wima" (as the Chumash referred to the island) contains thousands of significant and federally protected archeology sites. While the island does have a small airstrip, access to the island is primarily via a pier located in Bechers Bay, on the northeast side of the island (see Figure 2) that was originally constructed in the late 1800s to support an island cattle ranching operation. The pier now serves as the principal point of access for the NPS to unload materials and supplies and for park visitors and staff to arrive and depart as they travel between the island and the mainland.

The Santa Rosa Island pier extends from a low bluff abutment offshore approximately 574 feet. The outer half of the 20-foot wide pier deck gradually curves to east-northeast. The pier head is a widened section approximately 60 feet long and 40 feet wide with a 24-foot by 20-foot offset extension. The ramp and hoist used for many years to load and unload cattle is still in place. The pier's structural design is a composite of conventional timber frame construction and unique pile foundation support. The first five bents from the bluff top abutment consist of irregularly spaced driven timber piles reinforced with transverse timber bracing. These piles pre-date the 1987 reconstruction work (see below). The remainder of the pier was reconstructed in the late 1980s using uncoated steel drill stem to form pile bents. Each steel drill stem bent is X-braced in the transverse direction with custom-fitted drill stem field welded between each pile. Bays are diagonally braced with sections of drill stem that are welded to the end and middle piles of each bent. Douglas fir 12 x 12 members comprise the pile caps and are bolted to each pile with a specially fabricated U-clip attached to the butt with a collar fitting. Conventional timber stringers and planks complete the deck framing plan. A fender system consisting of closely spaced drill stem is on two sides of the head (Noble Consultants, Inc. 2003).

FIGURE 1: PROJECT VICINITY

FIGURE 2: PROJECT AREA



Aerial View of Santa Rosa Island Pier

The existing pier was repaired and rebuilt in 1987, shortly after the NPS acquired Santa Rosa Island, to make it safe for park operations and to provide access to the island for visitors, researchers, and NPS employees. The 1987 reconstruction was temporary in nature and not intended to last for more than 20 years. Since the 1987 reconstruction work, the pier has suffered heavy corrosion from the marine environment and deterioration from storms, vehicle operation, and overall use. In May of 2002, two bents (rows of piles) of steel piles supporting the pier collapsed near the shoreline. Emergency repairs were completed in June 2002, to keep island access operational. The pier had a lateral failure in December 2003, due to piling deterioration. The pier was closed to vehicle traffic until emergency repairs could be made beginning in January 2004. These repairs included driving replacement piles and welding new bracing to keep the pier operational. As of November 2006, all piles had been replaced as part of emergency repairs in order to keep the pier safe for operation.

The pier meets the land at a soft sandstone outcrop on the beach and is located within the partially sheltered Bechers Bay. Westerly winds predominant at Santa Rosa Island with winds from the west through northwest occurring over 50% of the time. Average wind speeds from all directions vary between 7 to 20 miles per hour. Maximum wind velocities recorded over an 8-year period of record have been less than 50 miles per hour and occurred from the southeast and northwest directions. Tides at Santa Rosa Island are mixed semi-diurnal with two high and two low waters of different magnitudes each day. Because of the partial shelter effects in Bechers Bay and adjacent Santa Cruz Island, the pier is most critically exposed to northwesterly storm swell originating in the Eastern Pacific Ocean. Deepwater wave heights generally do not exceed 10 feet and wave periods mostly range from 12 to 18 seconds. During extreme storm events wave heights can exceed 20 feet and wave periods can increase 18 to 22 seconds. A

20-foot wave ultimately reduces to a height of about 10 feet in the vicinity of the pier, but exceeds the deck elevation of the existing pier. Such a storm event could overtop the existing pier deck exposing the pier to the destructive lateral and uplift forces associated with wave impact and overtopping (Noble Consultants, Inc. 2003).

View of Santa Rosa Island Pier from Shore

PURPOSE OF THE ACTION

The NPS is proposing to replace or rehabilitate the existing pier at Bechers Bay on Santa Rosa Island. The purpose of this project is to provide a structurally sound pier at Santa Rosa Island in a manner that provides safe and dry vehicular and pedestrian access to the island for park visitors and staff, that is compatible with the character of the historic ranching district, that protects the area's natural resources, and that best serves park operations.

NEED FOR THE ACTION

The existing pier at Bechers Bay provides the only boat access to Santa Rosa Island for NPS personnel, concessionaire boat operators, and the special use permittee. It also provides the only economical means of delivering large quantities of materials and supplies to the island. During the 2002 fiscal year, the pier was used to transfer a total of 1.4 million pounds of cargo (approximately 25,000 pounds a week) in support of park operations, resource management and protection, and maintenance activities at Santa Rosa Island. The pier provides for approximately 700 vessel landings per year. The recent emergency repairs will only provide a 5-year life to the pier, even with day-to-day maintenance activities. If the pier is not replaced or rehabilitated, it could fail through continued deterioration or during a major storm event. Loss of the pier would result in loss of boat access to the island. This could lead to closure of the island for all but essential operations due to the cost of air transportation to the island and its inaccessibility by air during winter months. Closure or partial closure of the pier would severely impede park research and restoration efforts, law enforcement operations, and access by visitors and the island's special use permittee.

In addition, park staff and visitors' safety are affected by the current configuration and overall deterioration of the existing pier. To access the current pier from a boat or a boat from the pier, people are required to climb an 8- to 15-foot ladder (depending on the tide). Climbing or descending this ladder is inherently dangerous. A wet ladder, movement of the boat, and individuals physically unable to climb can result in falls and injuries. In addition, there are tripping hazards from the wheel load runners that run the entire length of the pier. There is also little room at the end of the pier to safely use the park's truck-mounted crane to load and unload cargo. Finally, the abutment erosion occurring at the point where the pier meets the shoreline could result in a failure of that portion of pier, which could lead to injuries if people are present.

The pier is vital to park operations and visitor use on Santa Rosa Island. Because the pier has experienced irreversible damage and is in an advanced state of deterioration and poses continued safety concerns to both park staff and visitors, the park proposes to replace or rehabilitate the existing pier at Bechers Bay.

OBJECTIVES IN TAKING ACTION

Objectives are "what must be achieved to a large degree for the action to be considered a success" (*Director's Order 12*). All alternatives selected for detailed analysis must meet all objectives to a large degree and resolve the purpose and need for action. Objectives for identifying a preferred alternative must be grounded in the park's enabling legislation, purpose, significance, and mission goals, and be

compatible with direction and guidance provided by each park unit's general management plan (GMP), strategic plan, and/or other management guidance. The following objectives related to the replacement of the 574-foot pier on Santa Rosa Island were compiled by park staff.

PARK OPERATIONS

- Meet the operational requirements of the park and concessionaire, including accommodations for cargo transfer.
- Provide a minimum of 20 years of continued use before significant maintenance is required.

HEALTH AND SAFETY

- Provide safe, dry, and easy access to the pier for both park staff and visitors.
- Minimize safe and functional circulation and conflicts between vehicles and visitors on the pier.

VISITOR USE AND ENJOYMENT

- Provide safe, dry, and easy access from boats to the pier for park visitors and their personal supplies.

PURPOSE AND SIGNIFICANCE OF THE PARK

National Park System units are established by Congress to fulfill specified purposes. A park's purpose is the fundamental building block for its decisions to conserve resources while providing for the "enjoyment of future generations." The significance of Channel Islands National Park stems from the islands' remote, isolated nature. The park contains examples of two bio-geographical provinces, the Oregonian and the Californian. In a remarkably small area, it harbors the biologic diversity of 2,000 miles of the West Coast of North America.

Channel Islands National Park also preserves some of the finest examples of southern California coastal and marine ecosystems, endemic terrestrial and marine plants and animals, a prolific paleontological record, and over 10,000 years of continuous human occupation that represents a variety of cultures. In addition, it provides the public with unparalleled opportunities for solitude, tranquility, wildlife viewing, appreciation of natural history, and outdoor recreation and education.

Establishment — Channel Islands National Park was established in 1980 by Public Law 96-199. Congress created the park to:

- Protect the nationally significant natural, scenic, wildlife, marine, ecological, historical, archeological, cultural, and scientific values of the Channel Islands, including, but not limited to:
    - The brown pelican nesting area
    - The undisturbed tide pools providing species diversity unique to the eastern Pacific coast
    - The pinnipeds that breed and pup almost exclusively on the Channel Islands, including the only breeding colony for northern fur seals south of Alaska
    - The Eolian landforms and caliche
    - The presumed burial place of Juan Rodriguez Cabrillo
    - The archaeological evidence of substantial populations of Native Americans
- Understand population dynamics and trends in terrestrial and marine ecosystems.
- Provide for visitor use on a low-intensity, limited entry basis to assure negligible adverse impact on the park resources.

Mission Statement — The mission of Channel Islands National Park is to protect and interpret the natural ecosystems and cultural values of the Channel Islands and adjacent marine waters and to provide present and future generations appropriate opportunities to experience and understand park resources and values.

RELATED PLANS AND POLICIES

NATIONAL PARK SERVICE PLANS, POLICIES, AND ACTIONS

Channel Islands National Park's current GMP was completed in 1985. Since that time, much has occurred, such as completion of the park's major land acquisition effort, expansion of park operations and visitor facilities, and an increase in the number of resource issues facing the park.

In 2001, the park began revision of the GMP that will help guide the park's management policies and direction for the next 15 to 20 years. As of early 2007, the park's GMP was still under revision. The new GMP will provide a vision for the park's future, as well as guidance in resource preservation, protection, and management that will help achieve that vision. The plan will also help identify how the NPS may best protect cultural and natural resources while providing for visitor enjoyment of the park.

National Parks Omnibus Management Act of 1998 (NPOMA) (16 U.S.C. 5901 et seq.) underscores NEPA in that both 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 should this be the case.

NPOMA directs the NPS to obtain scientific and technical information for analysis. The NPS handbook for *Director's Order 12* states that if "such information cannot be obtained due to excessive cost or technical impossibility, the proposed alternative for decision will be modified to eliminate the action causing the unknown or uncertain impact or other alternatives will be selected" (NPS 2001).

Director's Order 28 calls for the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship and in accordance with the policies and principles contained in the NPS *Management Policies* (NPS 1998). This order also directs the NPS to comply with the substantive and procedural requirements described in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. Additionally, the NPS will comply with the 1995 Servicewide Programmatic Agreement with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers. The accompanying handbook to this order addressed standards and requirements for research, planning, and stewardship of cultural resources as well as the management of archeological resources, cultural landscapes, historic and prehistoric structures, museum objects, and ethnographic resources.

OTHER FEDERAL AGENCY PLANS, POLICIES, AND ACTIONS

The NPS is governed by laws, regulations, and management plans before, during, and following any management action related to the developed NEPA document.

National Environmental Policy Act, 1969, as Amended

Section 102(2) (c) of this act requires that an environmental impact statement be prepared for proposed federal actions that may significantly affect the quality of the human environment or are major or controversial federal actions.

Redwood National Park Act of 1978, as Amended

All National Park System units are to be managed and protected as parks, whether established as a recreation area, historic site, or any other designation. This act states 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."

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 parks' cultural resources must comply with this legislation.

Historic Sites Act of 1935

This act declares as national policy the preservation for public use of historic sites, buildings, objects, and properties of national significance. It authorizes the Secretary of the Interior and NPS to restore, reconstruct, rehabilitate, preserve, and maintain historic or prehistoric sites, buildings, objects, and properties of national historical or archaeological significance.

California State Marine Protected Areas in the Channel Islands

The State of California's newly established Marine Protected Areas in the Channel Islands took effect on April 9, 2003. Within these reserves it is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resource, except under a permit or specific authorization from the commission for research, restoration, or monitoring purposes. There are 10 marine reserves and 2 conservation areas in the Channel Islands.

Magnuson-Stevens Act Provisions – Essential Fish Habitat

The Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act, as well as the Fish and Wildlife Coordination Act, authorize the National Marine Fisheries Service (NMFS) to evaluate development projects proposed or licensed by federal agencies, including the U.S. Army Corps of Engineers (Corps of Engineers) and the Federal Energy Regulatory Commission. If coastal development projects have the potential to adversely affect marine, estuarine, or anadromous species or their habitat, the NMFS makes recommendations on how to avoid, minimize, or compensate these impacts. This habitat is termed "Essential Fish Habitat" and is broadly defined to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The Act requires the eight Regional Fishery Management Councils to describe and identify the essential habitat for the managed species, minimize to the extent practicable adverse effects on EFH caused by fishing, and identify other actions to encourage the conservation and enhancement of EFH.

The Act also establishes measures to protect EFH. The NMFS must coordinate with other federal agencies to conserve and enhance EFH, and federal agencies must consult with NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely affect EFH. In turn, NMFS must provide recommendations to federal and state agencies on such activities to conserve EFH. These recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from actions or proposed actions authorized, funded, or undertaken by that agency.

Marine Mammal Protection Act

The Marine Mammal Protection Act prohibits, with certain exceptions, the take 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 U.S. Congress passed the Marine Mammal Protection Act of 1972, based on the following findings and policies:

- Some marine mammal species or stocks may be in danger of extinction or depletion as a result of human activities;

- These species or stocks must not be permitted to fall below their optimum sustainable population level ("depleted");
- Measures should be taken to replenish these species or stocks;
- There is inadequate knowledge of the ecology and population dynamics; and
- Marine mammals have proven to be resources of great international significance.

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) was enacted on October 27, 1972, to encourage coastal states, Great Lake States, and U.S. territories and commonwealths (collectively referred to as coastal states) to develop comprehensive programs to manage and balance competing uses of and impacts to coastal resources. The CZMA emphasizes the primacy of state decision-making regarding the coastal zone. Section 307 of the CZMA (16 U.S.C. 1456), called the federal consistency provision, is a major incentive for states to join the national coastal management program and is a powerful tool that states use to manage coastal uses and resources and to facilitate cooperation and coordination with federal agencies.

Federal consistency is the CZMA requirement where federal agency activities that have reasonably foreseeable effects on any land or water use or natural resource of the coastal zone (also referred to as coastal uses or resources and coastal effects) must be consistent to the maximum extent practicable with the enforceable policies of a coastal state's federally approved coastal management program. In the state of California, the California Coastal Commission manages the coastal management program and reviews all federal consistency determinations.

Rivers and Harbors Act, as amended (33 U.S.C. 401 et seq.)

The Corps of Engineers is authorized to regulate the construction of any structure or work within navigable waters under Sections 9 and 10 of the Rivers and Harbors Act (RHA). This Act authorizes the Corps of Engineers to regulate the construction of such diverse activities as wharves, breakwaters, or jetties; bank protection or stabilization projects; permanent mooring structures, vessels, or marinas; intake or outfall pipes; canals; boat ramps; aids to navigation; or other modifications affecting the course, location condition, or capacity of navigable waters. The Corps of Engineer's jurisdiction under RHA is limited to "navigable waters," or waters subject to the ebb and flow of the tide shoreward to the mean high water mark that may be used to transport interstate or foreign commerce. The definition of navigable waters under RHA is substantially more limited than the definition under Section 404 of the Clean Water Act, which extends to inland wetlands. The Corps of Engineers must consider the following criteria when evaluating projects within navigable waters: (1) the public and private need for the activity; (2) reasonable alternative locations and methods; and (3) the beneficial and detrimental effects on the public and private uses to which the area is suited.

ABAAS Standards for Accessible Design

This document sets guidelines for accessibility to places of public accommodation and commercial facilities by individuals with disabilities. These guidelines are to be applied during the design, construction, and alteration of such buildings and facilities to the extent required by regulations issued by federal agencies, including the Department of Justice, under the Architectural Barriers Act Accessibility Standards (ABAAS) issued by the General Services Administration in 2004.

SCOPING AND ISSUES

In April 2006, an internal scoping meeting was held at the park as part of a Value Analysis and Choosing-By-Advantages workshop that addressed the replacement and rehabilitation of the pier on Santa Rosa Island. The interdisciplinary team of participants included NPS staff from the Channel Islands National Park, the Denver Service Center, the NPS Pacific West Regional Office, and the URS Corporation. One

purpose of the workshop was to evaluate potential alternatives and to address the needs of Channel Islands National Park using Choosing-by-Advantages, a technique that facilitates decision-making. This technique focuses on the differences between alternatives, and determines the importance of each advantage. The process establishes a single, non-monetary scale that compares the importance or benefits of all the alternatives. In using the Choosing-by-Advantage process, the NPS asks what and how large are the advantages of each alternative under consideration; how important are the advantages of each alternative; and, finally are those advantages worth their associated cost.

At the April 2006, meeting, the Choosing By Advantages (CBA) participants examined the current conditions of the pier on Santa Rosa Island and developed different actions the park could take for addressing the current problems facing this pier. From those actions, a preferred alternative was developed that best met the needs of the park. The primary concern of park staff is to repair or replace the pier with structural elements that are sensitive to the Santa Rosa Island Ranching Historic District, while enhancing visitor experience, providing safe and efficient accommodation of park visitors, and serving essential management access needs. Although the pier is not a contributing feature, it is within the historic ranching district.

The park also conducted public scoping during October 2006. Scoping letters were sent on October 3 to approximately 76 parties, including state and federal agencies, private organizations, individuals, and local libraries. The letter was also posted to the Planning, Environment, and Public Comment (PEPC) website at http://parkplanning.nps.gov/CHIS. Responses were requested within 15 days of receipt. Response letters, including two letters from public agencies (California Department of Game and Fish and California Coastal Commission), outlined concerns related to visitor loading and unloading on the Santa Rosa Island pier and identified mitigation and permits that may be required to protect state-listed species, air quality, and other coastal resources and to construct structures or work in navigable waters of the U.S.

Availability of the EA for the 30-day public review was advertised via press release, publication on the park's website, and through the PEPC website noted above.

IMPACT TOPICS

IMPACT TOPICS RETAINED FOR ANALYSIS

The following impact topics are discussed in the "Affected Environment" chapter and analyzed in the "Environmental Consequences" chapter. These topics are resources of concern that could be beneficially or adversely affected by the actions proposed under each alternative and are developed to ensure that the alternatives are evaluated and compared based on the most relevant topics.

Marine Water Resources / Water Quality

During construction, turbidity in the immediate vicinity of the pier would increase as a result of driving piles and other actions associated with the action alternatives. In addition, the use of heavy machinery near and over the water would increase the chance that potential contaminants, such as fuel, lubricants, or hydraulic fluid, could be released into the water column, which could adversely impact water quality in Bechers Bay. The NPS would implement best management practices to minimize turbidity plumes during construction, and a hazardous spill prevention plan would be developed to address the potential for releases. However, the potential still exists for impacts to waters in the bay. Therefore, marine water resources / water quality is addressed as an impact topic in this EA.

Essential Fish Habitat

Construction activities can adversely affect EFH through pile driving and removal activities. Eelgrass and surfgrass beds are important components of EFH that when disturbed can adversely affect EFH. Pile driving can generate sound-pressure waves under water which, at certain thresholds, can damage the

auditory system in many fishes. Pile removal can harm EFH by suspension of sediments and increasing turbidity, thereby affecting respiration if fishes are present in the water column. If the footprint of the Bechers Bay pier were to be expanded and the amount of overwater shading increased, EFH could be primarily affected by creating changes in ambient light conditions and secondarily by potentially altering the wave and current energy regime and through new activities associated with the use and operation of the facilities. Therefore, EFH is addressed as an impact topic in this EA.

Threatened, Endangered, and Species of Special Concern – Santa Rosa Island Fox

Currently, there are 26 federally threatened or endangered species found scattered across the islands of Channel Islands National Park, including 3 bird species, 1 mollusk, 14 plants, 7 mammals, and 1 reptile (NPS 2007a). Of these 26 species, only the Santa Rosa Island fox (*Urocyon littoralis santarosae*) could be present near the project area during pier reconstruction or rehabilitation. Construction materials and storage areas may be an attractive nuisance for these foxes because they may get into hazardous substances or be accidentally killed or injured by construction equipment while construction materials are moved on site. Therefore, Santa Rosa Island foxes are addressed as an impact topic in this EA.

Cultural Landscapes / Historic Structures and Districts

Bechers Bay pier is within the Santa Rosa Island Ranching Historic District, which is eligible for listing in the National Register of Historic Places. As such, it is also part of the man-made cultural landscape of the island. Therefore, both historic structures and districts and cultural landscapes are addressed as impact topics in this EA.

Visitor Use and Experience

The majority of visitors accessing Santa Rosa Island utilize the pier at Bechers Bay. It would become necessary to close off public access to the pier during construction activities associated with the action alternatives. To access the island during this time, visitors would either have to fly via a chartered aircraft or take a skiff launched from one of the concessionaire charter boats. This would affect some people's ability to access the island in a safe, comfortable, and/or affordable manner. Therefore, impacts to visitor use and experience are addressed as an impact topic in this EA.

Health and Safety

The pier at Bechers Bay is the only pier that services Santa Rosa Island. Under the no action alternative, people are required to climb or descend an 8- to 15-foot ladder (depending on the tide) to access either the boat or pier. Climbing this ladder to access the pier is inherently dangerous. As noted earlier, a wet ladder, movement of the boat, and people physically unable to climb, can lead to falls and injuries. Because of these dangers, NPS policy currently prohibits concessionaires from off-loading passengers in seas with greater than one-foot swells. However, under any of the action alternatives, visitor safety would be greatly improved as landing platforms would be installed, allowing park visitors to disembark the boat and climb up a staircase protected with non-slip treads and handrails.

During construction activities associated with the action alternatives, it would become necessary to close off public access to the pier. During this time, visitors would have to access the island via aircraft or a skiff launched from one of the concessionaire charter boats. Either method of transport has its inherent risks to safety. As a result of these safety issues, impacts to human health and safety are addressed as an impact topic in this EA.

Park Operations and Management

The most cost effective and efficient means of transporting materials necessary for the overall management of the island by NPS staff is via the park's boats. The cargo is off-loaded from the boats via a crane located at the end of the pier. During the times when the pier would be closed for construction, materials (e.g., fuel, food) would have to be stockpiled prior to the closure or brought in via airplane or the park's landing craft. However, after the replacement or rehabilitation of the pier is completed, the

amount of time and type of maintenance required would decrease; therefore, this impact topic was carried forward for further analysis in this EA.

IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

The following impact topics were eliminated from further analysis in this EA. A brief rationale for dismissal is provided for each topic. With mitigation, potential impacts to these resources would be negligible to minor, localized, and most likely immeasurable. A list of approved mitigation measures that would be implemented with each action alternative is provided in the "Alternatives" chapter.

Soils

The use of heavy equipment needed for the replacement or rehabilitation of the Santa Rosa Island pier would have only short-term negligible adverse impacts to the soils. This equipment would be stored, driven, and utilized mainly on the existing roads or on other hardened surfaces throughout the island. All work crews that repair or replace the pier would be required to live within the existing bunkhouse at the ranch, on a crew boat nearby, or in temporary housing facilities on the island. Any temporary housing facilities would be located in previously disturbed locations on the island during construction, eliminating the possibility of related short-term soil impacts. The NPS would implement best management practices to minimize soil erosion during construction and from runoff. Because there would likely be short-term negligible adverse impacts to soils, this impact topic was dismissed from further analysis in this EA.

Terrestrial Wildlife and Wildlife Habitat

Construction activities associated with replacement or rehabilitation of the pier on Santa Rosa Island would disturb only previously developed areas that are of low habitat value to wildlife. In areas adjacent to the pier, and the road leading to the pier, wildlife has been habituated to human activity through years of close association with the pier and attendant human activity, boats, machinery, heavy visitor use, and vehicles reducing the overall value of this habitat within the general vicinity of the pier. Best management practices would be implemented during construction to prevent wildlife from being attracted into the area by garbage or further disturbance by pets.

Terrestrial wildlife that does frequent the general area of the pier may be temporarily displaced during construction. Some individuals could be forced to relocate outside the construction limits. This displacement could result in a slight population depression adjacent to the site, but following project completion, wildlife would again reoccupy the project area to pre-construction levels. Implementing the action alternatives would be expected to result in localized and short-term negligible adverse impacts on terrestrial wildlife throughout the duration of the construction. Due to these limited impacts, this impact topic was dismissed from further analysis in this EA.

Marine Mammals and Other Organisms

Under the action alternatives, organisms that utilize the piles of the pier as habitat (e.g., barnacles, sponges, and certain crustaceans) would be lost as the current piles are removed to make way for new piles. The new piles would be protected with a spray-applied epoxy coating to prevent these organisms from utilizing the piles as habitat, prolonging the life of the piles. Because of the vast numbers and extent of pier dependent organisms in the marine environment, the loss of this small population would be negligible.

While occasional transient pinnipeds (harbor seals and California sea lions) or whales do occur in the vicinity, there are no resident marine mammal populations that utilize Bechers Bay. There are no sensitive or important use areas in the bay, such as haul-out sites or pupping areas. The bay is very shallow for approximately ½ mile out and the occurrence of cetaceans in the bay is rare. No federal or state listed marine mammals are known to occur within 1.5 miles of the pier. To protect potential transients from the effects of underwater sound during pile removal and installation and as required by the Marine Mammals Protection Act (explained in "Related Plans and Policies"), the park would consult with NMFS

regarding the most appropriate protection measures. This would include evaluating the availability and feasibility of the construction equipment, methods, and manner of construction, such as size and type of pile driving hammers (e.g., vibratory, diesel impact, hydraulic impact) and timing and duration of pile driving in order to reduce impacts to the lowest level practicable. An effort was made to find comparable noise impact data for this type of project. However, no applicable data were found.

Other mitigative measures that could be used during construction include marine mammal monitoring by a qualified biologist approved by NMFS and the establishment of safety zones to be maintained around pile removal and installation activities to protect marine mammals. Safety zones could be established and monitored to include all areas where the underwater sound pressure levels (SPLs) are anticipated to equal or exceed the disturbance threshold of 160 dB re 1 microPascal (µPa) RMS (impulse) for pinnipeds and 180 dB re 1 µPa RMS (impulse) for whales. (See glossary for definition of RMS impulse.) Monitors would visually survey the area to confirm that the safety zone was clear of marine mammals before pile driving could begin and would continue monitoring during the duration of pile driving. Protocols and mitigation requirements for sighting of marine mammals within the safety zone would be established. Based on initial guidance from NMFS, once individual pile driving begins, installation should likely continue until completed. Before beginning the next pile driving, the monitor would again confirm that the safety zone was clear.

The numbers of marine mammals that may potentially be impacted by construction activities is expected to be small, if any, due to the transient use of Bechers Bay. With implementation of mitigation measures, disturbance from construction activities is expected to have a short-term negligible impact on the behavior of a small number of harbor seals or sea lions that may be in the vicinity during construction. Affected animals may respond by avoiding or swimming away from the area during pile driving operations. If it is determined in consultation with NMFS, that the project might result in incidental takings of small numbers of marine mammals by harassment, the NPS would apply for a Marine Mammals Protection Act incidental harassment authorization.

Based on the negligible impact to a small number of transient animals, this impact topic was dismissed from further analysis in this EA.

Other Threatened, Endangered, and Species of Special Concern

The Endangered Species Act (1973), as amended, requires an examination of impacts on all federally listed threatened or endangered species. National Park Service policy also requires examination of the impacts on federal candidate species, as well as state-listed threatened, endangered candidate, rare, declining, and sensitive species. The U.S. Fish and Wildlife Service (USFWS) has jurisdiction of all federally listed terrestrial and fresh-water species, while the NMFS has jurisdiction of all federally listed marine species. As part of Section 7 of the Endangered Species Act, the NPS initiated informal consultation with both the USFWS and the NMFS in letters dated May 26, 2006, regarding the presence of federally listed or candidate species or critical habitat within or near the project area and the potential for such species or habitat to be impacted by the project. Letters in response were not received from the USFWS or NMFS.

As noted earlier, there are 26 federally threatened or endangered species found scattered across the islands of Channel Islands National Park, including 3 bird species, 1 mollusk, 14 plants, 7 mammals, and 1 reptile (NPS 2007a). The Santa Rosa Island fox may be present in the project area and as described above in “Impact Topics Retained for Analysis,” is analyzed in this EA. Bald eagles are transient in the area according to NPS biologists; thus, there would be no effect. None of the other federally listed species occur near the pier, the areas surrounding the road leading to the pier, or in Bechers Bay and there would be no effect on any of these other species. Therefore, these species were dismissed from further analysis in this EA.

The California Department of Fish and Game (CDFG) was also consulted and responded regarding state-listed species. They responded requesting that any artificial night lighting be mitigated because of potential effects to seabirds that include the Xantus's murrelet, ashy storm-petrel, black storm-petrel, and rhinoceros auklet. Although these seabirds are not known to breed on Santa Rosa Island, they may transit or forage within the area. To address potential concerns, lighting mitigation measures are included in the "Alternatives" chapter.

Terrestrial Vegetation

The majority of construction equipment needed to replace or rehabilitate the pier would be located on the hardened surface at the end of the pier or on barges. While individual plants located immediately adjacent to these hardened surfaces may be impacted, no measurable changes in the overall plant community would occur, nor would any species of special concern be impacted. Mitigation measures would also be in place to prevent the transmission of non-native seeds or plants to the island. Overall adverse impacts to terrestrial vegetation would be negligible and of short duration; therefore, terrestrial vegetation was dismissed as an impact topic in this EA.

Geology and Topography

The replacement/rehabilitation of Santa Rosa Island pier would not create earth disturbance that would result in a loss of geologic and topographic resources. Implementing the no action alternative would represent the current conditions, and would not impact geology or topography. Therefore, this impact topic was dismissed from further analysis in this EA.

Paleontological Resources

While significant paleontological resources are found on Santa Rosa Island, no known paleontological resources occur within the vicinity of the pier. Therefore, this impact topic was dismissed from further analysis in this EA.

Geohazards

There are no known geohazards within the project area; therefore, this impact topic was dismissed from further analysis in this EA.

Wetlands

Wetlands include areas inundated or saturated by surface or groundwater for a sufficient length of time during the growing season to develop and support characteristic soils and vegetation. The NPS classifies wetlands based on the USFWS *Classification of Wetlands and Deepwater Habitats of the United States*, also known as the Cowardin classification system (Cowardin et al. 1979). Based on this classification system, a wetland must have one or more of the following attributes:

- The habitat at least periodically supports predominately hydrophytic vegetation (wetland vegetation);
- The substrate is predominately undrained hydric soil; or
- The substrate is non-soil and saturated with water, or covered by shallow water at some time during the growing season.

No wetlands occur within the general vicinity of the pier; therefore, this impact topic was dismissed from further analysis in this EA.

Floodplains

Executive Orders 11988 (Floodplain Management) requires an examination of impacts to floodplains and the potential risk involved in placing facilities within floodplains. The NPS *Management Policies 2006*, Section 4.6.4, Floodplains, and *Director's Order 77.1, 1993 NPS Floodplain Management Guidelines,*

provide guidelines on developments proposed in floodplains. These guidelines apply to actions, such as piers, that are functionally dependent upon locations in proximity to water and for which non-floodplain sites are never a practicable alternative. While non-floodplain locations may not be a practicable alternative for these types of activities, minimization of impacts to the natural resources of floodplains remains an important requirement.

The beach area located beneath and adjacent to the current pier falls within the NPS Action Class III floodplain category. Class III floodplains, as defined by the NPS, are coastal high hazard areas usually confined to the beach in front of high bluffs where wave impact is the most significant inducing factor. These areas can also be susceptible to tsunamis. A Statement of Findings (SOF) would normally be required for new construction. However, because the rehabilitation or replacement of the pier would result in no net change in development within the coastal high hazard area (e.g., the current pier would either remain, or be replaced with a pier of approximately the same size and proportion, and sited within the same area as the current pier) there would be no long- or short-term adverse impacts associated with the occupancy and modification of floodplains, and would avoid direct or indirect support of floodplain development. Therefore, this impact topic was dismissed from further analysis in this EA.

Air Quality

The 1963 Clean Air Act, as amended (42 U.S.C. 7401 *et seq*.), requires federal land managers to protect park air quality. The act also assigns the federal land manager (Park Superintendent) an affirmative responsibility to protect the values related to the park's air quality—including visibility, plants, animals, soil, water quality, cultural and historic resources and objects, and visitors—from adverse air pollution impacts. Section 118 of the Clean Air Act requires that the park meet all federal, state, and local air pollution standards. Santa Barbara County is designated as a federal ozone attainment area for the 8-hour ozone National Ambient Air Quality Standard. (The 1-hour federal ozone standard was revoked for Santa Barbara County). A new California 8-hour ozone standard was implemented in May 2006. The County violates this new state 8-hour ozone standard and continues to violate the state 1-hour standard for ozone and the state standard for PM_{10} (particulate matter particles with a diameter of 10 micrometers or less).The Santa Barbara County Air Pollution Control District (APCD) has not set thresholds for air emissions from short-term construction activities (Santa Barbara APCD 2006).

In areas where pollutants exceed federal standards, all federal projects with the potential to emit over 50 tons per year of volatile organic compounds (VOC) or nitrogen oxides (NOx) emissions, both of which are precursors to ozone formation, need to prove their emissions would not cause new or contribute to existing non-attainment days (Conformity Rule). It is estimated that up to two construction seasons, each extending throughout the summer and fall months, would be required to construct the new pier. Types of equipment that might be used during pier rehabilitation or replacement activities over include a 20-ton truck crane, a crew boat that transports the crew to and from the island, a boat and barge to haul equipment to and from the island, a pickup truck on the island to transport equipment and demolition material to and from the stockpile area, chain saws, a compressor, and a generator. This equipment and associated construction activities would be well below the 50 tons per year level that would trigger a conformity analysis. Additionally, in compliance with the Santa Barbara APCD, operation of the project would:

- emit less than the daily trigger for offsets or Air Quality Impact Analysis set in the APCD New Source Review Rule 1, for any pollutant (i.e., 240 pounds per day for reactive organic compounds (ROC) or NOx; and 80 pounds per day for PM10;
- emit less than 25 pounds per day of NOx or ROC from motor vehicle trips only;
- not cause or contribute to a violation of any California or NAAQ standard (except ozone);
- not exceed the APCD health risk public notification thresholds adopted by the APCD Board; and

- be consistent with the adopted federal and state air quality plans for Santa Barbara County.

Mitigation measures would be implemented for any of the action alternatives to minimize the effect of construction machinery on island air quality. Because only negligible adverse impacts to air quality are anticipated, this impact topic was dismissed from further analysis in this EA.

Archeological Resources

The Santa Rosa Island pier is attached to the rock abutment at the Bechers Bay coastline. The area of potential impact around the pier has been surveyed for archeological resources, and none was found. Any construction activities on the shore would be conducted in previously disturbed areas. Because little soil would be disturbed at the rock abutment by any renovations to, or new construction at, the pier, it is highly unlikely that archeological resources would be impacted. Any regrading of the dirt road for construction would occur in the existing disturbed footprint of the road. Any potential for intact archeological remains has been impacted by construction and reconstruction of the pier over the years.

If an archeological resource were found during construction, work in the area of the find would be stopped until the find was documented, its significance assessed, and appropriate mitigation strategies developed in consultation with the State Historic Preservation Officer (SHPO). Therefore, archeological resources was dismissed as an impact topic in this EA.

Ethnographic Resources

The NPS defines an ethnographic resource as a site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it. The NPS sent a scoping letters to members of the Chumash Tribe and to the Santa Ynez Band of Mission Indians that have expressed an interest in Channel Islands National Park. To date, no comments on the proposed undertaking have been received. No ethnographic resources within the Area of Potential Effect have been identified for this undertaking. Therefore, this impact topic was dismissed from further analysis.

Museum Collections

There are no structures within the Area of Potential Effect that house museum collections. Therefore, this impact topic was dismissed from further analysis in this EA.

Natural Soundscapes

In accordance with NPS *Management Policies 2006* and *Director's Order 47, Sound Preservation and Noise Management*, an important part of the NPS mission is preservation of natural soundscapes associated with national park units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds.

On Santa Rosa Island, predrilling with an auger would be required for installation of piles. Piles would be driven to required depth through the column for predrilled fractured rock, and then post grouted to provide required strength. Pile driver noise (above water) from driving steel piles during pier rehabilitation or replacement activities would have maximum airborne sound levels of approximately 105 dBA at a distance of 50 feet (NPS 2000a; Caltrans 1998). If an impact hammer such as a drop hammer were used, the resulting noise would be very-short-duration impact sounds (a "bang" or "clang" noise) concentrated during a 10- to 30-minute period while an individual pile is being driven. The anticipated airborne sound level from drop hammer operation would be approximately 80 dBA (NPS 2000a).

Pile-driving activities would occur intermittently throughout the two-season construction period with the replacement of approximately 70 piles and the addition of the new landing platforms. However, the sound emitted from these activities would only be intermittent and temporary, resulting in short-term minor adverse impacts to the natural soundscape on Santa Rosa Island. Once pier construction activities are

completed, the natural soundscape would return to existing conditions. Therefore, this impact topic was dismissed from further analysis.

Traffic and Transportation

Only NPS and concessionaire vehicles are located on Santa Rosa Island. Because the actions proposed in rehabilitating or replacing the pier would not impede or limit the use of these vehicles, this impact topic was dismissed from further analysis in this EA.

Land Use

Actions associated with either rehabilitating or replacing the pier located within Bechers Bay would not impact occupancy, property values, ownership, or any type of land use on Santa Rosa Island or any of the lands within Channel Islands National Park; therefore, this impact topic was dismissed from further analysis in this EA.

Unique Ecosystems, Biosphere Reserves, and World Heritage Sites

Biosphere reserves are internationally recognized terrestrial and coastal or marine areas where management seeks to achieve sustainable use of natural resources while ensuring conservation of the biological diversity of the areas. Potential areas are nominated by national governments for inclusion in the world network of biosphere reserves. Each nation's sites remain under the sovereign jurisdiction of the nominating country. On January 17, 1977, Channel Islands National Park was voted into the International Biosphere Reserve system for its significant resources. None of the proposed pier rehabilitation or replacement alternatives would affect resources that contribute to the significance of this park and its listing as a biosphere reserve. Therefore, this impact topic was dismissed from further analysis in this EA.

There are no known World Heritage sites or unique ecosystems listed within or adjacent to the current pier located within Bechers Bay.

Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.” This order directs agencies to address environmental and human health conditions in minority and low-income communities so as to avoid the disproportionate placement of any adverse effects from federal policies and actions on these populations. There are no minority or low-income residents or visitor populations that would be particularly or disproportionately affected by activities associated with the reconstruction or rehabilitation of the pier on Santa Rosa Island; therefore, this impact topic was dismissed from further analysis in this EA.

Socioeconomic Resources

The National Environmental Policy Act requires an analysis of impacts to the human environment, which includes economic, social, and demographic elements in the affected area. Pier rehabilitation and replacement activities would result in short-term beneficial economic impacts related to construction activities, but these would be quite negligible and undetectable in the local economy because of the limited size and duration of the project. Additionally, the pier would be intermittently closed to the public and would prevent park boat concessions from accessing the pier; however, as described in the visitor use and experience impact analysis (see the “Environmental Consequences” chapter), these actions would have negligible impacts on concession revenue since the concessionaire would still be able to take visitors ashore via skiff or visit alternate sites within the park. Additionally, following construction, the improved pier could result in beneficial economic impacts for concessionaires. Therefore, this impact topic was dismissed as an impact topic in this EA.

CHAPTER 2 – ALTERNATIVES

Federal agencies are required by the NEPA to explore a range of reasonable alternatives. The alternatives under consideration must include the "no action" alternative as prescribed by 40 CFR Part 1502.14. Project 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 and environmental issues analyzed in this document are the result of preliminary design and scoping activities conducted with the park and public. Through these activities, the NPS explored and objectively evaluated the range of alternatives. Four alternatives were carried forward for further analysis:

Alternative A – No Action Alternative

Alternative B – New Pier on Existing Alignment (NPS Preferred)

Alternative C – Rehabilitation of Existing Pier

Alternative D – New Pier on Adjacent Alignment

Each alternative is described in detail below followed by two tables at the end of the chapter that provide a brief summary of each alternative (Table 1) and the potential impacts (Table 2).

ALTERNATIVE A – NO ACTION ALTERNATIVE

Under the no action alternative, the current configuration of the pier would remain the same. The pier would remain at its current length and width of approximately 574 feet and 20 feet, respectively. The pier head would remain as a widened section approximately 60 feet long and 40 feet wide with a 24-foot by 20-foot offset extension. The original A-frame hoist and related cables that were used for many years to load and unload cattle would remain in place. The pier would continue to stand 16 feet above the mean lower low water mark (MLLW). Access from concessionaire boats to the pier for visitors would continue to be via ladders positioned along the south side of the pier. The NPS would continue to off-load supplies and equipment onto the pier on the north side. Under the no action alternative, regular repair and maintenance activities, such as replacing pilings, patching decking, and replacing handrails would continue to keep the pier safe and serviceable.

ALTERNATIVE B – NEW PIER ON EXISTING ALIGNMENT (NPS PREFERRED)

Under Alternative B, the existing pier would be demolished and replaced. The new pier would generally remain within the original footprint of the existing pier at the existing 574-foot length. All existing piles (approximately 70) would be replaced with new protective coated steel piles of larger diameter. Geotechnical evaluation has concluded predrilling would be required for installation of piles. Predrilling would be specified to be performed with an auger, with a requirement to minimize removal of materials from the predrilled hole. Piles would be driven to required depth through the column for predrilled fractured rock, and then post grouted to provide required strength. Post grouting would be performed with Portland cement grout formulated with anti-washout agents, and grouting would be limited to zones 5 feet and below the seabed floor to minimize potential for deposition or unintended flow of cement grout beyond the extent of the drilled hole.

MLLW: There are two low tides in each tidal cycle per day. The mean low water level is generated by the gravitational interaction with the sun (which is small), and the mean lower low level is generated by the gravitational interaction with the moon (which is greater).

The height of the pier would be increased from 16 feet to approximately 23 feet above the MLLW, which would be out of the expected storm surge. The pier height would have a uniform slope transition from 23 feet to 28 feet where it would connect to the shore at an elevation matching the original pier elevation.

This would be in compliance with accessibility requirements. The new pier would be designed to withstand industrial loads, creating a flat deck and eliminating the need for wheel load runners. It is estimated that up to two construction seasons, each extending throughout the summer and fall months, would be required to construct the new pier.

The new pier would have four platforms to provide access from boats to the pier. Two platforms would be located on each side of the pier, with the lower of the two platforms located closer to the shore, and each pair of platforms connected by stairs. Access for limited mobility individuals would be provided by a pier personnel crane that is operated by a certified mobile crane operator and that would lift the visitor from the concessionaire boat in a lifting basket to the pier.

The end of the pier, where loading and unloading occurs, would be widened from 40 to 50 feet, but the remainder of the pier would be 20 feet wide. The original A-frame hoist and support cables would be removed from the pier head and relocated to the shore for visitor interpretation. A 100-foot fender pile would be provided along the north side of the pier where the NPS unloads supplies and equipment and a 50-foot fender area would be provided on the south side of the pier for concessionaire boat access. A 20-foot fender pile would be provided along the end of the pier.

Stormwater runoff running down the dirt roadway towards the pier deck would be captured and discharged in accordance with best management practices for handling of stormwater runoff. Disturbance of the existing roadway will be largely confined to the 15 feet immediately adjacent to the pier connection to the land, and impacts minimized beyond this local area. A new trench drain would be installed on the land side of the pier structure. Gravel or other energy dissipating material would be placed on each side of the road. These gravel-lined swales would deliver water downhill towards the trench drain to help control erosion.

The staging area for construction would be located on the bluff above the pier in a previously disturbed area that has served as the staging area for past pier maintenance and refurbishing projects. To facilitate the transport of materials and equipment needed for the construction of the new pier, the existing road that provides access from the pier to the park's road system would be improved through limited grading and the addition of some fill to level the approach to the pier.

During pier construction, construction crews would remain on site during the work week to minimize travel costs and maximize their available time on the island. Crews would stay in one or more locations, including within the bunkhouse at the ranch (if space is available), on crew boats moored offshore from the pier, or in temporary contractor housing facilities located in previously disturbed areas on the island. No new facilities would be constructed or new areas disturbed.

This alternative would allow for a 20- to 25-year life span before the first major maintenance activities would be required. The estimated construction cost for Alternative B would be approximately $6,960,000 in fiscal year 2008 dollars.

ALTERNATIVE C – REHABILITATION OF EXISTING PIER

This alternative would retain the existing pier structure instead of constructing a new pier. All existing piles would be replaced with new protective coated steel piles of greater diameter. Existing pile caps would be reused. Geotechnical evaluation has concluded predrilling would be required for installation of piles. Predrilling would be specified to be performed with an auger, with a requirement to minimize removal of materials from the predrilled hole. Piles would be driven to required depth through the column for predrilled fractured rock, and then post grouted to provide required strength. Post grouting would be performed with Portland cement grout formulated with anti-washout agents, and grouting would be limited to zones 5 feet and below the seabed floor to minimize potential for deposition or unintended flow of cement grout beyond the extent of the drilled hole.

The pier would have a length of 574 feet, as currently exists, and would retain the existing deck elevation of 16 feet above MLLW. The original A-frame hoist and support cables would remain for visitor interpretation.

New piles would be driven in order to construct four access platforms: two new platforms and stairs on each side of the pier. Access from the boat to the pier would be provided by these new platforms and stairs. Access for limited mobility individuals would be provided by a pier personnel crane that is operated by a certified mobile crane operator and that would lift the visitor from the concessionaire boat in a lifting basket to the pier. The existing timber deck would be removed during construction and replaced after installation of the new piles. New fender piles would replace the existing piles, and additional new fender piles would be driven on the east side. It is estimated that up to two construction seasons, each extending throughout the summer and fall months, would be required to construct the new pier.

Stormwater runoff running down the dirt roadway towards the pier deck would be captured and discharged in accordance with best management practices for handling of stormwater runoff. Disturbance of the existing roadway will be largely confined to the 15 feet immediately adjacent to the pier connection to the land, and impacts minimized beyond this local area. A new trench drain would be installed on the land side of the pier structure. Gravel or other energy dissipating material would be placed on each side of the road. These gravel-lined swales would deliver water downhill towards the trench drain to help control erosion.

The staging area for construction would be located on the bluff above the pier in a previously disturbed area that has served as the staging area for past pier maintenance and refurbishing projects. To facilitate the transport of materials and equipment needed for the construction of the new pier, the existing road that provides access from the pier to the park's road system would be improved through limited grading and the addition of some fill to level the approach to the pier.

During pier construction, construction crews would remain on site during the work week to minimize travel costs and maximize their available time on the island. Crews would stay in one or more locations, including within the bunkhouse at the ranch (if space is available), on crew boats moored offshore from the pier, or in temporary contractor housing facilities located in previously disturbed areas on the island. No new facilities would be constructed or new areas disturbed.

It is expected that approximately 10% of the deck would need to be replaced on a yearly basis due to continued storm surge damage. The estimated construction cost for Alternative C would be $7,770,000 in fiscal year 2008 dollars.

ALTERNATIVE D – NEW PIER ON ADJACENT ALIGNMENT

Under this alternative, a new pier designed to the same specifications as described in Alternative B would be constructed southeast of, and parallel to, the existing pier to allow the existing pier to remain in service during construction. Geotechnical evaluation has concluded predrilling would be required for installation of piles. Predrilling would be specified to be performed with an auger, with a requirement to minimize removal of materials from the predrilled hole. Piles would be driven to required depth through the column for predrilled fractured rock, and then post grouted to provide required strength. Post grouting would be performed with Portland cement grout formulated with anti-washout agents, and grouting would be limited to zones 5 feet and below the seabed floor to minimize potential for deposition or unintended flow of cement grout beyond the extent of the drilled hole.

The rock abutment where the pier adjoins the island would also need to be cut to accommodate the new alignment of the pier. Once the new pier is completed, the A-frame hoist and support cables would be removed to the island for interpretation and the remainder of the old pier would be demolished. It is

estimated that up to two construction seasons, each extending throughout the summer and fall months, would be required to construct the new pier.

Stormwater runoff running down the dirt roadway towards the pier deck would be captured and discharged in accordance with best management practices for handling of stormwater runoff. Disturbance of the existing roadway will be largely confined to the 15 feet immediately adjacent to the pier connection to the land, and impacts minimized beyond this local area. A new trench drain would be installed on the land side of the pier structure. Gravel or other energy dissipating material would be placed on each side of the road. These gravel-lined swales would deliver water downhill towards the trench drain to help control erosion.

The staging area for construction would be located on the bluff above the pier in a previously disturbed area that has served as the staging area for past pier maintenance and refurbishing projects. To facilitate the transport of materials and equipment needed for the construction of the new pier, the existing road that provides access from the pier to the park's road system would be improved through limited grading and the addition of some fill to level the approach to the pier.

During pier construction, construction crews would remain on site during the work week to minimize travel costs and maximize their available time on the island. Crews would stay in one or more locations, including within the bunkhouse at the ranch (if space is available), on crew boats moored offshore from the pier, or in temporary contractor housing facilities located in previously disturbed areas on the island. No new facilities would be constructed or new areas disturbed.

As with Alternative B, the proposed pier design would allow for a 25-year life span before the first major maintenance activities would be required. The estimated construction cost for Alternative D would be $7,420,000 in fiscal year 2008 dollars.

MITIGATION MEASURES FOR THE ACTION ALTERNATIVES

The NPS places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. To help ensure the protection of natural and cultural resources and the quality of the visitor experience, the following protective measures would be implemented as part of the preferred alternative to replace the pier on the existing alignment. These measures are also considered in the analysis of the other action alternatives. Additionally, the NPS would implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and to achieve their intended results.

WATER QUALITY

Best management practices would be implemented by the construction contractor to minimize turbidity plumes and possible contaminants released into the water column during pier construction activities. Additional best management practices would be implemented to ensure safe storage of hazardous materials that may be used during construction (e.g., lubricating fluids, wood treatments, cleaning materials).

To prevent runoff, materials removed from the pier would be stockpiled on the island on an impermeable ground tarp and covered before being transported to the mainland for disposal. Measures would also be implemented to prevent construction site debris and materials from being blown into the bay.

Best management practices used to control stormwater runoff and minimize erosion would include minimizing disturbance along the existing roadway leading to the pier. In addition a trench drain would be installed on the land side of the pier structure to capture stormwater running down the dirt roadway towards the pier deck. Gravel or other energy dissipating material would be placed on each side of the road. These gravel-lined swales would deliver water downhill towards the pier, however the water would

travel at a lower velocity and the trench drain would capture the runoff to help control erosion and reduce the transport of sediments into the ocean.

Predrilling for installation of piles would be performed with an auger, with a requirement to minimize removal of materials from the predrilled hole. Portland cement products would be used to affix piles permanently in place. Placement methods would be selected to protect water quality and prevent cement spillage outside of the placement area. This would include the use of Portland cement grout formulated with anti-washout agents. Grouting would be limited to zones 5 feet and below the seabed floor to minimize potential for deposition or unintended flow of cement grout beyond the extents of the drilled hole.

Prior to construction, a hazardous spill prevention plan would be submitted by the construction contractor, stating what actions would be taken in case of a spill. This plan would incorporate preventative measures to be implemented such as the placement of refueling facilities, storage and handling of hazardous materials, and notification procedures for a spill. Adverse effects of fuel spills would be minimized by implementing the following:

- Locating construction staging areas away from surface water features, if feasible.
- Locating activities such as refueling well away from surface water features.
- Designating areas where refueling or construction vehicle and equipment maintenance would be performed and having containment devices such as temporary earth berms around these areas.
- Keeping absorbent pads and booms available to clean up spills.

AIR QUALITY

Dust (PM_{10} emissions) would be minimized by the construction contractor by implementing the following measures recommended by the Santa Barbara Air Pollution Control District:

- During construction, sprinkler systems would be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency should be required whenever the wind speed exceeds 15 miles per hour.
- Amount of disturbed area would be minimized.
- If dust is an issue, the contractor or builder would designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite.

The Santa Barbara Air Pollution Control District also recommends that NOx emissions from construction equipment be reduced during construction by adhering to the following measures:

- Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated “clean” diesel engines) should be utilized wherever feasible.
- The engine size of construction equipment should be the minimum practical size.
- The number of construction equipment operating simultaneously would be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.
- Construction equipment would be maintained in tune per the manufacturer’s specifications.
- Construction equipment operating on site should be equipped with two to four degree engine timing retard or pre-combustion chamber engines.
- Catalytic converters should be installed on gasoline-powered equipment, if feasible.

- Diesel catalytic converters should be installed, if available.

VEGETATION

To prevent the transmission of non-native seeds, plants, and animals, all vehicles would be steam cleaned by the construction contractor prior to being transported to Santa Rosa Island. Additionally, no soil would be brought to the island.

MARINE MAMMALS

If pinnipeds are found occupying the lower decks of the piers, the park would take humane measures such as erecting fences around the platform to prevent access. If all measures failed, the park at that juncture would consult with the USFWS and NMFS for the appropriate next step.

Measures to protect marine mammals during pile removal and installation would be determined by the NPS in consultation with NMFS. This would include evaluating the availability and feasibility of the construction equipment, methods, and manner of construction in order to reduce impacts to the lowest level practicable. Predrilling by the construction contractor would reduce the hammer energy necessary for driving piles and should result in lower noise levels affecting marine mammals. Other measures could include marine mammal monitors, acoustic monitoring, and the establishment of safety zones. Safety zones could be established and monitored to include all areas where the underwater sound pressure levels (SPLs) are anticipated to equal or exceed the disturbance threshold of 160 dB re 1 microPascal (µPa) RMS (impulse) for pinnipeds and 180 dB re 1 µPa RMS (impulse) for whales.

SEABIRDS

Any artificial lighting used during construction, rehabilitation, or operation of the pier would be kept to a minimum and placed by the construction contractor and the NPS only where needed. All light fixtures would be shielded and flat-bottom lights would be utilized so that illumination is directed downward and does not scatter.

ESSENTIAL FISH HABITAT

Mitigation measures to ensure protection of EFH would include the following:

- Pilings would be installed by the construction contractor by predrilling or augering through rock, then grouting the piles in place. The decking structure would be constructed in-place, floated, or lowered into place.
- In-water construction by the construction contractor would be limited to minor assembly work and to the dock footprint.
- Park personnel would survey the area surrounding the pier for the presence of eelgrass and surfgrass. Any eelgrass and surfgrass beds that are found would be marked with buoys to protect them from anchoring impacts associated with the project's demolition and construction activities. Anchoring in these marked beds would be prohibited, and approved anchoring sites would be delineated by marker buoys. A post-construction eelgrass survey would be conducted to assess the extent of disturbance, if any. Any eelgrass beds that may be unavoidably impacted would be mitigated per the terms of NMFS Southern California Eelgrass Mitigation Policy (NMFS 2005).

The NMFS would be consulted to determine additional conservation measures to protect EFH prior to pile removal and installation and other construction activities. Measures they recommend would be implemented by the construction contractor during construction to minimize potential impacts to EFH.

OTHER FISH

To determine if California grunion are using the beach for spawning, the NPS will conduct surveys prior to pile removal or installation activities to determine if grunion eggs are present in the beach area that could be impacted. If eggs are present, no sand-disturbing activities would occur for the two-week incubation period and until subsequent monitoring indicates that no additional spawning has occurred.

SANTA ROSA ISLAND FOX AND OTHER TERRESTRIAL WILDLIFE

If an individual(s) Santa Rosa Island fox is observed within the immediate vicinity of the pier, park staff would stop pier construction and operation activities. NPS biologists would then be notified immediately in order to determine the potential impacts that could result from the attendant human activity. Specific mitigation measures would then be developed to best avoid or minimize impacts from conflicts between humans and island fox. Mitigation could include, but is not limited to, restricting park operations or visitor use within the active den area or relocating individual foxes to more remote areas of the island.

Staging areas would be thoroughly inspected by the construction contractor to ensure no foxes have taken refuge within stockpiled materials or equipment. If a fox is found and does not leave on its own accord, NPS biologists would be informed and the fox would be removed in a manner determined by the biologist that would cause the least amount of harm and stress to the animal.

Best management practices would be used by the construction contractor during construction to minimize impacts on wildlife including no pets, containment of garbage, and no feeding of wildlife by construction crews that may be housed on the island.

All storage containers used by the construction contractor during construction would meet specifications outlined by the NPS. In particular, food would only be transported in plastic containers using tight fitting lids.

All landing craft would be required to have rodent control in place prior to travel to the island.

CULTURAL LANDSCAPES / HISTORIC STRUCTURES AND DISTRICTS

Although it is not a contributing feature, the Bechers Bay pier is within the Santa Rosa Island Ranching Historic District. It is the intention of the NPS to:

- Replace the pier with a structure that is visually sympathetic to its historic location and compatible in material, construction, and scale with the historic district.
- Retain and include the original A-frame cattle hoist as part of an interpretive display near the pier.

ARCHEOLOGICAL RESOURCES

In the event of unanticipated discovery of previously unknown archeological resources, all work in the immediate vicinity of the discovery would be halted by the construction contractor until resources could be identified and consultation could be completed under the National Historic Preservation Act and its implementing regulations. In the event that any unanticipated Native American burials or funerary objects are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act and its implementing regulations would also be followed.

VISITOR USE AND EXPERIENCE

If the pier must be closed during construction activities, the park would inform the public of this closure through a press release, the park website, and information available to visitors while in the park, among other methods.

HEALTH AND SAFETY

Staff and visitor training, appropriate signage, and visitor information would be provided by the park to ensure visitor and staff safety when entering and exiting skiffs should they be used to transport visitors to Santa Rosa Island during pier reconstruction or rehabilitation.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER STUDY

During the course of internal scoping, several options were considered as either part of the preferred alternative or as a separate alternative, but were deemed to be unreasonable and were not carried forward for analysis in this EA. Justification for eliminating these options from further analysis was based on the following factors:

- lack of technical feasibility
- economic infeasibility
- inability to meet the project's purpose and need

Replace Pier to Resemble Historic Character

This alternative would entail replacing the pier with a structure resembling the original 1870s pier. This alternative was eliminated from further consideration because it does not fully meet the defined purpose and need of the project. The purpose for taking action is to replace or rehabilitate the pier in a manner that provides safe and dry access to the island for park visitors and staff, that is compatible with the character of the historic ranching district, that protects the area's natural resources, and that best serves park operations. A pier design that resembles the original 1870s pier would be unsuitable for the park's current operational needs and would not meet current NPS safety standards for park staff and visitors.

Remove Pier and Use Landing Craft

In this alternative, the pier would be removed entirely and the park's landing craft would be utilized to transfer cargo and carry park staff to and from the island. Visitors to the island would either fly in via aircraft or be transferred to the island via skiff from one of the concessionaire's boats. This alternative was dismissed from further consideration due to the inherent dangers to park staff and visitors associated with a "wet" landing. Disembarking a landing craft or small skiff into the shallow waters of Bechers Bay could lead to injuries or even drowning during rough seas. In addition, while the park does use its landing craft to transport cargo to and from the island, it is only efficient when transferring equipment that can drive off the back of the boat and onto the beach (i.e., vehicles, earth moving machinery). Transporting smaller items (i.e., food, totes of gasoline, garbage, personal supplies) is inefficient because everything has to be transferred in smaller bundles by hand, rather than using park vehicles and the crane to transport these items in larger bundles.

Remove Pier and Access to the Island by Air

Another alternative would involve transporting cargo and visitors to the island via aircraft. Although the island has a dirt airstrip, the expense of transferring fuels, garbage dumpsters, supplies, and personal gear from the mainland would be prohibitive. The estimated deployment of cargo aircraft would cost well over $5,000 per week in addition to actual costs for flight time. In addition to cargo flights, passenger-only flights would have to be chartered. The current National Business Center Aviation Management (NBC-AM) aircraft can carry up to 40,000 pounds of cargo and 46 passengers per trip. The direct cost to the park for this aircraft service is $450 per trip. Costs for an 8-passenger round trip chartered flight from the mainland to Santa Rosa Island range from $700 to $1,200.

THE ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is defined by the Council on Environmental Quality (CEQ) as the alternative that best meets the following criteria or objectives, as set out in Section 101 of NEPA.

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Ensure for all generations safe, healthful, productive, and aesthetically 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 maintaining, wherever possible, an environment that supports diversity and variety of individual choice;
5. Achieve a balance between population and resource use that would permit high standards of living and a wide sharing of life's amenities; and
6. Enhance the quality of renewable resources and approaching the maximum attainable recycling of depletable resources (NEPA, Section 101).

Simply put, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources (CEQ, NEPA's 40 Most Asked Questions, 6a). There is no requirement that the environmentally preferable alternative and the preferred alternative be the same. However, after completing the environmental analysis, the NPS identified Alternative B – New Pier on Existing Alignment – as the environmentally preferred alternative in this EA because it best meets the definition established by CEQ, as defined above.

Alternative B would most closely satisfy the policy goals detailed above. By replacing the pier at Bechers Bay as proposed under this alternative, criterion 1 would be fulfilled by extending the service life of the pier and facilitating overall park operations. Extending the service life of the pier and easing park operations would provide the NPS the means to properly manage the island's resources for future generations. Criterion 2 would be fulfilled by replacing the old, degraded pier with a newly designed and engineered pier, which would provide both park staff and visitors many years of safe access to the island. Alternative B would fulfill criterion 3 by protecting visitor and staff health and safety by providing platforms for easy access to and from boats to the pier via a protected staircase; raising the height of the pier out of the highest predicted storm surge; and creating a deck that provides fewer obstacles to people with limited mobility and those NPS staff who load and unload cargo via the truck-mounted crane. In addition, by constructing a new pier within the footprint of the current pier, no new areas above or below water would be disturbed or degraded by either the construction or operation of the pier. While there are no significant cultural or historic resources associated with the pier, criterion 4 would be partially fulfilled by removing the original A-frame hoist from the pier, and relocating this structure onshore, with interpretive signage explaining its historical significance. Finally, criterion 5 would be fulfilled by providing added safety and ease of access to Santa Rosa Island and, thus, providing a greater balance between population and resource use than the no action alternative and Alternative C. This alternative would allow for a 20- to 25-year life span before the first major maintenance activities would be required.

Alternative C would allow for the rehabilitation of the existing pier. Alternative C would fulfill criterion 1 by keeping the pier serviceable, allowing the NPS to continue to manage and maintain the natural resources of Santa Rosa Island. Alternative C does not meet criteria 2 and 3 as well as Alternative B. Under Alternative C, while the pier would improve safety by providing platforms to provide access from boats to the pier, the pier would remain at its current height, which is lower than the highest predicted

storm surge. In addition, the wheel load runners and the original A-frame hoist and support cables would remain, creating obstacles for people of limited mobility and park staff who utilize the crane to load and off-load materials. Alternative C fulfills criterion 4 better than Alternative B by keeping the original A-frame hoist and support cables on the pier as originally intended for visitor interpretation. Finally, Alternative C would fulfill criterion 5; however, not to the same extent as Alternatives B or D. By rehabilitating the existing pier and retrofitting platforms to provide access from boats to the pier, the rehabilitated pier would provide added safety and ease of access to Santa Rosa Island and, thus, would provide a greater balance between population and resource use than the no action alternative.

Alternative D would call for the construction of a new pier, with the specifications as proposed under Alternative B, along an alignment adjacent to the current pier. Alternative D would fulfill criteria 1, 2, and 3 to the same degree as Alternative B. However, Alternative D does not meet criterion 4 as well as Alternative B. Under Alternative D, the new pier would be sited outside the footprint of the original pier, which would disturb previously undisturbed areas during both the construction and operation of the pier. As with Alternative B, Alternative D would also remove the original A-frame hoist, and relocate this structure on shore, with interpretive signage explaining its historical significance. Finally, Alternative D would fulfill criterion 5 as well as Alternative B. This alternative would allow for a 20- to 25-year life span before the first major maintenance activities would be required.

The no action alternative represents the existing condition of the pier on Santa Rosa Island. The no action alternative would not meet criterion 1 as fully as any of the proposed actions alternatives. While the park is currently meeting its trustee responsibilities, because of the pier's current degrading condition and the possibility for a catastrophic failure exists, the level of management of Santa Rosa Island's resources could not be guaranteed over the long term. Criteria 2 and 3 would also not be fully met under the no action alternative. Under this alternative, park staff and visitors would access the pier from the boat via a ladder, the height of the pier would remain below the highest expected storm surge, the wheel load runners and the original A-frame hoist and support cables would continue to create obstacles for people of limited mobility and park staff who utilize the crane to load and off-load materials, and the risk of a catastrophic failure of the pier exists due to the pier's degrading structures. The no action alternative would fulfill criterion 4 better than Alternatives B and D by keeping the original A-frame hoist and support cables on the pier as originally intended for visitor interpretation. Finally, criterion 5 would not be fulfilled. While the existing pier would continue to provide access to Santa Rosa Island, without the added safety improvements proposed under the action alternatives there would be no increase in the balance between population and resource use than the no action alternative. In fact, due to the pier's degrading condition and the possibility of catastrophic failure, the balance between population and resource use could actually decrease over time.

TABLE 1: COMPARATIVE SUMMARY OF ALTERNATIVES

	Alternative A: No Action Alternative	Alternative B: New Pier on Existing Alignment (NPS Preferred)	Alternative C: Rehabilitation of Existing Pier	Alternative D: New Pier on Adjacent Alignment
Pier Replaced or Rehabilitated	Rehabilitation as needed to keep the pier safe	Replaced within the original footprint of the existing pier	Rehabilitation	Replaced at a location southeast and parallel to the existing pier
Pier Length	574 feet	574 feet	574 feet	574 feet
Pier Height (MLLW)	16 feet above the MLLW	23 feet above the MLLW	16 feet above the MLLW	23 feet above the MLLW
Fenders	Remain the same	100-foot fender pile on the north side of the pier for NPS loading/unloading; 50-foot fender area on the south side for concessionaire use; 20-foot fender pile on the front of the pier	New fender piles would replace the existing ones; additional fender piles on the east side of the pier	100-foot fender pile on the north side of the pier for NPS loading/unloading; 50-foot fender area on the south side for concessionaire use; 20-foot fender pile on the front of the pier
Personnel Crane for Mobility Impaired	Absent	Present	Present	Present
End of Pier	Remains as a widened section approximately 60 feet long and 40 feet wide with a 24-foot by 20-foot offset extension	Widened from 40 to 50 feet	Remains as a widened section approximately 60 feet long and 40 feet wide with a 24-foot by 20-foot offset extension	Widened from 40 to 50 feet
Visitor and NPS Access	Via ladders on the south side of the pier for visitors; NPS on the north side.	Four new platforms (two new platforms and connecting stairs on each side of the pier)	Four new platforms (two new platforms and connecting stairs on each side of the pier)	Four new platforms (two new platforms and connecting stairs on each side of the pier)

Notes:

MLLW = mean lower low water

NPS = National Park Service

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TABLE 2: SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Impact Topic	Alternative A: No Action Alternative	Alternative B: New Pier on Existing Alignment (NPS Preferred)	Alternative C: Rehabilitation of Existing Pier	Alternative D: New Pier on Adjacent Alignment
Marine Water Resources / Water Quality	Implementation of the no action alternative would result in short-term minor adverse impacts to water quality as a result of the transport of sediment and other pollutants from the pier's access road into Bechers Bay. The no action alternative would not contribute to an incremental increase in overall adverse cumulative impacts to marine water quality. No impairment of marine water resources would occur under the no action alternative.	Implementation of Alternative B would result in short-term negligible adverse impacts to water quality as a result of the transport of sediment and other pollutants from the pier's access road, and from removal of the existing piles and installation of new piles, into Bechers Bay. Alternative B would contribute only slightly to an incremental increase in overall cumulative adverse impacts to marine water quality. No impairment of marine water resources would occur under this alternative.	Implementation of Alternative C would result in short-term negligible adverse impacts to water quality as a result of the transport of sediment and other pollutants from the pier's access road, and from removal of the existing piles and installation of new piles, into Bechers Bay. Alternative C would contribute only slightly to an incremental increase in overall cumulative adverse impacts to marine water quality. No impairment of marine water resources would occur under this alternative.	Implementation of Alternative D would result in short-term negligible adverse impacts to water quality as a result of the transport of sediment and other pollutants from the pier's access road, and from removal of the existing piles and installation of new piles, into Bechers Bay. Alternative D would contribute only slightly to an incremental increase in overall cumulative adverse impacts to marine water quality. No impairment of marine water resources would occur under this alternative.

Impact Topic	Alternative A: No Action Alternative	Alternative B: New Pier on Existing Alignment (NPS Preferred)	Alternative C: Rehabilitation of Existing Pier	Alternative D: New Pier on Adjacent Alignment
Essential Fish Habitat	The no action alternative would result in some negligible impacts to EFH as a result of occasional pile removal and installation activities. There would be no cumulative impacts and no impairment of fish habitat under this alternative. These intermittent activities would not adversely affect designated EFH for groundfish or coastal pelagic species in the project area.	Construction activities could result in short-term, minor impacts to eelgrass and fish by disturbing substrate and increasing turbidity from removal and installation of pilings. The slight increase in pier dimensions could cause some additional shading of substrate, but the increased height of the pier would most likely offset this change by allowing additional light penetration. Short-term, temporary impacts could also occur to fish through noise generated from pile-driving activities. However, these impacts would be negligible to minor because appropriate mitigation would be implemented. There would be no cumulative impacts and no impairment of fish habitat under this alternative. As a result, pier replacement activities would not adversely affect designated EFH for groundfish or coastal pelagic species in the project area.	Construction activities could result in short-term, minor impacts to eelgrass and fish by disturbing substrate and increasing turbidity from removal and installation of pilings. Short-term, temporary impacts could also occur to fish through noise generated from pile-driving activities. However, these impacts would be negligible to minor because appropriate mitigation would be implemented. There would be no cumulative impacts and no impairment of fish habitat under this alternative. As a result, pier replacement activities would not adversely affect designated EFH for groundfish or coastal pelagic species in the project area.	Placement of a new pier adjacent to the existing pier would result in substrate disturbance under the existing pier as well as in areas previously undisturbed. In the short term, this disturbance could increase turbidity during removal and installation of pilings over a larger area. The slight increase in pier dimensions could also cause some additional shading of substrate, but the increased height of the pier would most likely offset this change by allowing additional light penetration. Short-term, temporary impacts could also occur to fish through noise generated from pile-driving activities. However, these impacts would be negligible to minor because appropriate mitigation would be implemented. There would be no cumulative impacts and no impairment of fish habitat under this alternative. As a result, pier replacement activities would not adversely affect designated EFH for groundfish or coastal pelagic species in the project area.

Impact Topic	Alternative A: No Action Alternative	Alternative B: New Pier on Existing Alignment (NPS Preferred)	Alternative C: Rehabilitation of Existing Pier	Alternative D: New Pier on Adjacent Alignment
Threatened, Endangered, and Species of Special Concern – Santa Rosa Island Fox	Implementation of the no action alternative would result in long-term negligible adverse impacts to the federally endangered Santa Rosa Island fox as a result of the ongoing operation and maintenance of the pier. Long-term negligible adverse cumulative impacts could also occur. No impairment of this special status species would occur under the no action alternative.	Implementation of the Alternative B would result in long-term minor adverse impacts to the federally endangered Santa Rosa Island fox as a result of the construction of a new pier and future ongoing operation of the pier. There could also be long-term minor adverse cumulative impacts. No impairment of this special status species would occur under Alternative B.	Implementation of Alternative C would result in long-term minor adverse impacts to the federally endangered Santa Rosa Island fox as a result of the rehabilitation of the existing pier and future ongoing operation of the pier. Long-term minor adverse cumulative impacts could also occur. No impairment of this special status species would occur under Alternative C.	Implementation of Alternative D would result in long-term minor adverse impacts to the federally endangered Santa Rosa Island fox as a result of the construction of a new pier and future ongoing operation of the pier. Long-term minor adverse cumulative impacts could also occur. No impairment of this special status species would occur under Alternative D.

Impact Topic	Alternative A: No Action Alternative	Alternative B: New Pier on Existing Alignment (NPS Preferred)	Alternative C: Rehabilitation of Existing Pier	Alternative D: New Pier on Adjacent Alignment
Cultural Landscapes / Historic Structures and Districts	No replacement pier would be constructed, although some components of the pier would occasionally be replaced as needed. The appearance, alignment, and orientation of the pier would not perceptibly change. There would be no measurable impacts to cultural landscapes or historic districts resulting in negligible impacts to these resources. The no action alternative would not contribute to the overall beneficial cumulative impacts. There would be no impairment of these resources.	The pier would be replaced on the same alignment. The alignment and orientation of the pier would not change, however the appearance of the pier would be modified and the feeling and association of the pier would change resulting in a minor adverse impact to cultural landscapes and historic districts. Implementation of Alternative B would contribute a minor adverse incremental impact that would reduce the overall beneficial impacts to cultural landscapes. There would be no impairment of these resources. Section 106 Summary: After applying the Advisory Council on Historic Preservation's criteria of effect, the NPS finds that implementation of Alternative B (the NPS preferred alternative) would not diminish the integrity of the cultural landscape or historic district such that its eligibility for listing in the National Register of Historic Places would be jeopardized. Therefore there would be a *no adverse effect* finding.	The pier would be rehabilitated using as much of the existing pier as possible. The alignment and orientation of the pier would not change and the appearance of the pier would be only slightly altered resulting in a minor adverse impact to cultural landscapes, historic structures, and districts. Alternative C would contribute a minor adverse incremental impact that would reduce the overall beneficial impacts to cultural landscapes. There would be no impairment of these resources. Section 106 Summary: After applying the Advisory Council on Historic Preservation's criteria of effect, the NPS finds that implementation of Alternative C would not diminish the integrity of the cultural landscape or historic district such that its eligibility for listing in the National Register of Historic Places would be jeopardized. Therefore there would be a *no adverse effect* finding.	A new pier would be constructed on a different alignment. The alignment, orientation, and appearance of the pier would change. In addition, the feeling and association of the pier would change. These alterations would diminish the overall integrity of the cultural landscape resulting in a moderate adverse impact on cultural landscapes and historic districts. Implementation of Alternative D would have long-term moderate adverse impacts on cultural landscapes and historic districts and would contribute a minor adverse incremental impact that would reduce the overall beneficial impacts to cultural landscapes and historic districts. There would be no impairment of these resources. Section 106 Summary: After applying the Advisory Council on Historic Preservation's criteria of effect, the NPS finds that implementation of Alternative D would diminish the integrity of the cultural landscape or historic district such that its eligibility for listing in the National Register of Historic Places may be jeopardized resulting in an *adverse effect* finding.

Impact Topic	Alternative A: No Action Alternative	Alternative B: New Pier on Existing Alignment (NPS Preferred)	Alternative C: Rehabilitation of Existing Pier	Alternative D: New Pier on Adjacent Alignment
Visitor Use and Experience	Maintenance of the existing pier would result in long-term minor and moderate adverse impacts to the average visitor and mobility-impaired visitors, respectively, because the ladder access from boat to pier would remain challenging. Should the pier fail at some point, impacts to all visitors would be long-term moderate and adverse because access would be limited to air or from a boat offshore. Access to the island for visitors and concessionaires would be restricted occasionally for pier repairs resulting in short-term minor adverse impacts. Cumulative impacts would be long-term and moderate adverse due to the past and most likely future pier repairs that might be required.	Construction of a new pier would prevent access to the island via the pier for two construction seasons in summer and fall months, resulting in short-term minor adverse impacts to visitors during construction activities. Once pier construction was complete, the increased pier height, new landing platforms, stair access, pier personnel crane, and new fenders would increase visitor satisfaction and result in long-term moderate beneficial impacts to both visitors and concessionaires at Santa Rosa Island. The reduced need for pier repair and maintenance activities would minimize future interruptions to concession services, resulting in additional moderate beneficial impacts to visitors and concessionaires. Consistent visitor access would result in long-term moderate beneficial cumulative impacts.	Rehabilitation of the existing pier would prevent access to the pier during construction resulting in short-term minor adverse impacts to visitors. Although the rehabilitated pier would remain the same height as the existing pier and cause some limited visitor exposure to ocean waves, the new landing platforms and stair access would increase visitor satisfaction and result in long-term moderate beneficial impacts to both visitors and concessionaires. Ongoing pier maintenance activities would continue to occur occasionally, resulting in potential long-term minor adverse impacts to visitor use and concessionaires. Improved consistent access could result in long-term minor beneficial cumulative impacts.	Construction of a new pier adjacent to the existing pier would allow for ongoing visitor access while the new pier is constructed. Once completed and the old pier is demolished, the increased pier height, new landing platforms, stair access, pier personnel crane, and new fenders would improve visitor satisfaction and result in long-term moderate beneficial impacts to both visitors and concessionaires at Santa Rosa Island. The reduced need for pier repair and maintenance activities would minimize future interruptions to concession services, resulting in additional moderate beneficial impacts to visitors and concessionaires. Consistent visitor access would result in long-term moderate beneficial cumulative impacts.

Impact Topic	Alternative A: No Action Alternative	Alternative B: New Pier on Existing Alignment (NPS Preferred)	Alternative C: Rehabilitation of Existing Pier	Alternative D: New Pier on Adjacent Alignment
Health and Safety	Implementation of the no action alternative would result in long-term minor adverse impacts to health and safety as a result of the continued safety deficiencies of the pier. Long-term minor adverse cumulative impacts could result from the short-term increase in pier use and long-term increase in visitor use that could result from the future rehabilitation and/or conversion of some of the ranch buildings.	Implementation of Alternative B would result in long-term minor beneficial impacts to health and safety from the correction of existing pier deficiencies which would improve park staff and visitor safety and decrease the potential for accidents. However, long-term moderate beneficial impacts would occur from transporting mobility limited people to and from the pier via crane. Short-term minor adverse impacts would occur during the construction of the pier as park visitors are required to access the island via skiffs and park staff would be required to use its landing craft for day-to-day operations. Long-term minor beneficial cumulative impacts could result from the conversion of some of the ranch buildings.	Implementation of Alternative C would result in long-term minor beneficial impacts to health and safety from the correction of existing pier deficiencies which would improve park staff and visitor safety and decrease the potential for accidents. However, long-term moderate beneficial impacts would occur from transporting mobility limited people to and from the pier via crane. Long-term minor adverse impacts would result because the height of the pier would remain below the highest predicted storm surge. Short-term minor adverse impacts would occur during the construction of the pier as park visitors are required to access the island via skiffs and park staff is required to use the landing craft for day-to-day operations. Long-term minor beneficial cumulative impacts could result to park staff and visitor safety.	Implementation of Alternative D would result in long-term minor beneficial impacts to health and safety from the correction of existing pier deficiencies which would improve park staff and visitor safety and decrease the potential for accidents. However, long-term moderate beneficial impacts would occur from transporting mobility limited people to and from the pier via crane. Long-term minor beneficial cumulative impacts could result to park staff and visitor safety.

Impact Topic	Alternative A: No Action Alternative	Alternative B: New Pier on Existing Alignment (NPS Preferred)	Alternative C: Rehabilitation of Existing Pier	Alternative D: New Pier on Adjacent Alignment
Park Operations and Management	Implementation of the no action alternative would result in long-term negligible to moderate adverse impacts to park operations and management as a result of the current configuration of the pier head, increased future pier maintenance, and the potential need for alternate means of transportation to and from the island if the pier becomes unserviceable. Long-term minor to moderate adverse cumulative impacts to park management and operations would occur due to ongoing maintenance repair activities on the pier	Implementation of Alternative B would result in long-term minor to moderate beneficial impacts by reducing pier maintenance requirements, greatly reducing the potential for a catastrophic pier failure, and improving access for staff. Long-term minor beneficial impacts would also occur by expanding the pier head and removing the current obstructions, resulting in a more efficient transfer of cargo. Short-term minor adverse impacts would occur during construction when the pier is closed for use and park staff and cargo is transported via the park's landing craft. Cumulative impacts would be long-term minor to moderate beneficial because pier maintenance would be minimal.	Implementation of Alternative C would result in long-term minor beneficial impacts to park operations and management by reducing the overall maintenance requirements of the pier and the potential for a catastrophic failure, as well as improving access for park staff. Short-term minor adverse impacts would occur during the period of construction when the pier is closed for use and park staff and cargo would be transported via the park's landing craft. Cumulative impacts would be long-term and minor beneficial because of the reduced need for ongoing pier maintenance.	Implementation of Alternative D would result in long-term minor to moderate beneficial impacts to park operations and management by reducing maintenance requirements, greatly reducing the potential for a catastrophic pier failure, and improving access for staff. Long-term minor beneficial impacts would also occur by expanding the pier head and removing the current obstructions, which would result in a more efficient transfer of cargo. Short-term minor beneficial impacts would occur as a result of keeping the current pier open for as long as possible during the period of construction of the new pier. Cumulative impacts would be long-term and minor to moderate beneficial because pier maintenance would be minimal.

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CHAPTER 3 – AFFECTED ENVIRONMENT

This chapter of the environmental assessment (EA) describes existing environmental conditions for the following resources that may be affected by the proposed alternatives: marine water resources / water quality, EFH, Santa Rosa Island fox, cultural landscapes / historic structures and districts, visitor use and experience, health and safety, and park operations and management. Potential impacts to these same resources are discussed in the "Environmental Consequences" chapter following the same order.

MARINE WATER RESOURCES / WATER QUALITY

The waters surrounding all five islands of the park, from the mean high tide line to 6 nautical miles offshore, constitute the Channel Islands National Marine Sanctuary (Sanctuary), which is administered by the National Oceanic and Atmospheric Administration (NOAA). Coastal cliffs, rocky intertidal habitat, sandy beaches, and small embayments make up the islands' coastlines. The nearshore marine environment consists of offshore pinnacles and islets, rocky reefs, kelp forest, eelgrass beds, and soft (mostly sandy) bottom (Engle 2006).

The NPS has little data on water quality conditions for the coastal waters in and surrounding the park. Generally, it is believed that water quality conditions are good, given the distance of the islands from the mainland, the volume of the ocean, and the shelves and basins near the mainland where many pollutants from the Los Angeles basin and other coastal regions settle (NPS 1980). The water quality within Bechers Bay on Santa Rosa Island is primarily affected by temporary increases in turbidity. Sources of turbidity in Bechers Bay are bottom sediments resuspended from tidal and wave action, surface sediments transported through runoff during storm events from developed areas and roads located near the pier, and sediments from several dry creek beds that drain directly into the bay. Turbidity refers to water clarity as it relates to the amount of total suspended solids in the water. Increased turbidity can limit the amount of light penetration, which can affect aquatic plant growth and smother habitats for benthic organisms.

ESSENTIAL FISH HABITAT

Essential Fish Habitat is broadly defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" and includes habitat for an assemblage of fish species. Fish are grouped together into a single species complex because of similarities in their life histories or habitat requirements. Certain habitats for Pacific salmon, groundfish species, and pelagic species have been designated EFH by the NMFS under the provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Bechers Bay contains designated EFH for Pacific Coast groundfish and for coastal pelagic (open sea or ocean – not near coast or sea floor) species. Essential Fish Habitat in the project area includes the intertidal and subtidal waters under and adjacent to the existing pier structure. The substrate that underlies these waters consists of sand. Currently there are no known eelgrass or surfgrass beds in the vicinity. Visibility is typically less than 8 – 10 feet because of surf and turbidity from sand (Personal communication, M. Senning, 2006).

PACIFIC COAST GROUNDFISH

Groundfish are bottom-dwelling fish that live on or near the sea floor. Essential Fish Habitat for Pacific coast groundfish is defined as the aquatic habitat necessary to allow for groundfish production to support long-term sustainable fisheries for groundfish and for groundfish contributions to a healthy ecosystem (Pacific Fishery Management Council 2006). Bechers Bay provides two habitat types of Pacific coast groundfish EFH. The first, the estuarine type or composite, is defined as those waters, substrates, and associated biological communities within bays and estuaries of the U.S. Exclusive Economic Zone (EEZ), from mean higher high water level (MHHW – the high tide line) or extent of upriver saltwater intrusion to the respective outer boundaries for each bay or estuary as defined in 33 CFR Part 80.1 (U.S. Coast Guard lines of demarcation). The second, the non-rocky shelf composite component of EFH, includes all waters

from the MHHW line, and the upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon, and California seaward to the boundary of the EEZ.

Species included in the Pacific Coast groundfish estuarine and non-rocky shelf composite habitats are listed in Table 3. While detailed surveys for fish species presence have not been conducted in the area, the fish included in Table 3 are known to occupy estuarine and non-rocky shelf habitat during at least one stage of their life history. Therefore, juvenile and/or adult life stages of these fish species may be present in Bechers Bay. Species that were observed during dive surveys conducted by the park in June 2006, are also listed in Table 3 and include cabezon, black-and-yellow rockfish, blue rockfish, copper rockfish, kelp rockfish, olive rockfish, and grass rockfish.

COASTAL PELAGIC SPECIES

Pelagic fish are those found in the water column near the surface and not associated with substrate because they generally occur above the thermocline in the upper mixed layer. Amendment 8 to the Pacific Fishery Management Council's Coastal Pelagic Species Fishery Management Plan (Pacific Fishery Management Council 2006) describes EFH for five pelagic species: northern anchovy, Pacific sardine, Pacific (chub) mackerel, jack mackerel, and market squid. Essential Fish Habitat for coastal pelagic species is defined as the east-west geographic boundary of all marine and estuarine waters from the shoreline along the coasts of California, Oregon, and Washington offshore to the limits of the EEZ and above the thermocline where sea surface temperatures range between 10^{o}–26^{o}C. The southern boundary is the U.S. – Mexico maritime boundary. The northern boundary is more dynamic, and is defined as the position of the 10°C isotherm, which varies seasonally and annually. These species are highly mobile, and their presence in Bechers Bay has not been investigated.

TABLE 3: PACIFIC GROUNDFISH WITH DESIGNATED EFH POTENTIALLY IN THE PROJECT AREA

Species	EFH Composite Type		Species	EFH Composite Type	
	Groundfish Estuarine EFH	Non-Rocky EFH		Groundfish Estuarine EFH	Non-Rocky EFH
Leopard Shark	X	X	Kelp Rockfish[1]	X	
Soupfin Shark	X	X	Longspine Thornyhead	X	X
Spiny Dogfish	X	X	Mexican Rockfish	X	X
Big Skate		X	Olive Rockfish[1]	X	X
California Skate	X	X	Pacific Ocean Perch	X	X
Longnose Skate		X	Pink Rockfish	X	X
Ratfish	X	X	Quillback Rockfish	X	
Finescale Codling			Redbanded Rockfish	X	X
Pacific Rattail		X	Redstripe Rockfish	X	
Lingcod	X	X	Rosethorn Rockfish	X	X
Cabezon[1]	X		Rosy Rockfish	X	
Kelp Greenling	X		Rougheye Rockfish	X	X
Pacific Cod	X	X	Sharpchin Rockfish	X	X
Pacific Whiting (Hake)	X		Shortbelly Rockfish	X	X
Sablefish	X	X	Shortraker Rockfish	X	X
Aurora Rockfish		X	Shortspine Thornyhead	X	X

Species	EFH Composite Type		Species	EFH Composite Type	
	Groundfish Estuarine EFH	Non-Rocky EFH		Groundfish Estuarine EFH	Non-Rocky EFH
Bank Rockfish		X	Silverygray Rockfish	X	X
Black Rockfish	X	X	Speckled Rockfish	X	
Black-and-yellow Rockfish[1]			Splitnose Rockfish	X	X
Blackgill Rockfish	X		Squarespot Rockfish	X	
Blue Rockfish[1]	X	X	Starry Rockfish	X	
Bocaccio	X	X	Stripetail Rockfish	X	X
Bronzespotted Rockfish			Tiger Rockfish	X	
Brown Rockfish	X		Treefish	X	
Calico Rockfish	X	X	Vermillion Rockfish	X	X
California Scorpionfish	X	X	Widow Rockfish	X	X
Canary Rockfish			Yelloweye Rockfish	X	
Chilipepper		X	Yellowmouth Rockfish	X	
China Rockfish			Yellowtail Rockfish	X	X
Copper Rockfish[1]	X		Arrowtooth Flounder	X	X
Cowcod		X	Butter Sole	X	X
Darkblotched Rockfish		X	Curlfin Sole	X	X
Dusky Rockfish			Dover Sole	X	X
Flag Rockfish			English Sole	X	X
Gopher Rockfish		X	Flathead Sole	X	X
Grass Rockfish[1]			Pacific Sanddab	X	X
Greenblotched Rockfish		X	Petrale Sole	X	X
Greenspotted Rockfish		X	Rex Sole	X	X
Greenstriped Rockfish		X	Rock Sole	X	X
Harlequin Rockfish			Sand Sole	X	X
Honeycomb Rockfish			Starry Flounder	X	X

Source: http://www.pcouncil.org/groundfish

Note: EFH = Essential Fish Habitat

[1]Reported in dive surveys conducted by NPS personnel 6/30/2006 (Personal communication, D. Richards, 2006)

THREATENED, ENDANGERED, AND SPECIES OF SPECIAL CONCERN – SANTA ROSA ISLAND FOX

The Santa Rosa Island fox (*Urocyon littoralis santarosae*) is a small relative of the mainland gray fox (*U. cinereoargenteus*) and is endemic to the Santa Rosa Island. In 2004, the USFWS listed as endangered four island fox subspecies, including the three subspecies in Channel Islands National Park – San Miguel Island fox (*U. l. littoralis*), Santa Rosa Island fox, and the Santa Cruz Island fox (*U. l. santacruzae*) – as well as the subspecies on Santa Catalina Island (*U. l. catalinae*) (USFWS 2004).

Island foxes average in size from 12 to 13 inches in height, 23 to 28 inches in length, and 3 to 4 pounds in weight. This size is up to 18 percent smaller than the nearby mainland gray fox. Similar in appearance to the gray fox, the island fox is identified by a gray coloring on the back, reddish brown coloring on the sides, and white undersides (USFWS 2007).

The average litter size is two, and pupping usually takes place in late March to early May. Mating takes place in February and March, and the males play a moderate to large role in the raising of the young. Unlike gray foxes, island foxes are frequently active during the daylight hours and their diet consists of up to 70 percent fruit and plant material. Another 20 percent of their diet is made up of insects and the remainder is made up of small rodents such as deer mice (NPS 2005).

Potential habitat for the Santa Rosa Island fox may occur within the general vicinity of Bechers Bay. The foxes occur within all habitats on the islands, including valley and foothill grasslands, coastal sage scrub, sand dunes, island chaparral, coastal oak and pine forests, and marshes (USFWS 2004). Dens include ground holes, hollow trees, rock piles, shrubs, caves, and man-made structures. Although they do not usually construct their own dens, a hole will be dug in the ground if an appropriate den cannot be found (NPS 2005).

In recent years, predation by golden eagles has been the primary mortality factor for island foxes on the northern Channel Islands, and was responsible for the massive decline of the three northern subspecies from 1994 to 2000 (NPS 2006d). During this period, island fox populations on San Miguel, Santa Rosa and Santa Cruz Islands declined by as much as 95 percent due to predation by golden eagles. Faced with the likely extinction of these island fox subspecies, the NPS began implementing recovery actions for island foxes on the northern Channel Islands in 1999. Such actions included removal of golden eagles and captive breeding of island foxes. As a result of these efforts, by April 2006 there were 32 foxes in the wild on Santa Rosa Island, up from 14 in 2000 (NPS 2006d).

CULTURAL LANDSCAPES / HISTORIC STRUCTURES AND DISTRICTS

A cultural landscape inventory was prepared by the NPS in 2002 that describes the cultural landscape of the Santa Rosa Island Ranching Historic District, including its contributing features (NPS 2002). As an intact cultural landscape, the Santa Rosa Island possesses integrity in its dozens of structures, roads, fences, and vegetation. The ranch complex at Bechers Bay also includes the main ranch house and two large barns dating to the 1870s, a bunkhouse, schoolhouse/residence, and a variety of other outbuildings set within a historic landscape of corrals, pastures, eucalyptus and cypress windbreaks, and roads along the coastal bluff on the east side of the island. The district is considered a rural vernacular landscape that includes the entire 53,000-acre island (NPS 2002).

The National Historic Preservation Act (NHPA) requires that the Federal government identify, evaluate and protect its historically significant resources. The park's current general management plan addresses the interpretation of the Santa Rosa Island ranching operations, including preservation of the ranch complex at Bechers Bay. The Vail & Vickers ranch has been called one of California's largest operations of its kind and the most commercially successful of the ranches in the Channel Islands. It holds a place in history as perhaps the last Mexican land grant rancho in California, one whose boundaries and uses had not changed in over 150 years. The ranch complex – termed the “Santa Rosa Island Ranching Historic District” – directly abuts Bechers Bay. The NPS determined the district to be eligible for the National Register of Historic Places through a determination of eligibility submitted to the California Office of Historic Preservation. The district is eligible on a local level of significance. The period of significance extends from 1873 to 1955, dates corresponding to the beginning of ranching activity on Santa Rosa Island and extending to approximately 50 years before present (the date after which properties are not considered historic). The district is considered to be significant for its association with events in California’s agricultural history (criteria A), and its vernacular architecture and landscape characteristics (criterion C). The California SHPO concurred with this finding in August 2004.

The pier at Bechers Bay is one of the most complex structures on the island (Livingston 2003). The More family had it built around 1872 – 1873. It was most likely rebuilt in 1913. The pier underwent major repairs in 1945 by a contractor for the Army Corps of Engineers. Ranch crews repaired the decking in 1983 with lumber salvaged from the Air Force pier at Johnsons Lee (Livingston 2003). After acquiring Santa Rosa Island, the NPS rehabilitated the pier in 1987, almost entirely reconstructing it using steel pilings and pressure-treated decking, to make it safe for park operations and to provide access to the island for visitors, researchers, and NPS employees. National Park Service reconstruction in 1987 was temporary in nature and not intended to last for more than 20 years. Cattle shipments ceased in 1998, leaving the cattle chute unused. Since the 1987 reconstruction work, the pier has suffered heavy erosion from the marine environment and deterioration from storms, vehicle operation, and overall use. Emergency repairs were conducted in 2002 and 2004 because of piling deterioration and collapse. Although abutting the historic district, the pier was determined to be a non-contributing resource within the proposed Santa Rosa Island Ranching Historic District. The pier has been rebuilt several times and lacks sufficient integrity to be included as a contributing element. The California SHPO concurred with the NPS finding that the Bechers Bay pier is non-contributing in August 2004.

VISITOR USE AND EXPERIENCE

Santa Rosa Island is 45 miles from park headquarters in Ventura, California. Annual visitation to the park's mainland visitor center in Ventura is approximately 300,000. Visitation to the islands is low, with about 30,000 or 10% of the annual park visitation traveling to the islands for one-day or multi-day boat trips and overnight camping trips. Visits to Santa Rosa Island occur primarily by concessionaire boat or concessionaire plane with the majority of visitation occurring between Memorial Day and Labor Day. By boat, the trip to the island is approximately 2.5 hours each way. Boat visitation to the island is extremely limited during the winter months because of the rough open waters. As shown in Table 4, passengers and campers to Santa Rosa Island from May through November have ranged from approximately 300 visitors per year to over 1,200. This does not include private boaters who may also access the island.

Two boat concessionaires, Island Packers and Truth Aquatics, operate out of Ventura and Oxnard harbors and Santa Barbara harbor, respectively. An adult ticket to Santa Rosa Island costs approximately $62 to $85 per adult depending on intended activities (day use versus camping). Channel Islands Aviation provides half-day excursions and surf fishing trips to Santa Rosa Island from Camarillo and Santa Barbara airports. Camping trips are also available. Costs for these scheduled excursions range from $129.95 to $199.95 per adult. Chartered flights may also be arranged for a substantially higher cost.

TABLE 4: SANTA ROSA ISLAND VISITATION

Year	No. of Visitors
1998	1,311
1999	618
2000	1,040
2001	364
2002	593
2003	952
2004	1,215
2005	1,148

Source: Island Packers, Ventura, CA

Visitors journeying via concessionaire boat to Santa Rosa Island arrive at the Santa Rosa Island pier in Bechers Bay (see Figures 1 and 2 in the “Purpose of and Need for Action” chapter). Park visitors must disembark on the south side of the pier by climbing an unenclosed ladder from the deck of the boat to the

pier platform, which can be a climb exceeding 10 feet, depending on the tide level and the size of the boat. For visitors, the pier provides access to the historic Vail & Vickers ranch and activities such as hiking, naturalist-led hikes, kayaking, fishing, SCUBA diving, snorkeling, surfing, boating, and wildlife watching. All areas must be accessed on foot or by private boat or kayak. Boaters may land along coastline and on beaches without a permit for day-use only, except for beaches between and including Skunk Point and East Point that are closed from March 1 to September 15 in order to protect the threatened snowy plover. The beaches around Sandy Point are closed year-round.

Overnight camping is provided in a 15-site campground at Waterton Canyon approximately 1.5 miles from the pier. Visitors must carry all their gear to the campgrounds. No on-island transportation is provided. A network of hiking trails ranging from 3 to 16 miles (round-trip) and from easy to strenuous is provided throughout the island for those interested in walking. Maximum day use on Santa Rosa Island is 100 people; maximum occupancy in the campground is 75 people (NPS 2006b).

For the mobility impaired, conditions on Santa Rosa Island are relatively primitive with no accessible facilities. Currently, visitors with mobility impairments access the island via concessionaire aircraft (Channel Islands Aviation). Once on the island, the NPS provides limited vehicle assistance to Lobo Canyon and Torrey Pines. There are currently no other forms of transportation available or approved for use.

Other visitor uses are permitted on Santa Rosa Island through special use permits. Under the park's authorizing legislation, Vail & Vickers, Ltd. was permitted to retain a 25-year, non-commercial reservation of use and occupancy on a 7.6-acre area containing the ranch house and a nearby field. In addition to the use and occupancy lease, the NPS also issued Vail & Vickers, Ltd. a series of 5-year Special Use Permits, allowing them to continue commercial deer and elk hunting on Santa Rosa Island.

Under the current Special Use Permit, Vail & Vickers, Ltd. manages a commercial hunt for deer and elk each year. The current permit is applicable through 2008. Hunts are operated by Multiple Use Managers, Inc. which charges $9,000 to $16,500, plus trophy fees, for 4- to 5-day hunts. There are approximately 80 trophy hunting clients per year. The public is excluded from most of the island during hunts. During 2006, this closure period extended from August 14 through December 13 (Library of Congress 2006).

HEALTH AND SAFETY

The NPS is committed to providing appropriate, high-quality opportunities for visitors and employees to enjoy the parks in a safe and healthful environment. The agency strives to protect human life and provide for injury-free visits. One of the its core values, as stated in the NPS *Management Policies 2006* and *Director's Order 50B, Occupational Safety and Health Program* (NPS 1999), is the safety and health of its employees, contractors, volunteers, and the visiting public. It is the policy of the agency to provide a safe and healthful place of employment to protect federal and private property from accidental damage or loss, and to meet or exceed all applicable statutory, regulatory, and policy requirements relating to safety, health, and the environment.

The Santa Rosa Island pier extends from a low bluff abutment offshore approximately 574 feet. The outer half of the 20 foot wide pier deck gradually curves to an east-northeast alignment in order to present more favorable berthing for small craft into the prevailing sea and wind conditions. The head of the pier is approximately 60 feet long and 40 feet wide with a 24-foot by 20-foot offset extension. The original A-frame hoist and cables that were used for many years to load and unload cattle is still in place; however, the original cattle chute that was lowered from the pier to boat and "stiff-leg crane" is no longer in place. The pier's construction is a composite of conventional timber frame construction and unique pile foundation support. The first five bents from the bluff top abutment consist of irregularly spaced driven timber piles reinforced with traverse timber bracing. These piles pre-date the 1987 reconstruction work. The pier stands 16 feet above MLLW. The pilings used to support the pier are 5-inch steel oil-stem drill pipes, which are set into about 4 feet of bedrock. The decking is made up of 3-inch by 12-inch timbers.

Along the entire length of the pier's deck there are wheel load runners that are made up of planks that run perpendicular to the decking of the pier, and provide extra support for the vehicles that drive on the pier. The runners are each approximately 3 feet wide and about 1 inch in height.

In May of 2002, the pier suffered serious damage when two bents of steel piles collapsed near the shoreline. Emergency repairs were completed in June 2002, to keep the island access operational. Then in December 2003, the pier had a lateral failure due to pile deterioration. The pier was closed to vehicle traffic until emergency repairs could be made beginning in January 2004. From January 2006, through July 2006, all of the pier piles were replaced and new bracing was added to keep the pier operational. The life-span of the pier after the new piles were added was predicted to be 5 to 15 years with continual maintenance.

The pier was never properly engineered, and many of the components of the structure are in an advanced stage of deterioration and have experienced irreversible damage. In addition, the abutment erosion that is occurring at the point where the pier meets the shoreline could result in a failure of that portion of the pier. Consequently, the pier does not conform to code and industry standards of ocean pier facilities (NPS 2006c). While maintenance to keep the pier safe and operational is ongoing, park staff and visitors' safety are threatened from the configuration and deterioration of the existing pier.

To access or depart the island, park staff and visitors are required to climb up or down an 8- to 15-foot ladder (depending on the tide) to access the pier from a docked boat or vice versa. Climbing up or down this ladder is inherently dangerous. The vertical climb can be disconcerting and challenging for visitors, park staff, and concessionaire employees who assist visitors from the boat to the pier, particularly if the visitors are mobility impaired or older. A wet ladder, movement of the boat, and people physically unable to climb can result in people falling into the water (drowning hazard) or onto the deck of the boat. Crushing injuries can also occur from people getting their hands or feet caught between the ladder or a pile and the docked boat. It is for these reasons that park policies prohibit non-park personnel from using the pier to access the island if seas are greater than 1 foot.

The wheel load runners that run the entire length of the pier pose a tripping hazard for those people working and walking on the pier. These load runners also make it difficult for mobility impaired or older visitors to navigate their way safely around the pier.

One of the major functions of the pier is the loading and off-loading of cargo necessary for the operation of the island. To off-load a boat, the park's truck-mounted crane backs down the entire length of the pier, sets up its stabilizing booms, and unloads the cargo. The cargo is then loaded onto a separate truck and shipped wherever on the island it is needed. While the end of the pier where off-loading occurs is 60 feet wide, the original hoist and support cables are still in place, which functionally decreases the usable area for the crane by roughly one-third. Because of the lack of functional area and obstructions located at the head of the pier, the crane operator has limited space to safely operate the crane.

PARK OPERATIONS AND MANAGEMENT

Channel Islands National Park's facilities and infrastructure are distributed across five islands and a mainland headquarters and visitor center. Facility operations staff support the daily operation of buildings, campgrounds, grounds, roads, trails, vehicles, vessels, and utilities at all of these locations. Facility operations include all activities required to manage and operate the park's infrastructure on a daily basis. Maintenance includes activities directed solely to prolonging the life of park assets and infrastructure through substantial repair, replacement, or rehabilitation of park assets, such as buildings, roads, trails, utilities, fleet vehicles, and equipment. Park operations also include activities performed by park staff associated with research, ecological monitoring, restoration efforts, species-specific management programs, wildland fire management, archives and collections management, historic site preservation and protection; information integration activities; and visitor services, including

interpretation, education, visitor center management, interpretive media, in-park concessions management, fee collection, and safety services.

Santa Rosa Island is located 45 miles from park headquarters by air or marine vessel. The island is staffed with one full-time park ranger and three park maintenance staff to maintain the full range of utilities, airstrip, and about 50 miles of dirt road. Seasonally, the island also supports park staff associated with research, ecological monitoring, restoration efforts, species-specific management programs, wildland fire management, archives and collections management, historic site preservation and protection, and information integration activities.

The park currently operates a fleet of four vessels to transport park staff, researchers, partners, and their cargo. This fleet includes: the 100-foot *Ocean Ranger* and the 58-foot *Sea Ranger,* both used for transporting people and cargo; the *Pacific Ranger,* a 56-foot research and diving vessel; and the *Surf Ranger*, a 74-foot landing craft used to transport vehicles and large cargo. Vessel operations encompass all activities related to the daily operation of this fleet. The pier at Bechers Bay supports roughly 700 vessel landings per year for park operations, the Vail & Vickers ranch special use permittee, and park concessionaire operations. The park utilizes the north side of the pier and moves supplies and equipment onto the pier with a mobile truck-mounted crane parked on the pier deck. The park operates its own boat for transporting its personnel, provisions, construction and maintenance materials, and making weekly visits.

CHAPTER 4 – ENVIRONMENTAL CONSEQUENCES

GENERAL METHODOLOGY FOR ESTABLISHING IMPACT THRESHOLDS AND MEASURING EFFECTS

This chapter addresses the potential impacts to each of the resource areas (e.g., impact topics) discussed in the "Affected Environment" chapter for each of the alternatives. The action alternatives are compared to the no action alternative or baseline condition of Santa Rosa Island to determine resource impacts. In the absence of quantitative data, best professional judgment was used. In general, impacts were determined through consultation and collaboration with a multidisciplinary team of NPS and other professional staff. Other existing data sources such as park planning documents and the park website were also used to assess the potential impact of each alternative.

Potential impacts of all alternatives are described in terms of type (beneficial or adverse); context; duration (short- or long-term); and intensity (negligible, minor, moderate, major). Definitions of these descriptors include:

Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.

Adverse: A change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.

Context: Context is the affected environment within which an impact would occur, such as local, park-wide, regional, global, affected interests, society as whole, or any combination of these. Context is variable and depends on the circumstances involved with each impact topic. As such, the impact analysis determines the context, not vice versa.

Duration: The duration of the impact is described as short-term or long-term. For purposes of this EA, unless otherwise noted under each impact topic, short-term impacts would generally occur during part or all of alternative implementation (construction), but would not exceed one year. Long-term impacts would extend beyond implementation of the alternative and persist beyond one year.

Intensity: Because definitions of impact intensity (negligible, minor, moderate, and major) vary by impact topic, intensity definitions are provided separately for each impact topic analyzed.

CUMULATIVE IMPACTS

NEPA regulations require an assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR Part 1508.7). Cumulative effects can result from individually minor, but collectively moderate or major actions that take place over a period of time.

Cumulative impacts are considered for all alternatives, including the no action alternative. Cumulative impacts were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions on or in the vicinity of Santa Rosa Island. Several past and potential future actions were identified that could result in cumulative impacts on Santa Rosa Island:

- A series of pier repairs have been executed since May of 2002 when two bents of steel piles collapsed near the shoreline followed by lateral failure due to pile deterioration in December of 2003. Emergency repairs were made in 2002 and 2004 to keep the pier operational. Following the December 2003, failure, the pier was closed to vehicle traffic beginning in January 2004, until emergency repairs could be made. From January 2006, through July 2006, all of the piles for the pier were replaced and new bracing was added to keep the pier operational.

- Potential rehabilitation of some of the buildings associated with the Vail & Vickers ranch could occur on the island in the near future. The only funded project is the rehabilitation of the horse and generator barn, which will replace the electrical systems, stabilize the barn foundations, and repair or replace deteriorated members. Rehabilitation of the caretaker's house is also planned in the future.

IMPAIRMENT ANALYSIS

The NPS *Management Policies 2006* require an analysis of potential effects to determine whether or not actions would impact park resources, but also to determine whether those actions would impair park resources. The fundamental purpose of the national park system, as established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. These laws give the NPS the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values.

The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on 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. An impact to any park resource or value may constitute an impairment, but an impact would be more likely to constitute an impairment to the extent that it has a major or severe adverse effect upon a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impairment determination is included in the conclusion statement for all impact topics related to all Channel Islands National Park natural and cultural resources. Impairment determinations are not made for health and safety or park operations and management because impairment findings relate back to park resources and values, and these impact areas are not generally considered to be park resources or values. Impairment determinations are not made for visitor use and experience because, according to the Organic Act, enjoyment cannot be impaired in the same way an action can impair park resources and values.

MARINE WATER RESOURCES / WATER QUALITY

Methodology and Assumptions

The NPS *Management Policies 2006* state that the NPS will "take all necessary actions to maintain or restore the quality of surface waters and ground waters within the parks consistent with the Clean Water Act and all other applicable federal, state, and local laws and regulations."

U.S. Environmental Protection Agency (EPA) water quality standards in 40 CFR Part 131 set the water quality goals of a water body by designating uses for the water, setting minimum criteria to protect the uses, and preventing degradation of water quality through anti-degradation provisions. The anti-degradation policy is only one portion of a water quality standard. Part of this policy (40 CFR 131.12(a)(2)) strives to maintain water quality at existing levels if it is already better than the minimum criteria.

Anti-degradation should not be interpreted to mean that "no degradation" can or will occur, as even in the most pristine waters, degradation may be allowed for certain pollutants as long as it is temporary and short-term.

Because there is little quantitative water quality data on the marine water resources surrounding the Channel Islands (Engle 2006), this assessment of the potential impacts to water quality is qualitative in nature. The assessment is based on potential anthropogenic impacts that would exceed current natural water quality.

Study Area

The geographic study area for marine water resources/water quality includes the waters within Bechers Bay.

Impact Thresholds

The following thresholds were used to determine the magnitude of impacts on marine waters:

Negligible – Neither water quality nor hydrology would be affected. Changes would be either non-detectable or, if detected, would have effects that would be considered slight, local, and short-term.

Minor – Changes in water quality or hydrology would be would be small, would likely be short-term, and the effects would be localized. No mitigation measure associated with water quality or hydrology would be necessary.

Moderate – Changes in water quality or hydrology would be long-term but would be relatively local. Mitigation measures associated with water quality or hydrology would be necessary and the measures would likely succeed.

Major – Changes in water quality or hydrology would have substantial consequences and would be noticed on a regional scale. Mitigation measures would be necessary and their success would not be guaranteed.

Duration – Short-term impacts occur during all or part of alternative implementation; long-term impacts extend beyond implementation of the alternative.

Impacts of Alternative A – No Action Alternative

Analysis. Under the no action alternative, the current configuration of the pier would remain unchanged, and regular maintenance and monitoring would continue to keep the pier operational for as long as possible.

Runoff from the road leading to the pier and from the pier itself would transport sediments and any other pollutants found on the road or pier into the waters immediately surrounding the pier. However, these adverse impacts would be short-term and minor and would most likely occur only during storm events. Marine water quality under the no action alternative would continue to remain within historical or desired water conditions.

Cumulative Impacts. During storm events, stormwater runoff from the natural drainages that flow into Bechers Bay (not associated with the pier's access road), would increase the transport of sediment into the water surrounding Santa Rosa Island. This increased transport of materials would likely only occur during storm events, and would result in short-term minor adverse impacts to water quality within the water surrounding Santa Rosa Island.

These impacts, in combination with the short-term minor adverse impacts of the no action alternative, would likely result in short-term minor adverse cumulative impacts to the water quality of the waters in Bechers Bay. The no action alternative would not contribute to an incremental increase in overall adverse cumulative impacts to marine water quality.

Conclusion. Implementation of the no action alternative would result in short-term minor adverse impacts to water quality as a result of the transport of sediment and other pollutants from the pier's access road into Bechers Bay. The no action alternative would not contribute to an incremental increase in overall adverse cumulative impacts to marine water quality. No impairment of marine water resources would occur under the no action alternative.

Impacts of Alternative B – New Pier on Existing Alignment (NPS Preferred)

Analysis. Alternative B would replace the existing pier on the same alignment; however the pier height would be increased and portions of the pier would be widened. Boarding platforms would be built on the sides of the pier. In addition, stormwater management controls would be added to the pier's access road to slow stormwater runoff in order to minimize erosion and ultimately reduce the amount of sediment transported to the ocean.

To manage stormwater flows from the pier's access road, a trench drain would be installed on the land side of the pier structure to capture stormwater running down the dirt roadway towards the pier deck. Gravel or other materials would also be placed on each side of the road to dissipate stormwater runoff energy. These gravel-lined swales would deliver water downhill towards the pier; however, the water would travel at a slower velocity and the trench drain would capture the runoff to help control erosion and reduce the transport of sediments into Bechers Bay. By incorporating these stormwater controls, the total amount of sediment from the road transported through runoff would be greatly reduced, and the resultant adverse impacts to water quality would be negligible and of short duration.

Demolition and construction activities proposed under this alternative would likely increase turbidity in the immediate vicinity of the pier as sediments on the ocean floor are disturbed and resuspended in the water column. Activities that would cause ocean floor disturbance include removal of the existing piles and predrilling for the installation of the new, larger piles. Predrilling would be performed with a requirement that the amount of materials displaced would be minimized. Given that the bottom sediments are mostly sand, any increase in turbidity caused by the disturbance of the ocean floor would quickly settle. In addition, increased turbidity caused by sediments other than sand (e.g., organics, detritus, silts, and clays) would quickly be dissipated by tidal and wave action within the bay. As a result, impacts to water quality associated with increased turbidity would be negligible, localized, and of short duration.

Piles would be driven to a required depth in the predrilled fractured rock, then post grouted with Portland cement to provide required strength. Post grouting would be formulated with anti-washout agents, and grouting would be limited to below 5 feet of the seabed floor to minimize potential for deposition or unintended flow of cement grout beyond the extent of the drilled hole. As a result, no impacts to marine water quality are expected from the use of Portland cement to strengthen the new piles.

The use of heavy machinery near and over the water would increase the potential that contaminants such as diesel fuel, oils, lubricants, and hydraulic fluids could be released into the water. To minimize this potential, prior to construction, a hazardous spill prevention plan would be developed by the construction contractors, and approved by the NPS, that outlines the protocols that would be taken in the event of a fuel leak or spill. This plan would incorporate preventative proactive measures that would be implemented to guard against any potential contamination. Such measures could include, but are not limited to:

- locating construction staging areas and areas for refueling and maintenance activities well away from surface water features or drainages, if feasible;
- designating areas where refueling or construction vehicle and equipment maintenance would be performed and having containment devices such as temporary earth berms around these areas; and
- keeping absorbent pads and booms close at hand and readily available to clean up spills.

With the planning efforts and mitigation measures implemented during and after the actions associated with demolition/construction of the proposed pier, adverse impacts to the water quality that could occur from construction equipment in Bechers Bay would be minimized and would likely be negligible and of short duration.

Short-term negligible adverse impacts to the water quality within Bechers Bay would be expected from the use of boats to house work crews during construction. While these boats would be regulated by the U.S. Coast Guard and not be allowed to pump waste into marine waters, the running of the boat, and the use of a skiff to shuttle crew members back and forth would likely result in negligible amounts of oil and gasoline being released.

Cumulative Impacts. During storm events, stormwater runoff from the natural drainages that flow into Bechers Bay (not associated with the pier's access road), would increase the transport of sediment into the water surrounding Santa Rosa Island. This increased transport of materials would likely only occur during storm events, and would result in short-term minor adverse impacts to water quality within the water surrounding Santa Rosa Island.

These impacts, in combination with the short-term negligible adverse impacts of Alternative B, would likely result in short-term minor adverse cumulative impacts to the water quality of the waters in Bechers Bay. Alternative B would contribute only slightly to an incremental increase in overall cumulative adverse impacts to marine water quality.

Conclusion. Under Alternative B, adverse impacts to the water quality that could occur from construction equipment in Bechers Bay would be minimized and would likely be negligible and of short duration. Implementation of Alternative B would result in short-term negligible adverse impacts to water quality as a result of the transport of sediment and other pollutants from the pier's access road, and from removal of the existing piles and installation of new piles, into Bechers Bay. Alternative B would contribute only slightly to an incremental increase in overall cumulative adverse impacts to marine water quality. No impairment of marine water resources would occur under this alternative.

Impacts of Alternative C – Rehabilitation of Existing Pier

Analysis. Alternative C would rehabilitate the existing pier on its current alignment, and boarding platforms would be built on the sides of the pier. Stormwater management controls would also be added to the pier's access road to slow stormwater runoff in order to minimize erosion and ultimately reduce the amount of sediment transported to the ocean.

To manage stormwater flows from the pier's access road, a trench drain would be installed on the land side of the pier structure to capture stormwater running down the dirt roadway towards the pier deck. Gravel or other materials would also be placed on each side of the road to dissipate stormwater runoff energy. These gravel-lined swales would deliver water downhill towards the pier; however, the water would travel at a slower velocity and the trench drain would capture the runoff to help control erosion and reduce the transport of sediments into the ocean. By incorporating these stormwater controls, the total amount of sediment from the road transported through runoff would be greatly reduced, and the resultant adverse impacts to water quality would be negligible and of short duration.

Rehabilitation activities proposed under this alternative would likely increase turbidity in the immediate vicinity of the pier as sediments on the ocean floor are disturbed and resuspended in the water column. Activities that would cause ocean floor disturbance include removal of the existing piles and predrilling for the installation of the new, larger piles. Predrilling would be performed with a requirement that the amount of materials displaced would be minimized. Given that the bottom sediments are mostly sand, any increase in turbidity caused by the disturbance of the ocean floor would quickly settle. In addition, increased turbidity caused by sediments other than sand (e.g., organics, detritus, silts, and clays) would quickly be dissipated by tidal and wave action within the bay. As a result, impacts to water quality associated with increased turbidity would be negligible, localized, and of short duration.

Piles would be driven to a required depth in the predrilled fractured rock, then post grouted with Portland cement to provide required strength. Post grouting would be formulated with anti-washout agents, and grouting would be limited to below 5 feet of the seabed floor to minimize potential for deposition or unintended flow of cement grout beyond the extent of the drilled hole. As a result, no impacts to marine water quality are expected from the use of Portland cement to strengthen the new piles.

The use of heavy machinery near and over the water would increase the potential that contaminants such as diesel fuel, oils, lubricants, and hydraulic fluids could be released into the water. To minimize this potential, prior to construction, a hazardous spill prevention plan would be developed by the construction contractors, and approved by the NPS, that outlines the protocols that would be taken in the event of a fuel leak or spill. This plan would incorporate preventative proactive measures that would be implemented to guard against any potential contamination. Such measures could include, but are not limited to:

- locating construction staging areas and areas for refueling and maintenance activities well away from surface water features or drainages, if feasible;
- designating areas where refueling or construction vehicle and equipment maintenance would be performed and having containment devices such as temporary earth berms around these areas; and
- keeping absorbent pads and booms close at hand and readily available to clean up spills.

With the planning efforts and mitigation measures implemented during and after the actions associated with rehabilitation of the pier, adverse impacts to the water quality that could occur from construction equipment in Bechers Bay would be minimized and would likely be negligible and of short duration.

Short-term negligible adverse impacts to the water quality within Bechers Bay would be expected from the use of boats to house work crews during construction. While these boats would be regulated by the U.S. Coast Guard and not be allowed to pump waste into marine waters, the running of the boat, and the use of a skiff to shuttle crew members back and forth would likely result in negligible amounts of oil and gasoline being released.

Cumulative Impacts. During storm events, stormwater runoff from the natural drainages that flow into Bechers Bay (not associated with the pier's access road), would increase the transport of sediment into the water surrounding Santa Rosa Island. This increased transport of materials would likely only occur during storm events, and would result in short-term minor adverse impacts to water quality within the water surrounding Santa Rosa Island.

These impacts, in combination with the short-term negligible adverse impacts of Alternative C, would likely result in short-term minor adverse cumulative impacts to the water quality of the waters in Bechers Bay. Alternative C would contribute only slightly to an incremental increase in overall cumulative adverse impacts to marine water quality.

Conclusion. Under Alternative C, adverse impacts to the water quality that could occur from construction equipment in Bechers Bay would be minimized and would likely be negligible and of short duration. Implementation of Alternative C would result in short-term negligible adverse impacts to water quality as a result of the transport of sediment and other pollutants from the pier's access road, and from removal of the existing piles and installation of new piles, into Bechers Bay. Alternative C would contribute only slightly to an incremental increase in overall cumulative adverse impacts to marine water quality. No impairment of marine water resources would occur under this alternative.

Impacts of Alternative D – New Pier on Adjacent Alignment

Analysis. Alternative D would replace the existing pier with a pier of the same size and configuration as described under Alternative B, but on a different alignment. Stormwater management controls would also

be added to the pier's access road to slow stormwater runoff in order to minimize erosion and ultimately reduce the amount of sediment transported to the ocean.

To manage stormwater flows from the pier's access road, a trench drain would be installed on the land side of the pier structure to capture stormwater running down the dirt roadway towards the pier deck. Gravel or other materials would also be placed in swales on each side of the road to dissipate stormwater runoff energy. These gravel-lined swales would deliver water downhill towards the pier; however, the water would travel at a slower velocity and the trench drain would capture the runoff to help control erosion and reduce the transport of sediments into the ocean. By incorporating these stormwater controls, the total amount of sediment from the road transported through runoff would be greatly reduced, and the resultant adverse impacts to water quality would be negligible and of short duration.

Demolition and construction activities proposed under this alternative would likely increase turbidity in the immediate vicinity of the pier as sediments on the ocean floor are disturbed and resuspended in the water column. Activities that would cause ocean floor disturbance include removal of the existing piles and predrilling for the installation of the new, larger piles. Predrilling would be performed with a requirement that the amount of materials displaced would be minimized. Given that the bottom sediments are mostly sand, any increase in turbidity caused by the disturbance of the ocean floor would quickly settle. In addition, increased turbidity caused by sediments other than sand (e.g., organics, detritus, silts, and clays) would quickly be dissipated by tidal and wave action within the bay. As a result, impacts to water quality associated with increased turbidity would be negligible, localized, and of short duration.

Piles would be driven to a required depth in the predrilled fractured rock, and then post grouted with Portland cement to provide required strength. Post grouting would be formulated with anti-washout agents, and grouting would be limited to below 5 feet of the seabed floor to minimize potential for deposition or unintended flow of cement grout beyond the extent of the drilled hole. As a result, no impacts to marine water quality are expected from the use of Portland cement to strengthen the new piles.

The use of heavy machinery near and over the water would increase the potential that contaminants such as diesel fuel, oils, lubricants, and hydraulic fluids could be released into the water. To minimize this potential, prior to construction, a hazardous spill prevention plan would be developed by the construction contractors, and approved by the NPS, that outlines the protocols that would be taken in the event of a fuel leak or spill. This plan would incorporate preventative proactive measures that would be implemented to guard against any potential contamination. Such measures could include, but are not limited to:

- locating construction staging areas and areas for refueling and maintenance activities well away from surface water features or drainages, if feasible;
- designating areas where refueling or construction vehicle and equipment maintenance would be performed and having containment devices such as temporary earth berms around these areas; and
- keeping absorbent pads and booms close at hand and readily available to clean up spills.

With the planning efforts and mitigation measures implemented during and after the actions associated with demolition/construction of the proposed pier, adverse impacts to the water quality that could occur from construction equipment in Bechers Bay would be minimized and would likely be negligible and of short duration.

Short-term negligible adverse impacts to the water quality within Bechers Bay would be expected from the use of boats to house work crews during construction. While these boats would be regulated by the U.S. Coast Guard and not be allowed to pump waste into marine waters, the running of the boat, and the use of a skiff to shuttle crew members back and forth would likely result in negligible amounts of oil and gasoline being released.

Cumulative Impacts. During storm events, stormwater runoff from the natural drainages that flow into Bechers Bay (not associated with the pier's access road), would increase the transport of sediment into the water surrounding Santa Rosa Island. During the two construction periods, when the existing pier is still operational and the new pier is being constructed, there would be an increased risk of runoff from two piers. This could have a slight incremental increase in contribution to cumulative impacts to water turbidity and quality.

These impacts, in combination with the short-term negligible adverse impacts of Alternative D, would likely result in short-term minor adverse cumulative impacts to the water quality of the waters in Bechers Bay. Alternative D would contribute only slightly to an incremental increase in overall cumulative adverse impacts to marine water quality.

Conclusion. Under Alternative D, adverse impacts to the water quality that could occur from construction equipment in Bechers Bay would be minimized and would likely be negligible and of short duration. Implementation of Alternative D would result in short-term negligible adverse impacts to water quality as a result of the transport of sediment and other pollutants from the pier's access road, and from removal of the existing piles and installation of new piles, into Bechers Bay. Alternative D would contribute only slightly to an incremental increase in overall cumulative adverse impacts to marine water quality. No impairment of marine water resources would occur under this alternative.

ESSENTIAL FISH HABITAT

Methodology and Assumptions

Activities proposed to occur in EFH areas do not automatically require consultation with the NMFS. Essential Fish Habitat consultations are triggered only when the proposed action may adversely affect EFH, and then, only federal actions require consultation. The *Essential Fish Habitat Consultation Guide* (NMFS 2004a) indicates that an EFH assessment must include an analysis of the effects of a proposed action on EFH and determine whether those effects would be adverse as defined by the guidelines. Not all adverse (negative) impacts as defined by *Director's Order 12* and the impact thresholds for analysis of EFH (see below) are "adverse" to EFH as defined by NMFS. Only moderate and major impacts, as defined by the thresholds, would result in "adverse" impacts to EFH. The NMFS encourages agencies to consider avoidance and minimization measures such as best management practices to lessen or eliminate potential effects to EFH.

On August 3, 2003, NMFS issued a General Concurrence for individual, in-kind dock replacement and repair activities permitted by the U.S. Army Corps of Engineers, Los Angeles District, for soft bottom substrate with no sensitive habitats (i.e., the presence of eelgrass) within 25 feet of construction activities (NMFS 2003). General Concurrence authorization means that NMFS has determined that, based on its experience in determining the effects of such dock repair/replacement activities, such activities would create no more than minimal cumulative adverse effects on designated EFH.

On August 12, 2004, the NMFS determined that, in accordance with 50 CFR Part 600.920(j) of the EFH regulations, programmatic consultation is appropriate for individual, in-kind dock replacement and repair activities permitted by the U.S. Army Corps of Engineers, Los Angeles District, for soft bottom substrate with sensitive habitats within 25 feet of construction activities (NMFS 2004b). The NMFS determined that, if these conservation measures listed below are applied, individual, in-kind dock replacement and repair activities would not result in adverse effects to EFH.

Conservation measures recommended by NMFS that would be implemented by the park and that are listed in mitigation measures in the "Alternatives" chapter include the following:

- NMFS would be notified of the proposed action, per Regional Conditions for the U.S. Army Corps of Engineers Los Angeles District for Nationwide Permit 3. This nationwide permit is the U.S. Army Corps of Engineers' Nationwide Permit required for activities related to repair,

rehabilitation, or replacement of any previously authorized, currently serviceable, structure, or fill, provided that the structure would not be put to different uses.

- Pilings would be installed by predrilling or augering through rock, then grouting the piles in place. The decking structure would be constructed in-place, floated, or lowered into place.
- In-water construction would be limited to minor assembly work and to the dock footprint.

The NMFS has stated that these activities would rarely result in permanent impacts; thus, with implementation of the measures listed above, it is expected that there would be no loss of any subtidal or intertidal functions and values, or the loss of any unique or rare subtidal or intertidal habitat types within the region (NMFS 2004).

Study Area

The study area for EFH is Bechers Bay surrounding the pier at Santa Rosa Island, and includes the intertidal and subtidal waters under the pier structure.

Impact Thresholds

Negligible – The action could result in a change to designated EFH, but the change would be so small that it would not be of any measurable or perceptible consequence and would be well within natural variability. This impact intensity equates to a "will not adversely affect" EFH determination.

Minor – The action could result in a change to designated EFH. The change would be measurable, but small and localized and not outside the range of natural variability. Fish could be present in juvenile and/or adult life stages, but mitigation measures to offset any potential adverse effects would be simple and successful. This impact intensity equates to a "will not adversely affect" EFH determination.

Moderate – Impacts on EFH or the natural processes sustaining them would be detectable and occur over a large area. Breeding fish of concern are present; fish are present during particularly vulnerable life-stages such as migration or juvenile stages; mortality or interference with activities necessary for survival can be expected on an occasional basis, but is not expected to threaten the continued existence of the species in the park unit or within the designated habitat. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful. This impact intensity equates to a "may adversely affect" EFH determination.

Major – The action would result in a noticeable effect to designated EFH. Impacts on the natural processes sustaining the habitat would be detectable, both in and out of the park. Loss of habitat might affect the viability of at least some fish species in the EFH composite group. Extensive mitigation measures would be needed to offset any adverse effects and their success would not be guaranteed. This impact intensity equates to a "may adversely affect" EFH determination.

Duration – Short-term impacts would occur during part or all of alternative implementation (construction), but would not exceed one year. Long-term impacts would extend beyond implementation of the alternative and persist beyond one year.

Impacts of Alternative A – No Action Alternative

Analysis. Currently, the presence of the pier does not adversely affect EFH for Pacific coast groundfish or coastal pelagic species that may be present in Bechers Bay. Under the no action alternative, occasional replacement of individual piles would occur resulting in some substrate disturbance and turbidity in the water column. While the shading of the substrate by the pier has the potential to limit growth of eelgrass, the presence of eelgrass in the bay is not common and other factors, such as turbidity from wave action, likely limit current eelgrass growth. Due to the implementation of best management practices and the

temporary nature of pile removal and replacement activities, the no action alternative would result in short-term negligible impacts on EFH. However, there would be no permanent adverse impacts on EFH as defined by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and NMFS.

Cumulative Impacts. Although pile replacement activities occurred in 2006 on the Santa Rosa Island pier and could occur again in the future in the no action alternative, the impacts associated with pile driving are immediate, quickly dissipated, and not cumulative in nature. Therefore, no cumulative impacts would result when past pile replacement activities are combined with the ongoing pier repair activities that would occur in the no action alternative.

Conclusion. The no action alternative would result in some negligible impacts to EFH as a result of occasional pile removal and installation activities. There would be no cumulative impacts and no impairment of fish habitat under this alternative. These intermittent activities would not adversely affect designated EFH for groundfish or coastal pelagic species in the project area.

Impacts of Alternative B – New Pier on Existing Alignment (NPS Preferred)

Analysis. Alternative B would replace the existing pier on the same alignment; however the pier height would be increased and portions of the pier would be widened. Boarding platforms would be built on the sides of the pier.

In the short term, construction activities could impact EFH by disturbing substrate and increasing turbidity during removal and installation of pilings. Increases in turbidity could disturb fish and eelgrass present in the area; however, best management practices would be implemented to minimize turbidity related impacts. Fish present in the area would be expected to avoid areas of increased turbidity.

To protect eelgrass beds from construction impacts, eelgrass surveys would be conducted prior to construction. If located in the project area, eelgrass beds would be marked to prevent anchoring impacts. Eelgrass could also be impacted in the long term if eelgrass is present in the shade zone of the new pier structure; any decrease in light transmission may reduce growth of eelgrass. However, any increases in shading would likely be offset by the increased height of the new pier, which would allow more light penetration underneath the pier deck. Conducting post-construction surveys for eelgrass (if present) would allow for an assessment of any impacts to these beds. Adherence to policies contained in the *NMFS' Southern California Eelgrass Mitigation Policy* (NMFS 2005) would help mitigate for any adverse effects to eelgrass, if any.

Short-term, temporary degradation of EFH could also occur through noise generated from pile-driving activities. Pile driving can generate intense underwater sound pressure waves that have been shown to injure and kill fish. However, data on sound pressure levels that will injure fish is very limited and injury potential is dependent on a variety of factors (Hanson et al. 2003). To minimize potential impacts, the NPS would consult with NMFS to determine the most appropriate mitigation measures during the drilling of piles.

Due to the implementation of best management practices and mitigation measures specified by NMFS, these impacts would be temporary and would have negligible to minor impacts on EFH. Further, the NMFS Southwest Region concluded in their General Concurrence (NMFS 2003) and Programmatic Authorization (NMFS 2004b) of pier replacement activities such actions would not result in adverse effects on designated EFH for groundfish or coastal pelagic species if mitigation measures are implemented. Therefore, adherence to mitigation measures listed in the "Alternatives" chapter, as well as other measures that may be recommended by NMFS during consultation, would likely reduce or avoid adversely impacting fish or EFH.

Cumulative Impacts. Although pile replacement activities occurred in 2006 on the Santa Rosa Island pier and would occur again in the future in Alternative B, the impacts associated with pile driving are immediate, quickly dissipated, and not cumulative in nature. Therefore, no cumulative impacts would

result when past pile replacement activities are combined with the pier replacement proposed in Alternative B.

Conclusion. Construction activities could result in short-term, minor impacts to eelgrass and fish by disturbing substrate and increasing turbidity from removal and installation of pilings. The slight increase in pier dimensions could cause some additional shading of substrate, but the increased height of the pier would most likely offset this change by allowing additional light penetration. Short-term, temporary impacts could also occur to fish through noise generated from pile-driving activities. However, these impacts would be negligible to minor because appropriate mitigation would be implemented. There would be no cumulative impacts and no impairment of fish habitat under this alternative. As a result, pier replacement activities would not adversely affect designated EFH for groundfish or coastal pelagic species in the project area.

Impacts of Alternative C – Rehabilitation of Existing Pier

Analysis. Alternative C would retain the existing pier structure, but existing pier pilings would be replaced and new landing platforms would be added on either side of the pier. Construction activities could affect EFH in the short term by disturbing substrate and increasing turbidity during removal and installation of pilings. Increases in turbidity could disturb fish and eelgrass present in the area; however, best management practices would be implemented to minimize turbidity related impacts. Fish present in the area would be expected to avoid areas of increased turbidity.

To protect eelgrass beds from construction impacts, eelgrass surveys would be conducted prior to construction. If located in the project area, eelgrass beds would be marked to prevent anchoring impacts. Conducting post-construction surveys for eelgrass (if present) would allow for an assessment of any impacts to these beds. Implementation of measures included in *NMFS' Southern California Eelgrass Mitigation Policy* (NMFS 2005) would mitigate for any loss or disturbance of eelgrass beds.

Short-term, temporary degradation of EFH could also occur through noise generated from pile-driving activities. Pile driving can generate intense underwater sound pressure waves that have been shown to injure and kill fish; however, data on sound pressure levels that will injure fish is very limited and injury potential is dependent on a variety of factors (Hanson et al. 2003). To minimize potential impacts, the NPS would consult with NMFS to determine the most appropriate mitigation measures during the drilling of piles.

Due to the implementation of best management practices and mitigation measures specified by NMFS, these impacts would be temporary and would have negligible to minor impacts on EFH. Further, the NMFS Southwest Region concluded in their General Concurrence (NMFS 2003) and Programmatic Authorization (NMFS 2004b) of pier replacement activities such actions would not result in adverse effects on designated EFH for groundfish or coastal pelagic species if mitigation measures are implemented. Therefore, adherence to mitigation measures listed in the "Alternatives" chapter, as well as other measures that may be recommended by NMFS during consultation, would likely reduce or avoid adversely impacting fish or EFH.

Cumulative Impacts. The impacts associated with pile driving are immediate and quickly dissipated. Therefore, the impacts of past pile replacements on the Santa Rosa Island pier, when combined with the existing pier rehabilitation that would occur in Alternative C, would result in no cumulative impacts.

Conclusion. Construction activities could result in short-term, minor impacts to eelgrass and fish by disturbing substrate and increasing turbidity from removal and installation of pilings. Short-term, temporary impacts could also occur to fish through noise generated from pile-driving activities. However, these impacts would be negligible to minor because appropriate mitigation would be implemented. There would be no cumulative impacts and no impairment of fish habitat under this alternative. As a result, pier replacement activities would not adversely affect designated EFH for groundfish or coastal pelagic species in the project area.

Impacts of Alternative D – New Pier on Adjacent Alignment

Analysis. In this alternative, a new pier would be constructed southeast and parallel to the existing structure and would have the same design and features as Alternative B. When the new structure is complete, the existing structure would be removed.

Placement of a new pier adjacent to the existing pier would result in substrate disturbance under the existing pier as well as substrate disturbance in areas previously undisturbed. In the short term, this disturbance could affect EFH by increasing turbidity during removal and installation of pilings over a larger area than in other alternatives. Increases in turbidity could disturb fish and eelgrass present in the area; however, best management practices would be implemented to minimize turbidity related impacts. Because the substrate in the area is primarily sand, currents and wave action are likely to quickly resettle the substrate to equilibrium with the surrounding area so that short-term impacts would be minor.

To protect eelgrass beds from construction impacts, eelgrass surveys would be conducted prior to construction. If located in the project area, eelgrass beds would be marked to prevent anchoring impacts. Eelgrass could also be impacted in the long-term if eelgrass is present in the shade zone of the new pier structure, any decrease in light transmission may reduce growth of eelgrass. However, any increases in shading would likely be offset by the increased height of the new pier, which would allow more light penetration underneath the pier deck. Conducting post-construction surveys for eelgrass (if present) would allow for an assessment of any impacts to these beds. Adherence to policies contained in the *NMFS' Southern California Eelgrass Mitigation Policy* (NMFS 2005) would help mitigate for any adverse effects to eelgrass, if any.

Short-term, temporary degradation of EFH could also occur through noise generated from pile-driving activities. Pile driving can generate intense underwater sound pressure waves that have been shown to injure and kill fish. However, data on sound pressure levels that will injure fish is very limited and injury potential is dependent on a variety of factors (Hanson et al. 2003). To minimize potential impacts, the NPS would consult with NMFS to determine the most appropriate mitigation measures during the drilling of piles.

Although a larger area of disturbance would occur over the short term due to the installation of a new pier and the removal of the old pier, in the long term only one pier would remain. Due to the implementation of best management practices and mitigation measures specified by NMFS, these impacts would be temporary and would have negligible to minor impacts on EFH. National Marine Fisheries Service concluded in their General Concurrence (NMFS 2003) and Programmatic Authorization (NMFS 2004b) of pier replacement activities that such actions would not result in adverse effects on designated EFH for groundfish or coastal pelagic species if mitigation measures are implemented. Therefore, adherence to mitigation measures listed in the "Alternatives" chapter, as well as other measures that may be recommended by NMFS during consultation, would likely reduce or avoid adversely impacting fish or EFH.

Cumulative Impacts. The impacts associated with pile driving are immediate and quickly dissipated. Therefore, the impacts of past pile replacements on the Santa Rosa Island pier when combined with the new pier construction that would occur in Alternative C would result in no cumulative impacts.

Conclusion. Placement of a new pier adjacent to the existing pier would result in substrate disturbance under the existing pier as well as in areas previously undisturbed. In the short term, this disturbance could increase turbidity during removal and installation of pilings over a larger area. The slight increase in pier dimensions could also cause some additional shading of substrate, but the increased height of the pier would most likely offset this change by allowing additional light penetration. Short-term, temporary impacts could also occur to fish through noise generated from pile-driving activities. However, these impacts would be negligible to minor because appropriate mitigation would be implemented. There would be no cumulative impacts and no impairment of fish habitat under this alternative. As a result, pier

replacement activities would not adversely affect designated EFH for groundfish or coastal pelagic species in the project area.

THREATENED, ENDANGERED, AND SPECIES OF SPECIAL CONCERN – SANTA ROSA ISLAND FOX

Methodology and Assumptions

The Endangered Species Act (16 U.S.C. 1531 et seq.) mandates that all federal agencies consider the potential effects of their actions on species listed as threatened or endangered. Section 7 of the Endangered Species Act requires federal agencies that fund, authorize, or carry out an action to ensure that their action is not likely to jeopardize the continued existence of any threatened or endangered species (including plant species) or result in the destruction or adverse modification of designated critical habitats. If it is determined that an action may adversely affect a federally listed species, consultation with the USFWS is required to ensure minimization of potential adverse impacts to the species or its designated critical habitat. In addition, the NPS *Management Policies 2006* state that the NPS will inventory, monitor, and manage all state and locally listed species in a manner similar to its treatment of federally listed species, to the greatest extent possible.

Study Area

The geographic study area for any federal- or state-listed species that could be impacted by the proposed actions includes any habitat in the vicinity of the project area.

Impact Thresholds

Negligible – The action could result in a change to a population or individuals of a species or designated critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence and would be well within natural variability. This impact intensity would equate to a determination of "no effect" under Section 7 of the Endangered Species Act.

Minor – The action could result in a change to a population or individuals of a species or designated critical habitat. The change would be measurable, but small and localized and not outside the range of natural variability. Mitigation measures, if needed to offset the adverse effects, would be simple and successful. This impact intensity would equate to a determination of "may affect, not likely to adversely affect" under Section 7 of the Endangered Species Act.

Moderate – Impacts on special-status species, their habitats, or the natural processes sustaining them would be detectable and occur over a large area. Breeding animals of concern are present; animals are present during particularly vulnerable life-stages such as migration or juvenile stages; mortality or interference with activities necessary for survival can be expected on an occasional basis, but is not expected to threaten the continued existence of the species in the park unit. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful. This impact intensity would equate to a determination of "may affect, likely to adversely affect" determination under Section 7 of the Endangered Species Act.

Major – The action would result in a noticeable effect to viability of a population or individuals of a species or resource or designated critical habitat. Impacts on a special-status species, critical habitat, or the natural processes sustaining them would be detectable, both in and out of the park. Loss of habitat might affect the viability of at least some special-status species. Extensive mitigation measures would be needed to offset any adverse effects and their success would not be guaranteed. This impact intensity would equate to a determination of "may affect, likely to adversely affect" under Section 7 of the Endangered Species Act.

Duration – Short-term impacts would occur during part or all of alternative implementation (construction), but would not exceed one year. Long-term impacts would extend beyond implementation of the alternative and persist beyond one year.

Impacts of Alternative A - No Action Alternative

Analysis. In the no action alternative, maintenance and repair of the current pier would continue as needed. There would be little if any physical disturbance of habitat adjacent to the pier because maintenance activities would generally occur within the confines of the pier's footprint.

As of 2005, the population of the federally endangered Santa Rosa Island fox (island fox) was approximately 70 individuals. Because of the fox's ability to utilize many different habitats, the potential exists for the island fox to occur within the immediate vicinity of the current pier. In February of 2005, an island fox was lost when it got stuck in a PVC pipe near the Vail Vickers ranch (NPS 2006). A second fox was lost in November of 2006 in a similar situation. Despite these accidental losses, activities directly associated with the maintenance and operation of the pier would not likely result in the harm or inadvertent loss of an individual(s) or its habitat. Activity associated with the maintenance and operation of the pier is isolated to the pier and the service road leading to the pier. Neither the pier nor the road provides situations that would likely attract a fox seeking food or shelter, or present situations where a fox could become trapped or ensnared (i.e., exposed PVC pipe). In addition, injury or mortality to the island fox as a result of vehicular conflicts would not likely occur. Park vehicles used for loading and off-loading cargo from the pier are forced to drive at slower speeds (less than 10 miles per hour) due to road conditions, steepness of the road, and safety concerns, which provide both the driver and animal a longer reaction time to avoid conflict.

During all maintenance and operation activities, the NPS would employ mitigation measures to ensure the protection of its natural and biological resources, as well as mitigation implemented specifically for the island fox. For example, if an individual(s) are observed within the immediate vicinity of the pier, park staff would stop the operation of the pier until park biologists can determine whether it is a transient, or if there is an active den in the area. If an active den is discovered near the pier, the NPS would determine the potential impacts that could occur from the attendant human activity. Mitigation measures would then be developed to best avoid or minimize impacts that could occur from human / island fox conflict. Mitigations could include, but are not limited to, restricting park operations or visitor use within the active den area or relocating individuals to more remote areas of the island. In addition by keeping all garbage covered and contained, and enforcing the "no feeding of wildlife" rules, foxes would not be attracted to areas of human activity and overall impacts would be minimized to the greatest extent possible.

As a result of the current habitat conditions in areas within the immediate vicinity of the pier, the use of vehicles that support pier operations, and mitigation measures aimed at minimizing impacts to the island fox and other wildlife, long-term minor adverse impacts could occur to the island fox from the maintenance and operation of the pier at Bechers Bay.

Cumulative Impacts. Actions associated with the future rehabilitation and/or conversion of some of the ranch buildings could result in adverse impacts to the Santa Rosa Island fox island fox from potential conflicts resulting from attendant human activities. During these activities, however, the NPS would employ mitigation measures to ensure the protection of its natural and biological resources, as well as mitigation that specifically addresses the island fox. As a result, long-term negligible adverse impacts to the Santa Rosa Island fox could occur. These future impacts, in combination with the long-term negligible adverse impacts associated with the no action alternative, could result in long-term negligible adverse cumulative impacts to the Santa Rosa Island fox.

Conclusion. Implementation of the no action alternative would result in long-term negligible adverse impacts to the federally endangered Santa Rosa Island fox as a result of the ongoing operation and

maintenance of the pier. Long-term negligible adverse cumulative impacts could also occur. No impairment of this special status species would occur under the no action alternative.

Impacts of Alternative B – New Pier on Existing Alignment (NPS Preferred)

Analysis. Alternative B would replace the existing pier on the same alignment; however the pier height would be increased and portions of the pier would be widened. Boarding platforms would be built on the sides of the pier.

Activities directly associated with the demolition or the current pier and construction and operation of new pier would not likely result in the harm or inadvertent loss of an individual(s) or its habitat. Activities associated with the demolition/construction activities and operation of the pier are isolated to the pier and the service road leading to the pier. Neither the pier nor the road provides situations that would likely attract a fox seeking food or shelter, or present situations where a fox could become trapped or ensnared (i.e., exposed PVC pipe). In addition, injury or mortality to the island fox due to vehicular conflicts would not likely occur. Park vehicles used for loading and off-loading cargo from the pier are forced to drive at slower speeds (less than 10 miles per hour) due to road conditions, steepness of the road, and safety concerns, which provide both the driver and animal a longer reaction time to avoid conflict.

Staging of equipment and the stockpiling of construction materials within the staging area may attract a fox by creating potential denning areas within and between materials and equipment. This could create situations where a fox could become entrapped or ensnared resulting in either harm or loss of an individual(s). To minimize this potential to the greatest extent possible, prior to the start of each working day, the staging area would be thoroughly inspected to ensure no foxes have taken refuge within the stockpiled materials or equipment. If a fox is found and does not leave on its own accord, NPS biologists would be informed and the fox would be removed in a manner determined by the biologist that would cause the least amount of harm and stress to the animal.

During all demolition/construction and operation activities, the NPS would employ mitigation measures to ensure the protection of its natural and biological resources, as well as mitigation that specifically addresses the island fox. For example, if an individual(s) is observed within the immediate vicinity of the pier, park staff would stop the operation of the pier until park biologists can determine whether it is a transient, or if there is an active den in the area. If an active den is discovered near the pier, NPS would determine the potential impacts that could occur from the attendant human activity. Mitigation measures would then be developed to best avoid or minimize impacts that could occur from human / island fox conflict. Mitigation measures could include, but are not limited to, restricting park operations or visitor use within the active den area or relocating individuals to more remote areas of the island. In addition by keeping all garbage covered and contained, and enforcing the “no feeding of wildlife” rules, foxes would not be attracted to areas of human activity and overall impacts would be minimized to the greatest extent possible.

As a result of the current habitat conditions in areas within the immediate vicinity of the pier, the demolition/construction activities proposed under this alternative, the use of vehicles that support pier operations, and mitigation measures aimed at minimizing impacts to the island fox and other wildlife, long-term minor adverse impacts could occur to the island fox from the maintenance and operation of the pier at Bechers Bay.

Cumulative Impacts. Actions associated with the future rehabilitation and/or conversion of some of the ranch buildings could result in adverse impacts to the Santa Rosa Island fox from potential conflicts resulting from attendant human activities. During these activities, however, the NPS would employ mitigation measures to ensure the protection of its natural and biological resources, as well as mitigation that specifically addresses the island fox. As a result, long-term minor adverse impacts to the Santa Rosa Island fox could occur. These future impacts, in combination with the long-term minor adverse impacts

associated with the Alternative B, could result in long-term minor adverse cumulative impacts to the Santa Rosa Island fox.

Conclusion. Implementation of the Alternative B would result in long-term minor adverse impacts to the federally endangered Santa Rosa Island fox as a result of the construction of a new pier and future ongoing operation of the pier. There could also be long-term minor adverse cumulative impacts. No impairment of this special status species would occur under Alternative B.

Impacts of Alternative C – Rehabilitation of Existing Pier

Analysis. Alternative C would retain the existing pier structure, but existing pier pilings would be replaced and new landing platforms would be added on either side of the pier. Like Alternative B, activities directly associated with the rehabilitation of the current pier and its future operation would not likely result in the harm or inadvertent loss of an individual(s) or its habitat for the following reasons:

- Demolition and construction activities and operation of the pier are isolated to the pier and the service road leading to the pier;
- Neither the pier nor the road provides attractive island fox habitat;
- Neither the pier nor road present situations where a fox could become trapped or ensnared (i.e., exposed PVC pipe); and,
- Injury or mortality to the island fox due to vehicular conflicts would not likely occur.

Staging of equipment and the stockpiling of construction materials within the staging area may attract island foxes by creating potential denning areas within and between materials and equipment. This could create situations where a fox could become entrapped or ensnared resulting in either harm or loss of an individual(s). To minimize this potential to the greatest extent possible, prior to the start of each working day, the staging area would be thoroughly inspected to ensure no foxes have taken refuge within the stockpiled materials or equipment. If a fox is found and does not leave on its own accord, NPS biologists would be informed and the fox would be removed in a manner determined by the biologist that would cause the least amount of harm and stress to the animal.

During all rehabilitation and operation activities, the NPS would employ mitigation measures to ensure the protection of its natural and biological resources, as well as mitigation that specifically addresses the island fox. For example, if an individual(s) is observed within the immediate vicinity of the pier, park staff would stop the operation of the pier until park biologists can determine whether it is a transient, or if there is an active den in the area. If an active den is discovered near the pier, the NPS would determine the potential impacts that could occur from the attendant human activity. Mitigation would then be developed to best avoid or minimize impacts that could occur from human / island fox conflict. Mitigation measures could include, but are not limited to, restricting park operations or visitor use within the active den area or relocating individuals to more remote areas of the island. In addition, by keeping all garbage covered and contained and enforcing the “no feeding of wildlife” rules, foxes would not be attracted to areas of human activity and overall impacts would be minimized to the greatest extent possible.

As a result of the current habitat conditions in areas within the immediate vicinity of the pier, the demolition/construction activities proposed under this alternative, the use of vehicles that support pier operations, and mitigation measures aimed at minimizing impacts to the island fox and other wildlife, long-term minor adverse impacts could occur to the island fox from the maintenance and operation of pier at Bechers Bay.

Cumulative Impacts. Actions associated with the future rehabilitation and/or conversion of some of the ranch buildings could result in adverse impacts to the Santa Rosa Island fox from potential conflicts resulting from attendant human activities. However, during these activities, the NPS would employ mitigation measures to ensure the protection of its natural and biological resources, as well as mitigation

measures that specifically address the island fox. As a result, long-term minor adverse impacts to the island fox could occur. These future impacts, in combination with the long-term minor adverse impacts associated with Alternative C, could result in long-term minor adverse cumulative impacts to the Santa Rosa Island fox.

Conclusion. Implementation of Alternative C would result in long-term minor adverse impacts to the federally endangered Santa Rosa Island fox as a result of the rehabilitation of the existing pier and future ongoing operation of the pier. Long-term minor adverse cumulative impacts could also occur. No impairment of this special status species would occur under Alternative C.

Impacts of Alternative D – New Pier on Adjacent Alignment

Analysis. Similar to Alternative B, Alternative D would involve the construction of a new pier at Bechers Bay that would be properly designed and engineered to correct current safety deficiencies of the existing pier. Under this alternative, the new pier would utilize the same design as outlined under Alternative B However, the new pier would be built southeast of and parallel to the existing structure to allow the existing pier to remain in service during construction. The pier would be accessed from shore at the same point as Alternative B with only minor alterations to the cliff-face to account for the new alignment.

Like Alternative B, activities directly associated with the demolition or the current pier and construction and operation of new pier would not likely result in the harm or inadvertent loss of an individual(s) or its habitat, for the following reasons:

- Demolition/construction activities and operation of the pier are isolated to the pier and the service road leading to the pier;
- Neither the pier nor the road provides attractive island fox habitat;
- Neither the pier nor road present situations where a fox could become trapped or ensnared (i.e. exposed PVC pipe); and,
- Injury or mortality to the island fox due to vehicular conflicts would not likely occur.

Staging of equipment and the stockpiling of construction materials within the staging area may attract a fox by creating potential denning areas within and between materials and equipment. This could create situations where a fox could become entrapped or ensnared resulting in either harm or loss of an individual(s). To minimize this potential to the greatest extent possible, prior to the start of each working day, the staging area would be thoroughly inspected to ensure no foxes have taken refuge within the stockpiled materials or equipment. If a fox is found and does not leave on its own accord, NPS biologists would be informed and the fox would be removed in a manner determined by the biologist that would cause the least amount of harm and stress to the animal.

During all demolition/construction and operation activities, the NPS would employ mitigation measures to ensure the protection of its natural and biological resources, as well as mitigation that specifically addresses the island fox. For example, if an individual(s) is observed within the immediate vicinity of the pier, park staff would stop the operation of the pier until park biologists can determine whether it is a transient, or if there is an active den in the area. If an active den is discovered near the pier, the NPS would determine the potential impacts that could occur from the attendant human activity. Mitigation measures would then be developed to best avoid or minimize impacts that could occur from human / island fox conflict. These measures could include, but are not limited to, restricting park operations or visitor use within the active den area or relocating individuals to more remote areas of the island. In addition by keeping all garbage covered and contained, and enforcing the “no feeding of wildlife” rules, foxes would not be attracted to areas of human activity and overall impacts would be minimized to the greatest extent possible.

As a result of the current habitat conditions in areas within the immediate vicinity of the pier, the demolition/construction activities proposed under this alternative, the use of vehicles that support pier

operations, and mitigation measures aimed at minimizing impacts to the island fox and other wildlife, long-term minor adverse impacts could occur to the island fox from the maintenance and operation of pier at Bechers Bay.

Cumulative Impacts. Actions associated with the future rehabilitation and/or conversion of some of the ranch buildings could result in adverse impacts to the island fox from potential conflicts resulting from attendant human activities. During these activities, however, the NPS would employ mitigation measures to ensure the protection of its natural and biological resources, as well as mitigation that specifically addresses the island fox. As a result, long-term minor adverse impacts to the Santa Rosa Island fox could occur. These future impacts, in combination with the long-term minor adverse impacts associated with the Alternative D, could result in long-term minor adverse cumulative impacts to the Santa Rosa Island fox.

Conclusion. Implementation of Alternative D would result in long-term minor adverse impacts to the federally endangered Santa Rosa Island fox as a result of the construction of a new pier and future ongoing operation of the pier. Long-term minor adverse cumulative impacts could also occur. No impairment of this special status species would occur under Alternative D.

CULTURAL LANDSCAPES / HISTORIC STRUCTURES AND DISTRICTS

Guiding Regulations and Policies

Federal actions that have the potential to affect cultural resources are subject to a variety of laws. The National Historic Preservation Act of 1966, as amended, is the principal legislative authority for managing cultural resources associated with NPS projects. Generally, Section 106 of the NHPA requires all federal agencies to consider the effects of their actions on cultural resources listed and/or determined eligible for listing in the National Register of Historic Places (National Register). Such resources are termed “historic properties.” In addition, the NHPA requires that federal agencies take actions to minimize harm to historic properties that would be adversely affected by a federal undertaking. Among other things, Section 110 of the NHPA also charges federal agencies with the responsibility for establishing preservation programs for the identification, evaluation, and nomination of historic properties to the National Register.

Other important laws and regulations designed to protect cultural resources are:

- Native American Graves Protection and Repatriation Act, 1990
- American Indian Religious Freedom Act, 1978
- National Environmental Policy Act, 1969
- Archeological Resources Protection Act, 1979

In addition, the NPS is charged with the protection and management of cultural resources in its custody. This is furthered through the implementation of *Directors Order 28, Cultural Resources Management Guidelines* (NPS 1998), NPS *Management Policies 2006* (NPS 2006a), and the 1995 Service-wide Programmatic Agreement with the Advisory Council and the National Conference of State Historic Preservation Officers. These documents charge NPS managers with avoiding, or minimizing to the greatest degree practicable, adverse impacts on park resources and values. Although the NPS has the discretion to allow certain impacts in parks, that discretion is limited by the statutory requirement that park resources and values remain unimpaired, unless a specific law directly provides otherwise.

Methodology and Assumptions

In this environmental assessment (EA), impacts to cultural resources are described in terms of type, context, duration, and intensity, which is consistent with the regulations of the CEQ that implement NEPA. These impact analyses are intended, however, to comply with the requirements of both NEPA and Section 106 of the NHPA. In accordance with the Advisory Council on Historic Preservation’s

regulations implementing Section 106 of the NHPA (36 CFR Part 800, Protection of Historic Properties), impacts to cultural resources were also identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in, or eligible to be listed in, the National Register of Historic Places; (3) applying the criteria of adverse effect to affected, National Register eligible or listed cultural resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under NEPA, minor adverse impact would be disturbance of a cultural resource or site(s) that results in little, if any, loss of integrity. Moderate adverse impact would be disturbance of a resource or site(s) that results in loss of integrity. Major adverse impact would also be disturbance of a resource or site(s) that results in loss of integrity. Under the Advisory Council's regulations, a determination of either adverse effect or no adverse effect must also be made for affected National Register listed or eligible cultural resources. An adverse effect occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register, e.g., diminishing the integrity (or the extent to which a resource retains its historic appearance) of its location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR Part 800.5, Assessment of Adverse Effects). A determination of no adverse effect means there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the National Register.

CEQ regulations and *Director's Order 12, NPS Conservation Planning, Environmental Impact Analysis and Decision Making* also call for a discussion of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g., reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under NEPA only. It does not suggest that the level of effect as defined by Section 106 is similarly reduced. Cultural resources are non-renewable resources and adverse effects generally consume, diminish, or destroy the original historic materials or form, resulting in a loss in the integrity of the resource that can never be recovered. Therefore, although actions determined to have an adverse effect under Section 106 may be mitigated, the effect remains adverse. A Section 106 summary is included at the end of the impact analysis sections. The Section 106 summary is an assessment of the effect of the undertaking (implementation of the alternative) on National Register eligible or listed cultural resources only, based upon the criterion of effect and criteria of adverse effect found in the Advisory Council's regulations.

Study Area

The area of potential effects (APE) for cultural landscapes and historic structures and districts is considered to be Santa Rosa Island, specifically, the east shore surrounding Bechers Bay.

Impact Thresholds (combined for cultural landscapes and historic structures and districts)

Negligible – Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 would be *no adverse effect.*

Minor – Adverse impact – alteration of a landscape pattern(s) or historic feature(s) would not diminish the overall integrity of the landscape or resource. The determination of effect for Section 106 would be *no adverse effect*.

Moderate – Adverse impact – alteration of a landscape pattern(s) or historic feature(s) would diminish the overall integrity of the landscape or resource. The determination of effect for Section 106 would be *adverse effect*. A memorandum of agreement is executed among the NPS and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR Part 800.6(b). Measures identified in the

memorandum of agreement to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate.

Major – Adverse impact – alteration of a landscape pattern(s) or historic feature(s) would diminish the overall integrity of the resource. The determination of effect for Section 106 would be *adverse effect*. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR Part 800.6(b).

Duration – All impacts to cultural resources are considered long-term.

The following analysis for Alternatives A (No Action), B (NPS preferred alternative), C, and D identifies impacts to cultural landscapes/ historic structures and districts for the purpose of analysis under NEPA. A finding of effect under Section 106 of the NHPA follows this analysis in a separate Section 106 summary at the conclusion of the NEPA analysis.

Impacts of Alternative A – No Action Alternative

Analysis. No replacement pier would be constructed under this alternative. The existing pier would remain in place. However, structural elements would need to be replaced over time and there would be some changes to the pier as a non-contributing feature of the Santa Rosa Island Ranching Historic District. Therefore, Alternative A would result in negligible impacts to the cultural landscape, historic structures, or the Santa Rosa Island Ranching Historic District within the project area, and current conditions would remain.

Cumulative Impacts. Actions associated with past and future preservation, rehabilitation and/or conversion of some of the ranch buildings have resulted in long-term minor to moderate beneficial impacts on cultural landscapes, historic structures, and districts. The negligible impacts of the no action alternative (Alternative A) would not contribute to the overall long-term minor to moderate beneficial cumulative impacts to these resources.

Conclusion. Implementation of Alternative A would have a negligible impact on cultural landscapes, historic structures, and districts and would not contribute to the overall beneficial impacts to cultural landscapes and historic district. There would be no impairment of these resources.

Impacts of Alternative B – New Pier on Existing Alignment (NPS Preferred)

Analysis. Under Alternative B, the existing pier would be removed and a new pier would be constructed on the same alignment. The height of the pier would be raised to 23 feet above MLLW. Construction-related activities including use of heavy equipment and machinery, stock-piling of materials at staging areas, housing construction crews on-site in ranch structures, trailers, or crew boats would have short-term minor adverse impacts on the cultural landscape.

The design of the new pier, which is higher than the existing pier and has landing platforms, would have minor adverse impacts to the cultural landscape. The historic approach to the pier would not be altered. The feeling and association of the new pier would reflect its NPS operations and visitor access functions rather than its historic ranching functions. However, the NPS would replace the pier with a structure that is sympathetic with the materials and construction in the historic district. Removal of the A-frame and cattle chute and changes in the pier alignment would contribute to the minor adverse impacts to the cultural landscape. The NPS would mitigate these adverse impacts by documenting the existing pier, by using round wrapped pilings, and using wood deck and railings where possible. The NPS would retain and interpret historic items from the pier (e.g., the A-frame and cattle chute).

Cumulative Impacts. Past activities to stabilize structures within the historic ranching district and foreseeable future actions to rehabilitate and/or adaptively re-use structures in the Santa Rosa Island Ranching District have resulted in long-term minor to moderate beneficial impacts on cultural landscapes,

historic structures, and districts. The minor adverse impacts to cultural landscapes anticipated from the implementation of Alternative B would add a minor adverse incremental impact which would reduce the overall beneficial cumulative impacts on cultural landscapes.

Conclusion. Implementation of Alternative B would have long-term minor adverse impacts on cultural landscapes and would contribute a minor adverse incremental impact that would reduce the overall beneficial impacts to cultural landscapes. There would be no impairment of these resources.

Impacts of Alternative C – Rehabilitation of Existing Pier

Analysis. Under Alternative C, as much of the existing pier would be reused as possible. This alternative would retain the existing structure instead of constructing a new pier. The height of the pier would remain at 16 feet above MLLW. The existing timber deck would be removed during construction and replaced after installation of new steel pilings. Existing pile caps would be reused. And as with Alternative B, activities that may result in ground disturbance include loading and unloading of construction materials and equipment; staging areas and stockpiling of materials and equipment; heavy vehicle use in the construction area; and use of heavy equipment to remove the existing pier pilings and install new pilings in the sea floor. In addition, it may be necessary to regrade the existing road to the pier. These construction activities have the potential to disrupt the existing cultural landscape by bringing in elements not conducive to the ranching character of the island. Construction-related activities including use of heavy equipment and machinery, stock-piling of materials at staging areas, and housing construction crews on-site in ranch structures, trailers, or crew boats would have short-term minor adverse impacts on the cultural landscape.

Alternative C would re-use as much of the existing pier as possible and would retain the current height of the existing pier, which would keep the feeling of the pier intact. However, as in Alternative B, the function of the pier would change from a ranching context to a NPS visitor access and park operations function; therefore, the pier's association with its ranching history would be altered. In addition, removing the A-frame and cattle chute would have long-term minor adverse impacts to the cultural landscape because it would alter the historic approach to and appearance of the pier. The NPS would mitigate the adverse impacts of this alternative by documenting the pier and retaining and interpreting historic items from the pier, e.g., the A-frame and cattle chute.

Cumulative Impacts. Past activities to stabilize structures within the historic ranching district and foreseeable future actions to rehabilitate and/or adaptively re-use structures in the Santa Rosa Island Ranching District have resulted in long-term minor to moderate beneficial impacts on cultural landscapes, historic structures, and districts. The minor adverse impacts to cultural landscapes and historic district anticipated from the implementation of Alternative C would add a minor adverse incremental impact which would reduce the overall beneficial cumulative impacts on these resources.

Conclusion. Implementation of Alternative C would have long-term minor adverse impacts on cultural landscapes and would contribute a minor adverse incremental impact that would reduce the overall beneficial impacts to cultural landscapes. There would be no impairment of these resources.

Impacts of Alternative D – New Pier on Adjacent Alignment

Analysis. As in Alternatives B and C, construction related activities including use of heavy equipment and machinery, stock-piling of materials at staging areas, housing construction crews on-site in ranch structures, trailers, or crew boats would have short-term minor adverse impacts on the cultural landscape.

Under this alternative, a new pier would be constructed adjacent to the existing pier and the existing pier would be removed. Activities that may result in ground disturbance include loading and unloading of construction materials and equipment; staging areas and stockpiling of materials and equipment; heavy vehicle use in the construction area; and use of heavy equipment to remove the existing pier pilings and install new pilings in the sea floor. In addition, it would be necessary to regrade the existing road to the pier. A new cut of 10 to 20 feet would need to be made into the rock abutment to accommodate the new

alignment of the pier. Removing the existing pier, building a new pier on a different alignment, grading a new pier access road, removing the A-frame and cattle chute, and making a new cut in the sandstone bluff would have long-term moderate adverse impact on the cultural landscape of the Santa Rosa Island Ranching District. The spatial relationship of the new pier to the landscape would be altered and the feeling and association of the ranching pier would be entirely lost. The historic appearance of the pier would be changed. As in Alternatives B and C, the function of the pier would change from a ranching context to a NPS visitor access and park operations function. The NPS would mitigate the moderate adverse impact of implementing Alternative D by documenting the existing pier and retaining and interpreting historic components, e.g., the cattle chute and A-frame.

Cumulative Impacts. Past activities to stabilize structures within the historic ranching district and foreseeable future actions to rehabilitate and/or adaptively re-use structures in the Santa Rosa Island Ranching District have resulted in long-term minor to moderate beneficial impacts on cultural landscapes and historic district. The moderate adverse impacts to cultural landscapes and historic district anticipated from the implementation of Alternative D would add a moderate adverse incremental impact which would reduce the overall beneficial cumulative impacts on these resources.

Conclusion. Implementation of Alternative D would have a long-term moderate adverse impact on cultural landscapes/historic structures and districts and would contribute a moderate adverse incremental impact, which would reduce the overall beneficial cumulative impacts on cultural landscapes, historic structures, and districts. There would be no impairment of these resources.

ASSESSMENT OF EFFECT UNDER SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

The NPS initiated consultation with the California SHPO and the Santa Ynez Chumash Tribe in May 2006 and will accept public comment on the proposed undertaking and effects to historic properties during the period this environmental document is on public review.

An assessment of effect describing the APE, identifying historic properties within the APE, and applying the criteria of adverse effect will be prepared. Adverse effects include, but are not limited to: 1) physical destruction of or damage to all or part of the property; 2) alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access that is not consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68) and applicable guidelines; 3) removal of the property from its historic location; 4) change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance; 5) introduction of visual, atmospheric, or audible elements that diminish the property's significant historic features; 6) neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and, 7) transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance. Adverse effects also include any reasonably foreseeable effects caused by the proposed project that may occur later in time, be further removed in distance, or be cumulative.

After applying the criteria of adverse effect, the NPS finds that implementation of either Alternative B (the NPS preferred alternative) or Alternative C would result in a *no adverse effect* finding. Implementation of Alternative D would result in an *adverse effect* finding. The NPS will continue to consult with the SHPO regarding the *no adverse effect* determination that would result from implementation of the NPS preferred Alternative B (the undertaking).

VISITOR USE AND EXPERIENCE

Methodology and Assumptions

NPS *Management Policies 2006* state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks. Because many forms of recreation can take place outside a national park setting, the NPS will seek to:

- provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in a particular unit
- defer to local, state, and other federal agencies, private industry, and non-governmental organizations to meet the broader spectrum of recreational needs and demands that are not dependent on a national park setting

Unless mandated by statute, the NPS will not allow visitors to conduct activities that:

- would impair park resources or values,
- would create an unsafe or unhealthful environment for other visitors or employees,
- are contrary to the purposes for which the park was established, or
- would unreasonably interfere with the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park; NPS interpretive, visitor service, administrative, or other activities; NPS concessionaire or contractor operations or services; or other existing, appropriate park uses.

Part of the purpose of a park is to offer opportunities for recreation, education, inspiration, and enjoyment. A park's significance lies in the resources that visitors enjoy. According to the Channel Islands National Park Strategic Plan for 1995-2002, one of the park's mission goals is to ensure that "Visitors and employees are provided with a safe and enjoyable, accessible park experience" (NPS 2000b).

The purpose of this impact analysis was to determine if the alternatives are compatible or in conflict with the purpose of the park, its visitor experience goals, and the direction provided by NPS *Management Policies 2006*. Because the pier project is a replacement in-kind, it is not expected that the replacement would increase visitation to Santa Rosa Island.

Study Area

The geographic study area for visitor experience is the NPS administered boundaries of Santa Rosa Island.

Impact Thresholds

The following thresholds were defined:

Negligible – Visitors would likely be unaware of impacts associated with implementation of the alternative. There would be no noticeable change in visitor use and experience or in any defined indicators of visitor satisfaction or behavior.

Minor – Changes in visitor use and/or experience would be slight and detectable, but would not appreciably limit or enhance critical characteristics of the visitor experience. Visitor satisfaction would remain stable.

Moderate – A few critical characteristics of the desired visitor experience would change. The number of participants engaging in a specified activity would be altered. Some visitors who desire their continued use and enjoyment of the activity / visitor experience might be required to

pursue their choices in other areas within the park. Visitor satisfaction would begin to either decline or increase.

Major – Multiple critical characteristics of the desired visitor experience would change and/or the number of participants engaging in an activity would be greatly reduced or increased. Visitors who desire their continued use and enjoyment of the activity / visitor experience would be required to pursue their choices in other available regional areas outside the park. Visitor satisfaction would markedly decline or increase.

Duration – Short-term impacts would occur during part or all of alternative implementation (construction), but would not exceed one year. Long-term impacts would extend beyond implementation of the alternative and persist beyond one year.

Impacts of Alternative A – No Action Alternative

Analysis. In this alternative, ongoing maintenance and service repairs to the pier would continue; however, the structural and height issues related to the pier that adversely impact visitor safety and satisfaction would remain the same. Visitors who access Santa Rosa Island via a concessionaire boat would have to continue to scale the 10-foot vertical ladder from the boat to the pier. This vertical climb would continue to be challenging to all visitors, but particularly the elderly and those with some physical challenges. The existing pier deck elevation (16 feet over MLLW) that is only partially sheltered from the open ocean would continue to intermittently expose visitors to major waves and ocean surges. Mobility-impaired visitors would continue to have to access the island via aircraft, a more expensive option over boat access; although, the existing deck could be adapted to meet Americans with Disabilities Act (ADA) requirements. These continued accessibility issues would result in long-term minor adverse impacts to the average visitor and long-term moderate adverse impacts to mobility-impaired visitors, including the elderly. Should a major failure of the pier occur preventing use of the pier, impacts to all visitor populations would be long-term moderate and adverse because access to the island would be limited to aircraft or via skiff from a tour boat.

During routine maintenance operations, access to the pier for concessionaire boats could be interrupted or restricted for short periods of time. However, impacts to both visitors and concessionaries would be short-term and minor due to the opportunities for visitors to visit other islands within the park and for park concessionaires to provide skiffs from their boats to the island shore for these limited periods.

The park's special use permittee, Vail & Vickers, Ltd., would continue to have unrestricted access to the pier for hunters if their existing permit is extended, resulting in negligible to no impacts to these visitors.

Cumulative Impacts. Pier repair activities have resulted in short-term minor to moderate adverse impacts to visitors and concessionaires because of repeated pier closures for emergency repairs over the past 5 years. These past impacts, in combination with the likelihood of continued pier closures due to future repairs that may be required under the no action alternative, could result in long-term moderate adverse cumulative impacts to visitor use and experience. Visitors are more likely to be deterred from future visits to Santa Rosa Island if access is uncertain.

Conclusion. Maintenance of the existing pier would result in long-term minor and moderate adverse impacts to the average visitor and mobility-impaired visitors, respectively, because the ladder access from boat to pier would remain challenging. Should the pier fail at some point, impacts to all visitors would be long-term moderate and adverse because access would be limited to air or from a boat offshore. Access to the island for visitors and concessionaires would be restricted occasionally for pier repairs resulting in short-term minor adverse impacts. Cumulative impacts would be long-term and moderate adverse due to the past and most likely future pier repairs that might be required.

Impacts of Alternative B – New Pier on Existing Alignment (NPS Preferred)

Analysis. Construction of a new pier in the existing pier location would prevent concessionaire, visitor, and the permittee access to the island via the pier while the pier is removed and reconstructed, and result in other short-term disturbances related to construction activities, such as noise during pile driving. Boats would not be allowed to use the pier to disembark visitors throughout the construction period. If ocean conditions allowed, concessionaires could approach the island and use skiffs to transport passengers from their boats to the island. Air travel to the island would also remain an option.

It is estimated that up to two construction seasons, each extending throughout the summer and fall months, would be required to construct the new pier, when visitor use is greatest on the island. However, the unavailability of the pier during this period would result in only short-term minor adverse impacts to visitor use and experience because skiff access would still be available. Additionally, annual use to Santa Rosa Island is a small percentage of the park's island visitation and similar boating, viewing, and other recreational activities are available on other Channel Islands for those desiring easy island access. Approximately 1,000 visitors or about 3% of the approximately 30,000 visitors that travel to the islands visit Santa Rosa Island annually. Additionally, many areas of the island are closed to visitors during the fall hunting season (beginning mid-August through December); thus, any visitor use impacts would occur primarily from May to August. Hunters accessing the island for the trophy hunt of deer and elk in the fall could most likely pay for the cost of air transport given the overall cost of the hunt. Impacts to concession revenues would be short-term and negligible because of visitor opportunities on other islands and the option to use skiffs.

Once the new pier is constructed on the existing alignment, a variety of new features including new landing platforms, stair access to the pier, a pier personnel crane and ADA-compliant deck, and the addition of fenders would allow visitors to safely and easily disembark from concessionaire and other boats. Additionally, the new pier would be 23 feet in elevation over MLLW, an increase in 7 feet over the existing deck elevation. The higher deck would serve to protect visitors from ocean waves and storm surges during rough weather. These features would allow visitors to disembark onto platforms and walk up stairs between the platforms and the pier deck, rather than climb vertically up a ladder. This improvement in ease of access for all visitors, including the mobility-impaired, as well as the long-term prevention of pier failure, would result in long-term moderate beneficial impacts to both visitors and concessionaires by increasing visitor satisfaction on Santa Rosa Island and by helping meet the park's mission goal to provide a safe and enjoyable, accessible park experience. Improved access for visitors and greater ease in off-loading supplies to the new pier would also benefit the operations of the existing permittee if their permit was extended beyond 2008.

Following pier replacement, maintenance activities on the new pier would be limited in comparison to the no action alternative and would result in far fewer interruptions to visitor access and concession services resulting in long-term moderate beneficial impacts. Less maintenance and improved access could result in increased visitor use to the island and increased concession revenues, as well as provide for new concession opportunities if deemed appropriate by the park.

Cumulative Impacts. Pier repair activities have resulted in short-term minor to moderate adverse impacts to visitors and concessionaires because of repeated pier closures for emergency repairs that restricted visitor access intermittently over the past 5 years. Conversely, future rehabilitation of some of the ranch buildings could improve visitor opportunities on the island, possibly attracting some new visitors, and resulting in long-term minor beneficial impacts. These adverse and beneficial impacts, when combined with the long-term moderate beneficial impacts associated with the new pier in Alternative B, would result in long-term moderate beneficial cumulative impacts because the new pier would allow for ongoing and uninterrupted visitor access to the island.

Conclusion. Construction of a new pier would prevent access to the island via the pier for two construction seasons in summer and fall months, resulting in short-term minor adverse impacts to visitors

during construction activities. Once pier construction was complete, the increased pier height, new landing platforms, stair access, pier personnel crane, and new fenders would increase visitor satisfaction and result in long-term moderate beneficial impacts to both visitors and concessionaires at Santa Rosa Island. The reduced need for pier repair and maintenance activities would minimize future interruptions to concession services, resulting in additional moderate beneficial impacts to visitors and concessionaires. Consistent visitor access would result in long-term moderate beneficial cumulative impacts.

Impacts of Alternative C – Rehabilitation of Existing Pier

Analysis. Rehabilitation of the existing pier would prevent concessionaire, visitor, and the permittee access to the island via the pier while the pier is removed and reconstructed, and result in other short-term disturbances related to construction activities, such as noise during pile driving. Boats would not be allowed to use the pier to disembark visitors throughout the construction period. If ocean conditions allowed, concessionaires could approach the island and use skiffs to transport passengers from their boats to the island. Air travel to the island would also remain an option.

It is estimated that up to two construction seasons, each extending throughout the summer and fall months, would be required to construct the new pier, when visitor use is greatest on the island. The unavailability of the pier during this period would result in only short-term minor adverse impacts to visitor use and experience because skiff access would be available and because similar boating, viewing, and other recreational activities are available on other Channel Islands. Approximately 1,000 visitors or about 3% of the approximately 30,000 visitors that travel to the islands visit Santa Rosa Island annually; thus, this small percentage of use could be accommodated elsewhere. Additionally, many areas of the island are closed to visitors during the fall hunting season (beginning mid-August through December); thus, any visitor use impacts would occur primarily from May to August. Hunters accessing the island for the trophy hunt of deer and elk in the fall could most likely pay for the cost of air transport given the overall cost of the hunt. Impacts to concession revenues would be short-term and negligible because of visitor opportunities on other islands and the option to use skiffs.

Once the new pier is rehabilitated, the addition of new landing platforms, stair access to the pier deck, and the pier personnel crane would allow visitors to either disembark onto a platform and walk up the stairs to the pier, rather than climbing vertically up a ladder, or be lifted onto the pier deck. The deck would also be ADA-compliant providing for easy walking or wheelchair access. However, the rehabilitated pier would remain at the existing 16-foot elevation over MLLW and continue to provide some limited potential for visitors to experience large ocean waves and storm surges as they load or unload (some restrictions exist – see “Health and Safety” impacts). The addition of the landing platforms, stairs, and crane would result in long-term moderate beneficial impacts to both visitors and concessionaires by increasing visitor satisfaction on Santa Rosa Island and helping to meet the park’s mission goal to provide a safe and enjoyable, accessible park experience. Improved visitor access and greater ease in off-loading supplies to the new pier would also benefit the operations of the existing permittee if their permit was extended beyond 2008.

Maintenance activities to complete repairs on the rehabilitated pier would continue into the future, but would not occur as frequently as under the no action alternative. The need for pier repairs, such as deck replacement, could intermittently affect visitor use resulting in long-term minor adverse impacts to visitors and concessionaires.

Cumulative Impacts. Pier repair activities have resulted in short-term minor to moderate adverse impacts to visitors and concessionaires because of repeated pier closures for emergency repairs that restricted visitor access intermittently over the past 5 years. Conversely, future rehabilitation of some of the ranch buildings could improve visitor opportunities on the island, possibly attracting some new visitors, and resulting in long-term minor beneficial impacts. These adverse and beneficial impacts, when combined with the long-term moderate beneficial impacts associated with the rehabilitated pier in Alternative C,

would result in long-term minor beneficial cumulative impacts because the rehabilitated pier and ranch building would allow for improved and consistent visitor access and visitor opportunities on the island.

Conclusion. Rehabilitation of the existing pier would prevent access to the pier during construction resulting in short-term minor adverse impacts to visitors. Although the rehabilitated pier would remain the same height as the existing pier and cause some limited visitor exposure to ocean waves, the new landing platforms and stair access would increase visitor satisfaction and result in long-term moderate beneficial impacts to both visitors and concessionaires. Ongoing pier maintenance activities would continue to occur occasionally, resulting in potential long-term minor adverse impacts to visitor use and concessionaires. Improved consistent access could result in long-term minor beneficial cumulative impacts.

Impacts of Alternative D – New Pier on Adjacent Alignment

Analysis. Construction of a new pier adjacent to the existing pier would allow for continued visitor access during the two-season construction period; thus, there would be no short-term impacts to visitor use or concession and permittee operations, other than some minor adverse impacts related to construction noise.

Once the new pier is constructed on the adjacent alignment, a variety of new features including new landing platforms, stair access to the pier, and the addition of fenders would allow visitors to safely and easily disembark from concessionaire and other boats. Additionally, the new pier would be 23 feet in elevation over MLLW, an increase in 7 feet over the existing deck elevation. The higher deck would be ADA-compliant and serve to protect visitors from ocean waves and storm surges during rough weather. These features would allow visitors to disembark onto platforms and walk up stairs between the platforms and the pier deck, rather than climbing vertically up a ladder. This improvement in ease of access, as well as the long-term prevention of pier failure, would increase visitor satisfaction on Santa Rosa Island, help meet the park's mission goal to provide a safe and enjoyable, accessible park experience, and result in long-term moderate beneficial impacts to both visitors and concessionaires. Improved access for visitors and greater ease in off-loading supplies to the new pier would also benefit the operations of the existing permittee if their permit was extended beyond 2008.

Following pier construction and removal of the existing pier, maintenance activities on the new pier would be much less frequent in comparison to the no action alternative resulting in long-term moderate beneficial impacts because of far fewer interruptions to visitor access and concession services. Less maintenance and improved access could result in increased visitor use to the island and increased concession revenues, as well as provide for new concession opportunities if deemed appropriate by the park.

Cumulative Impacts. Pier repair activities have resulted in short-term minor to moderate adverse impacts to visitors and concessionaires because of repeated pier closures for emergency repairs that restricted visitor access intermittently over the past 5 years. Conversely, future rehabilitation of some of the ranch buildings could improve visitor opportunities on the island, possibly attracting some new visitors, and resulting in long-term minor beneficial impacts. These adverse and beneficial impacts, when combined with Alternative D, would result in long-term moderate beneficial cumulative impacts to visitor use and experience because the new pier would provide uninterrupted, continued visitor access into the future.

Conclusion. Construction of a new pier adjacent to the existing pier would allow for ongoing visitor access while the new pier is constructed. Once completed and the old pier is demolished, the increased pier height, new landing platforms, stair access, pier personnel crane, and new fenders would improve visitor satisfaction and result in long-term moderate beneficial impacts to both visitors and concessionaires at Santa Rosa Island. The reduced need for pier repair and maintenance activities would minimize future interruptions to concession services, resulting in additional moderate beneficial impacts to visitors and concessionaires. Consistent visitor access would result in long-term moderate beneficial cumulative impacts.

HEALTH AND SAFETY

Methodology and Assumptions

Impacts to visitor and staff health and safety were determined qualitatively based on the features of the existing and proposed pier located within Bechers Bay on Santa Rosa Island and the information discussed in the Value Analysis and Choosing-by-Advantages Workshop conducted by the NPS in April 2006 regarding the proposed pier.

Study Area

The study area for visitor health and safety is the area encompassing the pier on Santa Rosa Island.

Impact Thresholds

The impact intensities for health and safety were defined as follows:

Negligible – The impact to health and safety would not be measurable or perceptible.

Minor – The impacts would be detectable but would not have an appreciable effect on overall public health and safety. Individuals could be affected in a localized area. If mitigation were needed, it would be relatively simple and would likely be successful.

Moderate – The impacts would be readily apparent and result in substantial, noticeable effects to public health and safety on a local scale. Mitigation measures would probably be necessary and would likely be successful.

Major – The impacts would be readily apparent and result in substantial, noticeable effects to public health and safety on a regional scale. Extensive mitigation measures would be needed, and success would not be guaranteed.

Duration – Short-term impacts would occur during part or all of alternative implementation (construction), but would not exceed one year. Long-term impacts would extend beyond implementation of the alternative and persist beyond one year.

Impacts of Alternative A – No Action Alternative

Analysis. Under the no action alternative, the current configuration of the pier would remain unchanged, and regular maintenance and monitoring would continue to keep the pier operational for as long as possible. Because the pier at Bechers Bay was never properly engineered, and many of the components of the pier are in an advanced stage of deterioration, the chances are likely that another catastrophic failure of the pier could occur, like the one that occurred in 2002. If such an event were to occur while park staff or visitors were on or near the pier, the chances for severe injury or even death would be great. However, because park staff regularly monitor the condition of the pier, and would close the pier immediately if there were any indications that the pier was structurally unsound and unsafe for use, the chances for personal injuries would be minimized. As a result, the overall adverse impacts to the safety of park staff and visitors would be long-term and minor.

The current height of the pier (16 feet above the MLLW) sits below the highest predicted storm surge. While rare, waves have been known to wash over the pier. To date there have been no injuries; however, someone standing on the pier could be knocked down or washed over the side if a wave reached the height of the pier. In the event that storm surges of this magnitude were to occur, NPS staff would likely close the pier for safety reasons to both park staff and visitors, greatly decreasing the likelihood of injury. The wheel load runners that run the entire length of the pier would continue to pose a tripping hazard for those people working and walking on the pier, especially for those people with limited mobility and older visitors. Tripping and falling onto the hard surface of the pier could cause minor cuts and scrape, bruises, and possibly sprains or broken bones. These safety issues would continue to result in long-term minor adverse impacts to park staff and visitors.

The current configuration of the pier head, where cargo is loaded and off-loaded, does not allow for sufficient room to operate the crane in the safest manner possible. There is limited space where the crane can be positioned and effectively used that avoids the obstructions caused by the original ramp, hoist, and support cables that are still in place. If the crane came into contact with one of these obstructions, the injury potential to either the crane operator or people on the pier or boat deck from falling or swinging cargo or possibly from the crane rolling over. However, because the NPS follows strict safety protocols in the loading and off-loading of cargo (i.e., weight limits, weather conditions, minimizing people within the work zone, and only allowing trained and experienced park staff to operate the crane), adverse impacts to the safety of park staff and visitors would be considered long-term and minor.

Both park staff and visitors are required to climb up or down an 8- to 15-foot ladder (depending on the tide) to access the pier from a docked boat or vice versa. Climbing this ladder is inherently dangerous. A wet ladder, movement of the boat, and people physically unable to climb could result in people falling into either the water (drowning hazard) or onto the deck of the boat. Crushing injuries could also occur from people getting their hands of feet caught between the ladder or piling and the docked boat. To minimize the possibilities of ladder related accidents, visitors disembarking concessionaires' boats are generally provided instructions to safely use the ladder and spotters are stationed at the bottom of the ladders to provide assistance in case anyone has difficulty using the ladder. In addition, park policies prohibit non-park personnel from using the pier to disembark the boat if seas are greater than 1 foot. The continued use of the ladder to access the pier from a docked boat or vice versa would result in long-term minor adverse impacts to park staff and visitor safety.

If a catastrophic event occurred to the pier leaving it unusable, the park would use its landing craft to transport cargo and vehicles to and from the island for the daily management of the island. There are inherent risks in the operation of the landing craft. As the landing craft nears the beach, the bow of the boat is lowered, creating a ramp into shallow water. It is at this point where vehicles off-load, and cargo is transferred by hand to the beach, or vice versa. Although training would occur, disembarking the boat or transferring cargo poses risks to safety as park staff are required to walk down the ramp, which could be moving as a result of wave action, and wade through shallow water to the shore. The ramp is made out of non-slip grated steel, which has been known to cause people to trip, resulting superficial injuries such as bruises, cuts, and abrasions. During this period when the pier is closed for use, the daily use of this craft would increase the potential for these injuries to occur. This increased use in the landing craft would result in short-term minor adverse impacts to the overall safety of park staff.

Cumulative Impacts. Past pier failures have not impacted visitor and staff health and safety; therefore, these past events would not contribute to cumulative impacts. However, the future rehabilitation and/or conversion of some of the ranch buildings would necessitate the short-term increase of pier use by park staff as construction materials and personnel are brought to the island and debris is removed. After the rehabilitation efforts are completed, some increase in visitor use could result from upgraded facilities and additional interpretation. A short-term increase in pier use and long-term increase in visitor use could increase the potential for accidents and result in long-term negligible adverse impacts to park staff and visitor safety. These impacts, in combination with the long-term minor adverse impacts associated with the no action alternative, would result in long-term minor adverse cumulative impacts to park staff and visitor safety.

Conclusion. Implementation of the no action alternative would result in long-term minor adverse impacts to health and safety as a result of the continued safety deficiencies of the pier. Long-term minor adverse cumulative impacts could result from the short-term increase in pier use and long-term increase in visitor use that could result from the future rehabilitation and/or conversion of some of the ranch buildings.

Impacts of Alternative B – New Pier on Existing Alignment (NPS Preferred)

Analysis. In Alternative B, the existing pier at Bechers Bay would be removed and replaced with a properly designed and engineered pier. The new pier would be designed and constructed to correct several of the safety deficiencies of the existing pier, including the following:

- The ability to withstand industrial loads, eliminating the need for wheel load runners, and creating a flat deck.
- An extension inward towards the cliff of an additional 10 feet or the construction of a small headwall to address the abutment deterioration that is currently taking place.
- Construction with all new materials and the replacement of all existing piles with new protective coated steel piles of larger diameter.
- Provision of 100-foot fender pile along the north side of the pier, 20-foot fender pile along the end of the pier, and a 50-foot fender area on the south side of the pier to help protect both the pier and boats against damage in case of inadvertent collision.

Because the new pier would be properly engineered and constructed from new and more durable materials, the potential for a catastrophic failure of the new pier would be greatly reduced. In addition, by engineering the deck to withstand the weight of industrial loads, the need for wheel load runners would be eliminated, which would do away with the current tripping hazards and create an ADA-compliant deck. The height of the pier under this alternative would be raised from 16 feet above MLLW to a height of approximately 23 feet above MLLW. At this height, the pier would be out of the expected storm surge, and the danger of someone being knocked down or washed over the side from a wave would be eliminated. And, finally, the new access platforms would allow park staff and visitors to safely access the pier directly by stepping off the boat directly on to one of the platform and accessing the pier via a protected staircase rather than climbing a ladder. As a result of these improvements, long-term minor beneficial impacts to park staff and visitor safety would be expected.

The end of the pier, where loading and unloading occurs, would be widened from 40 to 50 feet and the original ramp, hoist, and support cables would be removed from the pier. The expanded pier head and the removal of obstructions would allow for more space to position and to safely operate the park's mobile crane, which would result in long-term minor beneficial impacts to the overall safety of park staff.

Access for limited mobility individuals would be provided by a pier personnel crane that would lift the visitor from the concessionaire boat in a lifting basket to the pier. While there is the possibility for accidents to occur, the crane would be operated by a certified mobile crane operator in a slow and controlled manner that would minimize the risks to the park visitor. Apart from the crane operator, there would also be at least two other people helping guide the lifting basket to and from the pier. There would be only short-term negligible adverse impacts to visitor safety; however, this access alternative for the mobility-impaired would be much safer than the stairs in this alternative or the vertical ladder in the no action alternative, resulting in long-term moderate beneficial impacts for these visitors.

During the time period when the pier is closed to the public for construction, all visitors would either access the island via skiffs or flown into the island's airstrip, and NPS cargo would be transported via the park's landing craft. Skiffs would be the primary means of transporting visitors to and from the island. Beaching a small skiff through the surf could be hazardous, depending upon the weather conditions. Heavy surf could capsize a skiff full of park visitors resulting in injuries or drowning. Wet exits from the skiff and transporting personnel gear to and from the boat could also result in injuries ranging from cuts and bruises to twisted ankles. While concessionaires do currently use skiffs to transport park visitors to Santa Rosa Island, utilizing skiffs on a day-to-day basis during construction to access the island would increase the likelihood of injury, and could result in short-term minor adverse impacts to visitor safety. Some training would occur to minimize these potential safety risks.

The park currently uses its landing craft to transport cargo and vehicles to and from the island; however, during the period of construction when the pier is closed for use, the landing craft would be utilized for the day-to-day management of the island. There are inherent risks in the operation of the landing craft. As the landing craft nears the beach, the bow of the boat is lowered, creating a ramp into shallow water. It is at this point where vehicles are off-loaded, and cargo is transferred by hand to the beach, or vice versa. Disembarking the boat or transferring cargo poses risks to safety as park staff are required to walk down the ramp, which could be moving as a result of wave action, and wade through shallow water to the shore. The ramp is made out of non-slip grated steel, which has been known to cause people to trip, resulting superficial injuries such as bruises, cuts, and abrasions. During the period of construction when the pier is closed for use, the daily use of this craft could increase the potential for these injuries to occur, which could result in short-term minor adverse impacts to the overall safety of park staff. Some training would occur to minimize these potential safety risks.

Cumulative Impacts. Past pier failures have not impacted visitor and staff health and safety; therefore, these past events would not contribute to cumulative impacts. However, the future rehabilitation and/or conversion of some of the ranch buildings would necessitate the short-term increase of pier use by park staff as construction materials and personnel are brought to the island and debris is removed. After the rehabilitation efforts are completed, some increase in visitor use could result from upgraded facilities and additional interpretation. A short-term increase in pier use and long-term increase in visitor use could increase the potential for accidents and result in long-term negligible adverse impacts to park staff and visitor safety. These impacts, in combination with the long-term minor and moderate beneficial impacts and short-term minor adverse impacts associated with Alternative B, would result in long-term minor beneficial cumulative impacts to park staff and visitor safety.

Conclusion. Implementation of Alternative B would result in long-term minor beneficial impacts to health and safety from the correction of existing pier deficiencies which would improve park staff and visitor safety and decrease the potential for accidents. However, long-term moderate beneficial impacts would occur from transporting mobility limited people to and from the pier via crane. Short-term minor adverse impacts would occur during the construction of the pier as park visitors are required to access the island via skiffs and park staff would be required to use its landing craft for day-to-day operations. Long-term minor beneficial cumulative impacts could result from the conversion of some of the ranch buildings.

Impacts of Alternative C – Rehabilitation of Existing Pier

Analysis. The rehabilitation of the existing pier at Bechers Bay would occur in this alternative. The rehabilitated pier would be constructed to correct several of the safety deficiencies of the existing pier, including the following:

- Retention of the existing pier structure instead of constructing a new pier.
- Replacement of all existing piles with new protective coated steel piles of greater diameter and reuse of existing pile caps.
- Replacement of the existing timber deck after installation of the new piles.
- An extension inward towards the cliff of an additional 10 feet or the construction of a small headwall to address the abutment deterioration that is currently taking place.
- Replacement of the existing fender piles and the addition of new fender piles on the east side.

Because the rehabilitated pier would be rebuilt with new and more durable materials, the potential for a catastrophic failure of the new pier would be reduced, resulting in long-term minor beneficial impacts to park staff and visitor safety.

The pier would retain its current length of 574 feet and the existing pier deck elevation of 16 feet above MLLW. Because this current pier height would continue to sit below the highest predicted storm surges,

some safety issues would continue to exist. While rare, waves have been known to wash over the pier. To date there have been no injuries, but someone standing on the pier could be knocked down or washed over the side if a wave reached the height of the pier. However, in the event that storm surges of this magnitude were to occur, NPS staff would likely close the pier for safety reasons to both park staff and visitors, greatly decreasing the likelihood of injury. The use of wheel load runners proposed under this alternative would pose a tripping hazard for those people working and walking on the pier, especially for those people with limited mobility and older visitors. Tripping and falling onto the hard surface of the pier could cause minor cuts and scrapes, bruises, and possibly sprains or broken bones. These safety issues would continue to result in long-term minor adverse impacts to the safety of park staff and visitors similar to the no action alternative.

The head of the pier under this alternative would remain the same as the current configuration. There is limited space where the crane can be positioned and effectively used that avoids the obstructions caused by the original ramp, hoist, and support cables. If the crane came into contact with one of these obstructions, the potential for injury exists for the crane operator or people on the pier or boat deck from falling or swinging cargo or possibly from the crane rolling over. However, because the NPS follows strict safety protocols in the loading and off-loading of cargo and only allows trained and experienced park staff to operate the crane, adverse impacts to the safety of park staff and visitors would be considered long-term and minor.

The pier would be retrofitted with four access platforms: two on each side with the lower of the two platforms located closer to the shore. These platforms would allow park staff and visitors to safely access the pier directly by stepping off the boat directly on to one of the platform and accessing the pier via a protected staircase rather than climbing a ladder. As a result of these improvements, long-term minor beneficial impacts to park staff and visitor safety would be expected.

Access for limited mobility individuals would be provided by a pier personnel crane that would lift the visitor from the concessionaire boat in a lifting basket to the pier. While there is the possibility for accidents to occur, the crane would be operated by a certified mobile crane operator in a slow and controlled manner that would minimize the risks to the park visitor. Apart from the crane operator, there would also be at least two other people helping guide the lifting basket to and from the pier. There would be only short-term negligible adverse impacts to visitor safety; however, this access alternative for the mobility-impaired would be much safer than the stairs in this alternative or the vertical ladder in the no action alternative, resulting in long-term moderate beneficial impacts for these visitors.

During the time period when the pier is being rehabilitated and closed to the public, all visitors would either access the island via skiffs or flown into the island's airstrip, and NPS cargo would be transported via the park's landing craft. Skiffs would be the primary means of transporting visitors to and from the island. Beaching a small skiff through the surf could be hazardous, depending upon the weather conditions. Heavy surf could capsize a skiff full of park visitors resulting in injuries or drowning. Wet exits from the skiff and transporting personnel gear to and from the boat could also result in injuries. Some training would occur to minimize these potential safety risks.

While the park uses its landing craft to transport cargo and vehicles to and from the island, during the period of construction when the pier is closed for use, the landing craft would have to be utilized for the day-to-day management of the island. There are inherent risks in the operation of the landing craft. As the landing craft nears the beach, the bow of the boat is lowered, creating a ramp into shallow water. It is at this point where vehicles off-load, and cargo is transferred by hand to the beach, or vice versa. Disembarking the boat or transferring cargo poses risks to safety as park staff are required to walk down the ramp, which could be moving as a result of wave action, and wade through shallow water to the shore. The ramp is made out of non-slip grated steel, which has been known to cause people to trip, resulting superficial injuries such as bruises, cuts, and abrasions. During the period of construction when the pier is closed for use, the daily use of this craft would increase the potential for these injuries to occur. This

increased use in the landing craft would result in short-term minor adverse impacts to the overall safety of park staff, although some training would occur to minimize these risks.

Cumulative Impacts. Past pier failures have not impacted visitor and staff health and safety; therefore, these past events would not contribute to cumulative impacts. However, the future rehabilitation and/or conversion of some of the ranch buildings would necessitate the short-term increase of pier use by park staff as construction materials and personnel are brought to the island and debris is removed. After the rehabilitation efforts are completed, some increase in visitor use could result from upgraded facilities and additional interpretation. A short-term increase in pier use and long-term increase in visitor use could increase the potential for accidents and result in long-term negligible adverse impacts to park staff and visitor safety. These impacts, in combination with the long-term minor and moderate beneficial impacts and short-term minor adverse impacts associated with the Alternative C, would result in long-term minor beneficial cumulative impacts to park staff and visitor safety.

Conclusion. Implementation of Alternative C would result in long-term minor beneficial impacts to health and safety from the correction of existing pier deficiencies, which would improve park staff and visitor safety and decrease the potential for accidents. However, long-term moderate beneficial impacts would occur from transporting mobility limited people to and from the pier via crane. Long-term minor adverse impacts would result because the height of the pier would remain below the highest predicted storm surge. Short-term minor adverse impacts would occur during the construction of the pier as park visitors are required to access the island via skiffs and park staff is required to use the landing craft for day-to-day operations. Long-term minor beneficial cumulative impacts could result to park staff and visitor safety.

Impacts of Alternative D – New Pier on Adjacent Alignment

Analysis Alternative D, like Alternative B, would involve the construction of a new pier at Bechers Bay that would be properly designed and engineered to correct current safety deficiencies of the existing pier. Under this alternative, the new pier would utilize the same design as outlined under Alternative B However, the new pier would be built southeast of and parallel to the existing structure to allow the existing pier to remain in service during construction. Once construction was complete, the old pier would be removed. Safety improvements would include:

- The ability to withstand industrial loads, eliminating the need for wheel load runners, and creating a flat deck.
- An extension inward towards the cliff of an additional 10 feet or the construction of a small headwall to address the abutment deterioration that is currently taking place.
- Construction with all new materials and the replacement of all existing piles with new protective coated steel piles of larger diameter.
- Provision of 100-foot fender pile along the north side of the pier, 20-foot fender pile along the end of the pier, and a 50-foot fender area on the south side of the pier to help protect both the pier and boats against damage in case of inadvertent collision.

Because the new pier would be properly engineered and constructed from new and more durable materials, the potential for a catastrophic failure of the new pier would be greatly reduced. In addition, by engineering the deck to withstand the weight of industrial loads, the need for wheel load runners would be eliminated, which would do away with the current tripping hazards and create an ADA-compliant deck. The height of the pier under this alternative would be raised from 16 feet above MLLW to a height of approximately 23 feet above MLLW. At this height, the pier would be out of the expected storm surge, and the danger of someone being knocked down or washed over the side from a wave would be eliminated. And, finally, the new access platforms would allow park staff and visitors to safely access the pier directly by stepping off the boat directly on to one of the platform and accessing the pier via a

protected staircase rather than climbing a ladder. As a result of these improvements, long-term minor beneficial impacts to park staff and visitor safety would be expected.

The end of the pier, where loading and unloading occurs, would be widened from 40 to 50 feet and the original ramp, hoist, and support cables would not be replaced. The expanded pier head and the removal of obstructions would allow for more space to position and to safely operate the park's mobile crane, which would result in long-term minor beneficial impacts to the overall safety of park staff.

Access for limited mobility individuals would be provided by a pier personnel crane that would lift the visitor from the concessionaire boat in a lifting basket to the pier. While there is the possibility for accidents to occur, the crane would be operated by a certified mobile crane operator in a slow and controlled manner that would minimize the risks to the park visitor. Apart from the crane operator, there would also be at least two other people helping guide the lifting basket to and from the pier. As a result of the safety precautions taken, there would be only short-term negligible adverse impacts to visitor safety.

Because the pier proposed under this alternative would be constructed along a different alignment, the current pier would remain operational during the most of construction phase of the project. Keeping the pier operational reduces the need for park staff and visitors to access the island via either skiff or landing craft and reduces the added potential for injuries.

Cumulative Impacts. Past pier failures have not impacted visitor and staff health and safety; therefore, these past events would not contribute to cumulative impacts. However, the future rehabilitation and/or conversion of some of the ranch buildings would necessitate the short-term increase of pier use by park staff as construction materials and personnel are brought to the island and debris is removed. After the rehabilitation efforts are completed, some increase in visitor use could result from upgraded facilities and additional interpretation. A short-term increase in pier use and long-term increase in visitor use could increase the potential for accidents and result in long-term negligible adverse impacts to park staff and visitor safety. These impacts, in combination with the long-term minor and moderate beneficial impacts and short-term minor adverse impacts associated with Alternative D, would result in long-term minor beneficial cumulative impacts to park staff and visitor safety.

Conclusion. Implementation of Alternative D would result in long-term minor beneficial impacts to health and safety from the correction of existing pier deficiencies which would improve park staff and visitor safety and decrease the potential for accidents. However, long-term moderate beneficial impacts would occur from transporting mobility limited people to and from the pier via crane. Long-term minor beneficial cumulative impacts could result to park staff and visitor safety.

PARK OPERATIONS AND MANAGEMENT

Channel Islands National Park is responsible for administering the staff that performs all of the day-to-day operations and maintenance required to manage Santa Rosa Island as noted in the "Purpose of and Need for Action" chapter.

Study Area

The geographic study area for park operations and management is Channel Islands National Park.

Impact Thresholds

The impact intensities for health and safety were defined as follows:

> *Negligible* – Park operations would not be impacted, or the impacts would be at low levels of detection and would not have an appreciable effect on park operations.
>
> *Minor* – The impact would be detectable and would be of a magnitude that would not have an appreciable effect on park operations. If mitigation was needed to offset adverse effects, it would be simple and likely successful.

Moderate – The impacts would be readily apparent and result in a substantial change in park operations in a manner noticeable to staff and the public. Mitigation measures would be necessary to offset adverse effects and would likely be successful.

Major – The effects would be readily apparent, result in a substantial change in park operation in a manner noticeable to staff and the public, and be markedly different from existing operations. Mitigation measures to offset adverse effects would be needed, extensive, and success could not be guaranteed.

Duration – Short-term impacts would occur during part or all of alternative implementation (construction), but would not exceed one year. Long-term impacts would extend beyond implementation of the alternative and persist beyond one year.

Impacts of Alternative A – No Action Alternative

Analysis. Under the no action alternative, the current configuration of the pier would remain unchanged, and regular maintenance and monitoring would continue to keep the pier operational for as long as possible. Due to the deteriorating condition of the pier, future maintenance requirements would likely increase, creating a change in park operations (increased pier maintenance and repair work) that would be noticeable to park staff. This increase in noticeable work would result in long-term minor adverse impacts to park operations and management throughout the park, as manpower and funds are drawn away from other areas of the park to support the maintenance of the pier at Santa Rosa Island.

The current configuration of the pier head, where cargo is loaded and off-loaded, does not allow for sufficient room to efficiently operate the park's mobile crane unit. There is limited space where the crane can be positioned and effectively used that avoids the obstructions caused by the original ramp, hoist, and support cables. However, because the NPS has been operating the crane in this manner for many years, and only allows trained and experienced park staff to operate the crane, adverse impacts to park operations and management would be considered long-term and negligible.

In the event that maintenance and repairs cannot keep the pier safe and functional for park staff and visitor use, or the pier is forced to close as a result of a catastrophic failure, access to island would be via the park's landing craft, skiffs launched either from NPS or concessionaire boats, or chartered flights. While the park does from time to time use its landing craft to transport cargo to and from the island, it is most efficiently used when transferring equipment that can drive off the back of the boat and onto the beach (i.e., vehicles, earth moving machinery). Transporting smaller items (i.e., food, totes of gasoline, garbage, personal supplies, and LP gas) is inefficient because the cargo has to be transferred in smaller bundles by hand, rather than using park vehicles and the crane to transport these items in larger bundles.

The use of the concessionaires' boats to transport park staff back and forth from the island via skiff is a possibility; however, the trips would cost the NPS between $60 and $80 dollars per person per trip, and the park would be required to follow the concessionaire's travel schedules. Transfer of cargo would be limited to the personnel gear of park staff and relatively small cargo loads (i.e., food and other supplies). Large cargo loads such as totes of gasoline and construction supplies would not be shipped via a concessionaire.

The use of chartered flights for the management needs of the island would be cost prohibitive. The expense of transferring fuels, garbage dumpsters, supplies, and personal gear from the mainland would be prohibitive. The estimated deployment of cargo aircraft would cost well over $5,000 per week in addition to actual costs for flight time. In addition to cargo flights, passenger-only flights would have to be chartered. The current National Business Center Aviation Management (NBC-AM) aircraft can carry up to 40,000 pounds of cargo and 46 passengers per trip. Direct costs to the park per person for this aircraft service are $450 per trip. Costs for an 8-passenger round trip chartered flight from the mainland to Santa Rosa Island range from $700 to $1,200.

If the current pier cannot be kept functional, alternate means of transportation to and from the island would have to be arranged in order for the necessary management needs of the island maintained and to keep park facilities functioning properly. The resultant long-term adverse impacts that would occur to park operations that would occur if the pier was no longer functional would be moderate.

Cumulative Impacts. The replacement of all the piles supporting the Santa Rosa Island pier occurred in response to the degrading condition of the existing piles and as a temporary means to extend the service life of the pier until a more permanent solution could be enacted. This work had noticeable short-term effects on the park staff responsible for the installation of the piles and also on the operational resources of the park, resulting in short-term minor adverse impacts to park operations and management. However, these actions also resulted in long-term, minor beneficial impacts to park operations and management as the service life of the current pier was extended an additional 5 to 10 years.

Future rehabilitation of some of the ranch buildings would necessitate short-term increase of pier use by park staff as construction materials and needed staff are brought to the island and debris is removed. After the rehabilitation efforts are completed, an increase in visitor use could result as facilities are upgraded and interpretation increased. The potential increase in pier and overall visitor use would have noticeable effects on park staff resulting in long-term minor adverse impacts on park operations and management.

These impacts, in combination with the long-term negligible to moderate adverse impacts associated with the no action alternative, would result in long-term minor to moderate adverse cumulative impacts to park operation and management.

Conclusion. Implementation of the no action alternative would result in long-term negligible to moderate adverse impacts to park operations and management as a result of the current configuration of the pier head, increased future pier maintenance, and the potential need for alternate means of transportation to and from the island if the pier becomes unserviceable. Long-term minor to moderate adverse cumulative impacts to park management and operations would occur due to ongoing maintenance repair activities on the pier.

Impacts of Alternative B – New Pier on Existing Alignment (NPS Preferred)

Analysis. As described in the "Health and Safety" section for Alternative B above, many of the existing pier safety and design deficiencies would be addressed in Alternative B through a properly engineered design and the use of new and more durable materials. This construction would result in a pier with a minimum 25-year life prior to the need for significant maintenance operations. Thus, the need for regular maintenance would be greatly reduced and the potential for a catastrophic failure of the new pier would be all but eliminated, resulting in long-term moderate beneficial impacts to park operations and maintenance.

Additional features such as new fender piles on the north and south sides of the pier, as well as on the end would help protect both the pier and boats against damage in case of inadvertent collision. The addition of four platforms – two platforms on each side of the pier connected by stairs – would also improve ease of access for NPS staff. The end of the pier, where loading and unloading occurs, would be widened from 40 to 50 feet and the original ramp, hoist, and support cables would be removed. The expanded pier head and the removal of obstructions would create more room to safely operate the park's mobile crane and increase the usable area for efficient transfer of cargo from either side of the pier. These improvements would have long-term minor beneficial impacts to park operations and management.

During construction, when the pier is closed, park staff and cargo would be transported via the park's landing craft. While the park uses its landing craft to transport cargo and vehicles to and from the island, during the period of construction when the pier is closed for use, the landing craft would have to be utilized for the day-to-day management of the island. Transporting cargo is more efficient when transferring equipment that can be driven off the back of the boat and onto the beach (i.e., vehicles, earth moving machinery). Transporting smaller items (i.e., food, totes of gasoline, garbage, personal supplies,

and LP gas) is inefficient because everything has to be transferred in smaller bundles by hand, rather than using park vehicles and the crane to transport these items in larger bundles. During the period of construction when the pier is closed for use, the regular use of the landing craft would result in short-term minor adverse impacts to park operations and management through the increased burden imposed on the park staff through the inefficient transfer of cargo.

Cumulative Impacts. The replacement of all the piles supporting the Santa Rosa Island pier had noticeable short-term effects on the park staff responsible for the installation of the piles and also on the operational resources of the park, resulting in short-term minor adverse impacts to park operations and management. However, these actions also resulted in long-term minor beneficial impacts to park operations and management as the service life of the current pier was extended an additional 5 to 10 years.

Future rehabilitation of some of the ranch buildings would necessitate short-term increase of pier use by park staff as construction materials and needed staff are brought to the island, and debris removed. After the rehabilitation efforts are completed an increase in visitor use could result as facilities are upgraded and interpretation increased. The potential increase in pier and overall visitor use would have noticeable effects on park staff resulting in long-term minor adverse impacts on park operations and management.

These impacts, in combination with the long-term minor to moderate beneficial impacts and short-term minor adverse impacts associated with Alternative B, would result in long-term minor to moderate beneficial cumulative impacts to park operation and management.

Conclusion. Implementation of Alternative B would result in long-term minor to moderate beneficial impacts by reducing pier maintenance requirements, greatly reducing the potential for a catastrophic pier failure, and improving access for staff. Long-term minor beneficial impacts would also occur by expanding the pier head and removing the current obstructions, resulting in a more efficient transfer of cargo. Short-term minor adverse impacts would occur during construction when the pier is closed for use and park staff and cargo is transported via the park's landing craft. Cumulative impacts would be long-term minor to moderate beneficial because pier maintenance would be minimal.

Impacts of Alternative C – Rehabilitation of Existing Pier

Analysis. Several of the existing pier safety and design deficiencies would be addressed in Alternative C because the existing pier would be rehabilitated, including replacement of the existing piles, extension of the pier inwards towards the cliff or construction of an abutment for erosion, new fender piles, and replacement of the timber deck. Because the rehabilitated pier would be rebuilt with new and more durable materials, the need for regular maintenance would be minimized and the potential for a catastrophic failure of the new pier would be reduced, long-term minor beneficial impacts would result to park operations and management. Although the pier would retain the existing deck elevation of 16 feet above MLLW, four access platforms would be constructed – two new platforms and stairs on each side of the pier – to improve access for visitors on the pier's south side and for NPS staff to load and unload personnel and small supplies on the north side of the pier. This access improvement for park staff would also result in long-term minor beneficial impacts.

The current configuration of the pier head, where cargo is loaded and off-loaded, does not allow for sufficient room to efficiently operate the park's mobile crane unit. There is limited space where the crane can be positioned and effectively used that avoids the obstructions caused by the original ramp, hoist, and support cables. However, because the NPS has been operating the crane in this manner for many years, and only allows trained and experienced park staff to operate the crane, adverse impacts to park operations and management would be considered long-term and negligible.

During construction, when the pier is closed, park staff and cargo would be transported via the park's landing craft. While the park uses its landing craft to transport cargo and vehicles to and from the island, during the period of construction when the pier is closed for use, the landing craft would have to be

utilized for the day-to-day management of the island. Transporting cargo is more efficient when transferring equipment that can be driven off the back of the boat and onto the beach (i.e., vehicles, earth moving machinery). Transporting smaller items (i.e., food, totes of gasoline, garbage, personal supplies, and LP gas) is inefficient because everything has to be transferred in smaller bundles by hand, rather than using park vehicles and the crane to transport these items in larger bundles. During the period of construction when the pier is closed for use, the regular use of the landing craft would result in short-term minor adverse impacts to park operations and management through the increased burden imposed on the park staff through the inefficient transfer of cargo.

Cumulative Impacts. The replacement of all the piles supporting the Santa Rosa Island pier had noticeable short-term effects on the park staff responsible for the installation of the piles and also on the operational resources of the park, resulting in short-term minor adverse impacts to park operations and management. However, these actions also resulted in long-term minor beneficial impacts to park operations and management as the service life of the current pier was extended an additional 5 to 10 years.

Future rehabilitation of some of the ranch buildings would necessitate short-term increase of pier use by park staff as construction materials and needed staff are brought to the island, and debris removed. After the rehabilitation efforts are completed an increase in visitor use could result as facilities are upgraded and interpretation increased. The potential increase in pier and overall visitor use would have noticeable effects on park staff resulting in long-term minor adverse impacts on park operations and management.

These impacts, in combination with the long-term minor beneficial impacts and short-term minor adverse impacts associated with Alternative C, would result in long-term minor beneficial cumulative impacts to park operation and management.

Conclusion. Implementation of Alternative C would result in long-term minor beneficial impacts to park operations and management by reducing the overall maintenance requirements of the pier and the potential for a catastrophic failure, as well as improving access for park staff. Short-term minor adverse impacts would occur during the period of construction when the pier is closed for use and park staff and cargo would be transported via the park's landing craft. Cumulative impacts would be long-term and minor beneficial because of the reduced need for ongoing pier maintenance.

Impacts of Alternative D – New Pier on Adjacent Alignment

Analysis. Alternative D, like Alternative B, would involve the construction of a new pier at Bechers Bay that would be properly designed and engineered to correct current deficiencies of the existing pier. Under this alternative, the new pier would utilize the same design as outlined under Alternative B; however, the new pier would be built southeast of and parallel to the existing structure to allow the existing pier to remain in service during construction. Features of the new pier are described in the Alternative D analysis under "Health and Safety" above. Because the new pier would be properly engineered and constructed from new and more durable materials, the need for regular maintenance would be greatly reduced and the potential for a catastrophic failure of the new pier would be all but eliminated, resulting in long-term moderate beneficial impacts to park operations and maintenance.

Additional features such as new fender piles on the north and south sides of the pier, as well as on the end would help protect both the pier and boats against damage in case of inadvertent collision. The addition of four platforms – two platforms on each side of the pier connected by stairs – would also improve ease of access for NPS staff. The end of the pier, where loading and unloading occurs, would be widened from 40 to 50 feet and the original ramp, hoist, and support cables would be removed. The expanded pier head and the removal of obstructions would create more room to safely operate the park's mobile crane and increase the usable area for efficient transfer of cargo from either side of the pier. These improvements would have long-term minor beneficial impacts to park operations and management.

Because the pier proposed under this alternative would be constructed along a different alignment, the current pier would remain operational during the most of construction phase of the project. Keeping the pier operational would reduce the need for park staff and visitors to access the island via either skiff or landing craft, and result in short-term beneficial impact to park operations and management.

Cumulative Impacts. The replacement of all the piles supporting the Santa Rosa Island pier had noticeable short-term effects on the park staff responsible for the installation of the piles and also on the operational resources of the park, resulting in short-term minor adverse impacts to park operations and management. However, these actions also resulted in long-term minor beneficial impacts to park operations and management as the service life of the current pier was extended an additional 5 to 10 years.

Future rehabilitation of some of the ranch buildings would necessitate short-term increase of pier use by park staff as construction materials and needed staff are brought to the island, and debris removed. After the rehabilitation efforts are completed an increase in visitor use could result as facilities are upgraded and interpretation increased. The potential increase in pier and overall visitor use would have noticeable effects on park staff resulting in long-term minor adverse impacts on park operations and management.

These impacts, in combination with the minor to moderate beneficial impacts associated with Alternative D, would result in long-term minor to moderate beneficial cumulative impacts to park operation and management.

Conclusion. Implementation of Alternative D would result in long-term minor to moderate beneficial impacts to park operations and management by reducing maintenance requirements, greatly reducing the potential for a catastrophic pier failure, and improving access for staff. Long-term minor beneficial impacts would also occur by expanding the pier head and removing the current obstructions, which would result in a more efficient transfer of cargo. Short-term minor beneficial impacts would occur as a result of keeping the current pier open for as long as possible during the period of construction of the new pier. Cumulative impacts would be long-term and minor to moderate beneficial because pier maintenance would be minimal.

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CHAPTER 5 – COORDINATION AND CONSULTATION

As noted in Chapter 1 under "Scoping and Issues," an internal scoping meeting was held in March 2006 at the park regarding the replacement and rehabilitation of the pier on Santa Rosa Island. The interdisciplinary team of participants included NPS staff from the Channel Islands National Park, the Denver Service Center, the NPS Pacific West Regional Office, and the URS Corporation. To evaluate potential alternatives and to address the needs of Channel Islands National Park, the participants of the meeting utilized a technique for decision-making called CBA. The park also conducted public scoping during October 2006. Scoping letters were sent on October 3 to approximately 76 parties, including state and federal agencies, private organizations, individuals, and local libraries. The letter was also posted to the Planning, Environment, and Public Comment (PEPC) website at http://parkplanning.nps.gov/CHIS. Responses were requested within 15 days of receipt. Response letters outlined concerns related to visitor loading and unloading on the Santa Rosa Island pier and identified mitigation and permits that may be required to protect state-listed species, air quality, and other coastal resources and to construct structures or work in navigable waters of the U.S.

Coordination with state and federal agencies was conducted during the NEPA process to identify issues and/or concerns related to natural and cultural resources located in and around the site. In accordance with Section 106 of the National Historic Preservation Act of 1966, the park sent a letter to the SHPO at the California Office of Historic Preservation on May 26, 2006. The letter initiated the consultation process and briefly explained the project and is provided in Appendix A. This environmental assessment (EA) will be forwarded to the SHPO as part of the consultation process. This EA includes an Assessment of Effect under Section 106 of the National Historic Preservation Act in the "Environmental Consequences" chapter under "Cultural Landscapes / Historic Structures and Districts."

In accordance with Section 7 of the Endangered Species Act of 1973, a letter was sent by Channel Islands National Park to solicit comments from the USFWS regarding potential occurrences of federally listed species within the project area that could be adversely impacted by the proposed alternatives. A letter was also sent to the NOAA NMFS regarding potential occurrences of federally listed species or habitat. As of the print date of this EA, no return response has been received from the USFWS or NMFS. Letters that were sent to these agencies are provided in Appendix B. The EA will be forwarded to both the USFWS and NMFS for their comments.

Coordination also occurred with the CDFG. The letter of response received from this state agency is provided in Appendix C.

To meet the requirements of the CZMA and the California Coastal Management Program (CCMP), the preferred alternative (proposed pier replacement) was evaluated to determine if the project would have an impact on the California coastal zone. It was concluded that the activity would not cause an effect. Therefore, a negative determination was prepared and submitted to the CCMP Federal Consistency Coordinator for review and concurrence. The NPS would obtain all necessary permits prior to construction. It is anticipated that permits or authorizations from the following agencies may be required for this project: US Army Corps of Engineers, California State Lands Commission, Regional Water Quality Control Board, and Channel Islands National Marine Sanctuary.

This EA will be distributed for public and agency review with a comment period of at least 30 days and will be available via press release, publication on the park's website, and through the NPS public PEPC website (noted above). The NPS will consider the comments prior to drafting a Finding of No Significant Impact (FONSI) or issuing a Notice of Intent to prepare an environmental Impact Statement.

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CHAPTER 8 – GLOSSARY OF TERMS AND ACRONYMS

ADA	Americans with Disabilities Act
APCD	Air Pollution Control District (Santa Barbara, CA)
APE	area of potential effects
BMPs	best management practices
CBA	Choosing By Advantages
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CZMA	Coastal Zone Management Act
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
FONSI	Finding of No Significant Impact
GMP	General Management Plan
MHHW	mean higher high water
MLLW	mean lower low water
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NBC-AM	National Business Center Aviation Management
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic & Atmospheric Administration
NOx	nitrogen oxide
NPOMA	*National Parks Omnibus Management Act of 1998*
NPS	National Park Service
PAH	polycyclic aromatic hydrocarbons
RHA	Rivers and Harbors Act
SHPO	State Historic Preservation Officer
SPLs	Sound Pressure Levels
U.S. EPA	U.S. Environmental Protection Agency
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compounds

Affected Environment — The existing environment to be affected by a proposed action and alternatives.

Anadromous — Fish that live most of their adult life in saltwater but spawn in freshwater.

Anthropogenic — Relating to or resulting from the influence humans have on the natural world.

Best Management Practices (BMP) — Methods that have been determined to be the most effective, practical means of preventing or reducing pollution or other adverse environmental impacts.

Contributing Resource — A building, site, structure, or object that adds to the historic significance of a property or district.

Council on Environmental Quality (CEQ) — Established by Congress within the Executive Office of the President with passage of the *National Environmental Policy Act of 1969*. CEQ coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives.

Cultural Resources — Prehistoric and historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reason.

Cumulative Impacts — Under National Environmental Policy Act regulations, the incremental environmental impact or effect of an action together with the effects of past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions (40 CFR Part 1508.7).

Decibels — A unit of relative sound loudness, electric voltage, or current equal to ten times the common logarithm of the ratio of two readings.

Enabling Legislation — National Park Service legislation setting forth the legal parameters by which each park may operate.

Endangered Species — "…any species (including subspecies or qualifying distinct population segment) that is in danger of extinction throughout all or a significant portion of its range (Endangered Species Act Section 3(6))." The lead federal agency, U.S. Fish and Wildlife Service, for the listing of a species as endangered is responsible for reviewing the status of the species on a five-year basis.

Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.) — An Act to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved and to provide a program for the conservation of such endangered species and threatened species.

Environmental Assessment (EA) — An environmental analysis prepared pursuant to the National Environmental Policy Act to determine whether a Federal action would significantly affect the environment and thus require a more detailed environmental impact statement.

Essential Fish Habitat (EFH) — Habitat for an assemblage of fish species that are treated as a single species complex because of similarities in their life histories or habitat requirements.

Executive Order — Official proclamation issued by the President that may set forth policy or direction or establish specific duties in connection with the execution of federal laws and programs.

Finding of No Significant Impact (FONSI) — A document prepared by a federal agency showing why a proposed action would not have a significant impact on the environment and thus would not require preparation of an Environmental Impact Statement. A FONSI is based on the results of an environmental assessment.

Fender — Any piece of equipment, such as a tire, inflated ball or cylinder, or rope, which, when mounted or inserted between the vessel and another object, will absorb shock and prevent damage or chafing.

Floodplain — The flat or nearly flat land along a river or stream or in a tidal area that is covered by water during a flood.

Groundfish — Fish that live on or near the sea floor.

Mean higher high water level (MHHW) — The high tide line.

National Environmental Policy Act (NEPA) — The Act as amended articulates the federal law that mandates protecting the quality of the human environment. It requires federal agencies to systematically assess the environmental impacts of their proposed activities, programs, and projects including the "no action" alternative of not pursuing the proposed action. NEPA requires agencies to consider alternative ways of accomplishing their missions in ways which are less damaging to the environment.

National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq.) (NHPA) — An Act to establish a program for the preservation of historic properties throughout the nation, and for other purposes, approved October 15, 1966 [Public Law 89-665; 80 STAT. 915; 16 U.S.C. 470 as amended by Public Law 91-243, Public Law 93-54, Public Law 94-422, Public Law 94-458, Public Law 96-199, Public Law 96-244, Public Law 96-515, Public Law 98-483, Public Law 99-514, Public Law 100-127, and Public Law 102-575].

National Register of Historic Places (National Register) — A register of districts, sites, buildings, structures, and objects important in American history, architecture, archaeology, and culture, maintained by the Secretary of the Interior under authority of Section 2(b) of the *Historic Sites Act of 1935* and Section 101(a)(1) of the *National Historic Preservation Act of 1966,* as amended.

Organic Act — Enacted in 1916, this Act commits the National Park Service to making informed decisions that perpetuate the conservation and protection of park resources unimpaired for the benefit and enjoyment of future generations.

Pelagic — Fish species that are in the water column near the surface and not associated with the substrate.

Pile — A wood, metal, or concrete pole driven into the sea bottom that is used to support a pier or a float.

Piling — Support or protection for wharves and piers; constructed of piles.

Pinnipeds — Carnivorous mammals that use flippers for movement on land and in the water.

Root-mean Square (RMS "impulse") **—** Maximum root-mean square sound pressure level measured using the impulse setting of a sound level meter (0.031 to 0.035-second time constant).

RMS "impulse" criterion — Maximum root-mean square sound pressure level measured over the duration of the pulse evaluated.

Scoping — Scoping, as part of the National Environmental Policy Act, requires examining a proposed action and its possible effects; establishing the depth of environmental analysis needed; determining analysis procedures, data needed, and task assignments. The public is encouraged to participate and submit comments on proposed projects during the scoping period.

Wetlands — The U.S. Army Corps of Engineers (Federal Register 1982) and the Environmental Protection Agency (Federal Register 1980) jointly define wetlands as: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

µPascal — A measurement of sound pressure that is usually discuss relative to decibels.

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Appendix A

Coordination with State Historic Preservation Officer

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May 26, 2006

Mr. Milford Wayne Donaldson
State Historic Preservation Officer
Office of Historic Preservation,
Department of Parks & Recreation
P.O. Box 942896
Sacramento, CA 94296-0001

Subject: Compliance with Section 106 of the National Historic Preservation Act and National Environmental Policy Act

Dear Mr. Donaldson:

The National Park Service (NPS) is preparing an Environmental Assessment (EA) to evaluate the potential effects of replacing or rehabilitating a 574-foot pier in Bechers Bay on the north side of Santa Rosa Island, approximately 45 miles west of Ventura, California. Santa Rosa Island is part of Channel Islands National Park. Please refer to the enclosed vicinity map.

The work proposed for the pier, as described below, has the potential to affect properties listed or eligible for listing on the National Register of Historic Places, and therefore is an undertaking requiring review under Section 106 of the National Historic Preservation Act of 1966, as amended. Pursuant to the Advisory Council on Historic Preservation's regulations implementing Section 106, 36 CFR 800, the NPS hereby notifies the State of California Office of Historic Preservation of our desire to consult with you regarding the potential affects of the proposed pier replacement or rehabilitation on any existing or potential historic properties potentially affected by the proposed action. In accordance with 36 CFR Section 800.8(c) of the Advisory Council on Historic Preservation's regulations, *Use of the NEPA Process for Section 106 Purposes,* I am notifying you in advance of the Park's intention to use the EA to meet its obligations under Section 106. The NPS expects to complete a combined EA and Assessment of Effect for public and agency review by August 2006.

The pier at Becher's Bay is included within the Santa Rosa Island Ranching District, which has been determined to be eligible for the National Register of Historic Places. A pier has stood at this location since the early 1870's. Major repairs or reconstruction occurred in 1913 and 1945. The current pier was repaired and rebuilt in 1987, shortly after NPS acquired Santa Rosa Island, to make it safe for park operations and to provide access to the island for visitors, researchers, and NPS employees. NPS reconstruction in 1987 was temporary in nature and not intended to last for more than 20 years. Since the 1987 reconstruction work, the pier has suffered heavy corrosion from the marine environment and deterioration from storms, vehicle operation, and overall use. Emergency repairs were conducted in 2002, 2004 and 2006 due to piling deterioration and collapse.

Currently the pier is the only viable access (by mobile crane) for supplies and materials to support all park operations. It also provides visitor access to the island via concessionaire boat operators for this 54,000-acre island. At present, this pier is servicing approximately 700 vessel landings per year.

The EA will identify a range of four (4) alternatives, including the no action alternative. The current pier is approximately 574 feet long, 20 feet wide for most of its length, and 40 feet wide at the end. It has a wood deck made up of 3x12-inch timbers and is built on both wood and steel pilings. The wood pilings are approximately 12 inches in diameter and covered in creosote to inhibit rotting. These pilings run from the cliff face to the surf zone. The steel pilings are 5 inches in diameter, extend out into the ocean for the remaining length, and are not protected from the elements. The pier sits 16 feet above the Mean Lower Low Water mark (MLLW) and has in the past experienced wave damage.

The three action alternatives would include the following: 1) replacing the pier within its current footprint; 2) rehabilitating the existing pier; and 3) replacing the pier along a new alignment. All three of these action alternatives would result in piers with approximately the same dimensions as the current pier.

The replacement alternative, which is currently the NPS preferred alternative, would involve demolishing the existing pier and recycling the materials at an offsite location. The new pier would be constructed within the same footprint as the existing pier. It would be built entirely on approximately 18-inch corrosion-protected steel pilings, and would be raised to approximately 27 feet above MLLW, elevating the pier above any expected storm surges that could damage the pier decking. The deck of the pier would be made of 4x12-inch timbers or precast concrete. In addition, two sets of landing platforms (with two platforms per set) would be constructed on either side of the pier to ease the transfer of people from boats to the pier and vice versa. The lower platform would be located approximately 8 feet above MLLW, while the upper platform would be located at approximately 11 feet above MLLW. These platforms would be connected to the pier's upper deck by stairs and landings. The NPS is also evaluating options to provide for handicap accessibility.

The alternative that would rehabilitate the existing pier would involve dismantling the current pier and replacing the existing pilings with approximately 18-inch corrosion-protected steel pilings. The pier would be built within the same footprint. Much of the existing materials, such as the deck timbers and existing pile caps, would be reutilized. This alternative would also include installing landing platforms in much the same way as described under the replacement alternative above.

Finally, the alternative that would replace the pier along a new alignment alternative would involve creating a pier with the same specifications as the replacement alternative. However, the new pier would be built parallel to the existing pier, on previously undisturbed ocean bottom, to allow the existing pier to be fully functional for as long as possible.

The Becher's Bay pier was determined to be a non-contributing resource within the Santa Rosa Island Ranching Historic District in the National Register determination of eligibility (DOE) submitted to your office and signed in August, 2004. The draft EA and Assessment of Effect will evaluate how the proposed rehabilitation or replacement of the pier might impact the integrity of the historic district due to the pier's location within the district and adjacent to the ranch complex.

We look forward to working with your office and the public as we proceed with the environmental planning process for this project. If you should have any questions, please contact Ann Huston, Chief of Cultural Resources at (805) 658-5752 or Jane Sikoryak, Denver Service Center Cultural Resource Specialist at (303) 969-2425.

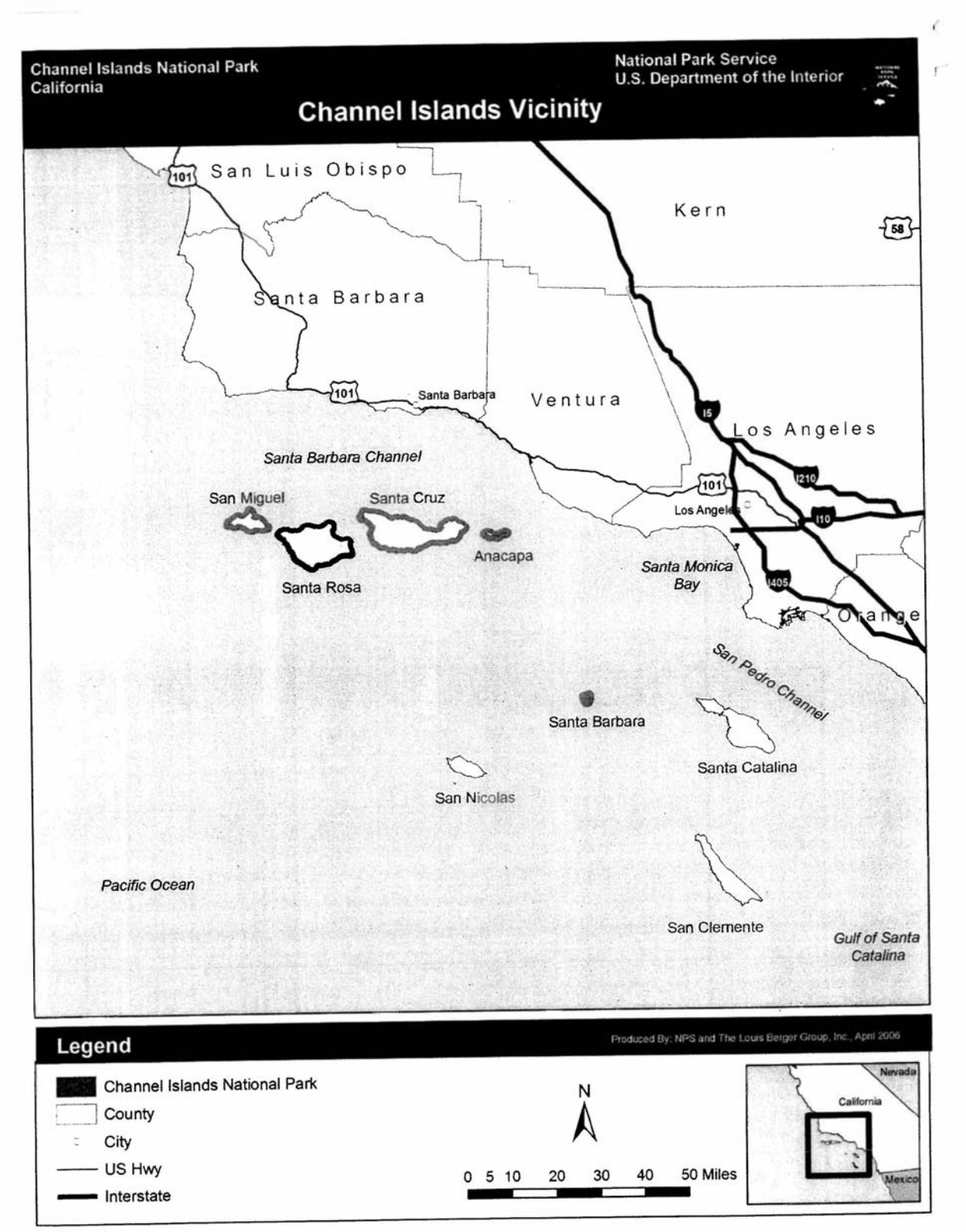
Sincerely,

/s/ Russell Galipeau

Russell E. Galipeau, Jr.
Superintendent

Enclosure

bcc: CHIS-File, DSC – Jane Sikoryak, DSC – Elaine Rideout
CHIS: T. Glass, A. Huston
CHIS:RGALIPEAU:pb:5/26/2006


Channel Islands National Park
California
National Park Service
U.S. Department of the Interior
Channel Islands Vicinity
San Luis Obispo
Kern
Santa Barbara
Ventura
Los Angeles
Orange
Santa Barbara Channel
San Miguel
Santa Cruz
Anacapa
Santa Rosa
Santa Monica Bay
San Pedro Channel
Santa Barbara
Santa Catalina
San Nicolas
San Clemente
Pacific Ocean
Gulf of Santa Catalina
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58
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210
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Legend
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US Hwy
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California
Mexico

Appendix B
Coordination with
U.S. Fish and Wildlife Service
and National Marine Fisheries Service

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RECEIVED
JUN 12 2006
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May 26, 2006

Ms. Diane K. Noda
Field Supervisor
U.S. Fish and Wildlife Service
Ventura Field Office
2493 Portola Road, Suite B
Ventura, CA 93003

Reference: Channel Islands National Park, Santa Rosa Island

Dear Ms. Noda:

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) is preparing an Environmental Assessment (EA) to evaluate the potential effects of replacing or rehabilitating a 574-foot pier in Bechers Bay on the north side of Santa Rosa Island, approximately 45 miles west of Ventura in Santa Barbara County, California. Please refer to the USGS quadrangle titled *Santa Rosa Island North* and the enclosed vicinity map. The purpose of this correspondence is to request a list of any federally listed or proposed threatened or endangered species or critical habitats that might occur in the project vicinity, including any special management considerations for such species, and to solicit any early input or concerns that you may have regarding this proposed action. The known listed species within Channel Islands National Park, including Santa Rosa Island, are identified in the attached table.

The purpose of this project is to replace or rehabilitate the existing pier at Santa Rosa Island in a manner that best serves park operations and provides safe and dry access to the island for park visitors and staff, while preserving the pier's historic character. Currently, the pier is the only viable access (by mobile crane) for supplies and materials to support all park operations. It also provides visitor access to the island via concessionaire boat operators for this 54,000-acre island. Currently, this pier provides for approximately 700 vessel landings per year.

The current pier is approximately 574-feet long, 20-feet wide for its length, and 40-feet wide at the end. It has a wood deck made up of 3x12-inch timbers and is built on both wood and steel pilings. The wood pilings are approximately 12 inches in diameter and covered in creosote to inhibit rotting. These pilings run from the cliff face to the surf zone. The steel pilings are 5-inches in diameter, extend out into the ocean for the remaining length, and are not protected from the elements. The pier sits 16-feet above the Mean Lower Low Water mark (MLLW) and has in the past experienced wave damage.

A range of four (4) alternatives, including the no action alternative, are currently being considered for evaluation in the EA. The three action alternatives would include the following: 1) replacing the pier within its current footprint; 2) rehabilitating the existing pier; and 3) replacing the pier along a new alignment. All three of these action alternatives would result in piers with approximately the same dimensions as the current pier.

The replacement alternative, which is currently the NPS preferred alternative, would involve demolishing the existing pier and recycling the materials at an offsite location. The new pier would be constructed within the same footprint as the existing pier. It would be built entirely on approximately 18-inch corrosion-protected steel pilings, and would be raised to approximately 27-feet above MLLW, elevating the pier above any expected storm surges that could damage the pier decking. The deck of the pier would be made of 4x12-inch timbers or pre-cast concrete. In addition, two sets of landing platforms (with two platforms per set) would be constructed on either side of the pier to ease the transfer of people from boats to the pier and vice versa. The lower platform would be located 8-feet above MLLW, while the upper platform would be located at approximately 11-feet above MLLW. These platforms would be connected to the pier's upper deck by stairs and landings. The NPS is also evaluating options to provide for handicap accessibility.

The rehabilitate the existing pier alternative would involve dismantling the current pier and replacing the existing pilings with approximately18-inch corrosion-protected steel pilings. The pier would be built within the same footprint. Much of the existing materials, such as the deck timbers and existing pile caps, would be reutilized. This alternative would also include installing landing platforms in much the same way as described under the replacement alternative above.

Finally, the alternative that would replace the pier along a new alignment alternative would involve creating a pier with the same specifications as the replacement alternative. However, the new pier would be built parallel to the existing pier, on previously undisturbed ocean bottom, to allow the existing pier to be fully functional for as long as possible.

The project area for this proposed action includes the area used for staging and personnel trailers, the road leading from these areas to the pier, and a 100-foot buffer around the footprint of the current pier and the footprint of the pier proposed under the action alternatives. According to Dan Richards, Marine Biologist for Channel Islands National Park, the ocean bottom where the current pier is located, and the area of the proposed new alignment alternative, is sandy bottom, with no eel-grass bed located within the general vicinity.

For all action alternatives, demolition of the existing pier would occur from the seaward end and work towards shore. Construction would commence from the shore and would continue out to the pier's seaward terminus. Construction and demolition activities would be undertaken from the new and existing pier structure. A 20-ton truck crane is typically used in construction activities such as those being proposed. In addition to the truck crane, other pieces of equipment likely to be used include: a crew boat that transports the crew to and from the island, a boat and barge to haul equipment and materials to and from the island, a pickup truck on the island to transport equipment and demolition material to and from the stockpile area, a compressor, and a generator. Demolition and construction activities are expected to last six to eight months. To account for the abutment deterioration that is currently taking place, the proposed pier design under all action alternatives would either be extended inward towards the cliff an additional 10-feet or a small headwall would be constructed. In addition, for all action alternatives, the staging of materials and construction equipment would be located in a grassy area off of the main road and several camp trailers would be scattered around the ranch complex to house the personnel needed to erect the pier.

We look forward to working with your office and the public as we proceed with the environmental planning process for this project. If you should have any questions, please contact Dan Richards, Marine Biologist at (805) 658-5760 or Elaine Rideout, Denver Service Center Natural Resource Specialist at (303) 969-2260.

Sincerely,

/s/ Russell Galipeau

Russell E. Galipeau, Jr.
Superintendent

Enclosures

bcc: CHIS-File, T Glass, K Faulkner, D Richards
DSC – Jane Sikoryak, Elaine Rideout

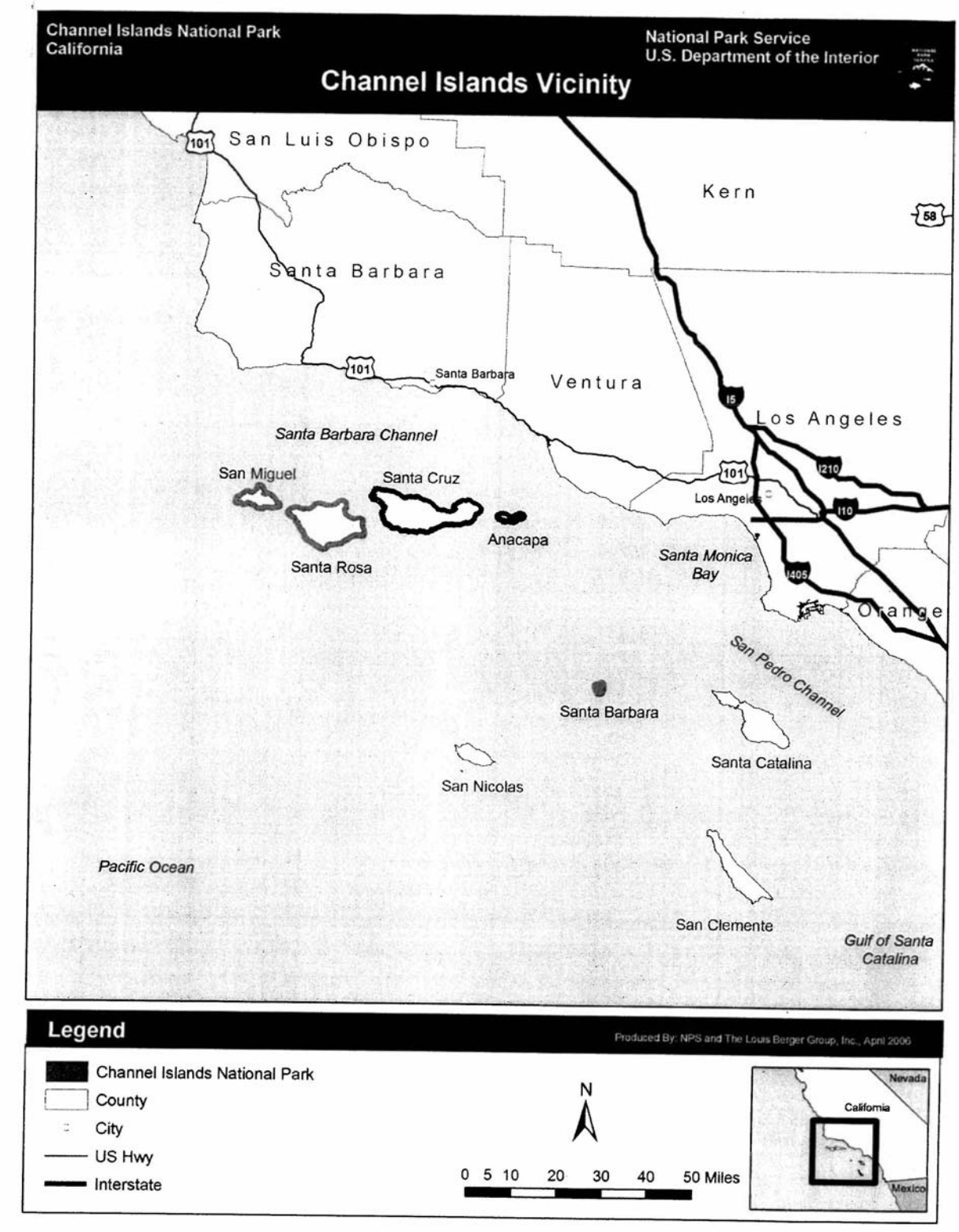
CHIS:RGALIPEAU:pb:5/26/2006

CHANNEL ISLANDS NATIONAL PARK
Threatened and Endangered Species

Scientific Name	Common Name	Federal	State	Anacapa	Santa Cruz	Santa Rosa	San Miguel	Santa Barbara
Charadrius alexandrinus nivosus	Western snowy plover	T	SSC			R	M	
Eschrichtius robustus	Gray whale	E						
Haliaeetus leucocephalus	Bald eagle	T	E	A	C	R	M	B!
Pelicanus occidentalis	California brown pelican	E	E	A				B
Sibaldus musculus	Blue whale	E						
Urocyon littoralis santarosae	Santa Rosa Island fox	E	T			R		

Legend

E	= Endangered
T	= Threatened
SSC	= Species of Special Concern
(EE)	= Single island endemic
(E)	= Endemic to the islands
!	= Extirpated (no longer occurs)
*	= Thought to be extinct
A, C, R, M, B	= Island of occurrence


Channel Islands National Park
California
National Park Service
U.S. Department of the Interior
Channel Islands Vicinity
San Luis Obispo
Kern
Santa Barbara
Ventura
Los Angeles
Orange
Santa Barbara
Santa Barbara Channel
San Miguel
Santa Cruz
Anacapa
Santa Rosa
Santa Monica Bay
San Pedro Channel
Santa Barbara
Santa Catalina
San Nicolas
Pacific Ocean
San Clemente
Gulf of Santa Catalina
101
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Channel Islands National Park
County
City
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Nevada
California
Mexico

L7617-CHIS

May 26, 2006

Mr. Rodney McInnis
Regional Administrator
National Marine Fisheries Service
Southwest Regional Office
501 West Ocean Boulevard, Suite 4200
Long Beach, CA 90802-4213

Reference: Channel Islands National Park, Santa Rosa Island

Dear Mr. McInnis:

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) is preparing an Environmental Assessment (EA) to evaluate the potential effects of replacing or rehabilitating a 574-foot pier in Bechers Bay on the north side of Santa Rosa Island, approximately 45 miles west of Ventura in Santa Barbara County, California. Please refer to the USGS quadrangle titled *Santa Rosa Island North* and the enclosed vicinity map. The purpose of this correspondence is to request a list of any federally listed or proposed threatened or endangered species or critical habitats that might occur in the project vicinity, including any special management considerations for such species, and to solicit any early input or concerns that you may have regarding this proposed action. The known listed species within Channel Islands National Park, including Santa Rosa Island, are identified in the attached table.

The purpose of this project is to replace or rehabilitate the existing pier at Santa Rosa Island in a manner that best serves park operations and provides safe and dry access to the island for park visitors and staff, while preserving the pier's historic character. Currently, the pier is the only viable access (by mobile crane) for supplies and materials to support all park operations. It also provides visitor access to the island via concessionaire boat operators for this 54,000-acre island. Currently, this pier provides for approximately 700 vessel landings per year.

The current pier is approximately 574-feet long, 20-feet wide for its length, and 40-feet wide at the end. It has a wood deck made up of 3x12-inch timbers and is built on both wood and steel pilings. The wood pilings are approximately 12 inches in diameter and covered in creosote to inhibit rotting. These pilings run from the cliff face to the surf zone. The steel pilings are 5-inches in diameter, extend out into the ocean for the remaining length, and are not protected from the elements. The pier sits 16-feet above the Mean Lower Low Water mark (MLLW) and has in the past experienced wave damage.

A range of four (4) alternatives, including the no action alternative, are currently being considered for evaluation in the EA. The three action alternatives would include the following: 1) replacing the pier within its current footprint; 2) rehabilitating the existing pier; and 3) replacing the pier along a new alignment. All three of these action alternatives would result in piers with approximately the same dimensions as the current pier.

The replacement alternative, which is currently the NPS preferred alternative, would involve demolishing the existing pier and recycling the materials at an offsite location. The new pier would be constructed within the same footprint as the existing pier. It would be built entirely on approximately 18-inch corrosion-protected steel pilings, and would be raised to approximately 27-feet above MLLW, elevating the pier above any expected storm surges that could damage the pier decking. The deck of the pier would be made of 4x12-inch timbers or pre-cast concrete. In addition, two sets of landing platforms (with two platforms per set) would be constructed on either side of the pier to ease the transfer of people from boats to the pier and vice versa. The lower platform would be located 8-feet above MLLW, while the upper platform would be located at 11-feet above MLLW. These platforms would be connected to the pier's upper deck by stairs and landings. The NPS is also evaluating options to provide for handicap accessibility.

The alternative that would rehabilitate the existing pier would involve dismantling the current pier and replacing the existing pilings with approximately 18-inch corrosion-protected steel pilings. The pier would be built within the same footprint. Much of the existing materials, such as the deck timbers and existing pile caps, would be reutilized. This alternative would also include installing landing platforms in much the same way as described under the replacement alternative above.

Finally, the alternative that would replace the pier along a new alignment alternative would involve creating a pier with the same specifications as the replacement alternative. However, the new pier would be built parallel to the existing pier, on previously undisturbed ocean bottom, to allow the existing pier to be fully functional for as long as possible.

We look forward to working with your office and the public as we proceed with the environmental planning process for this project. If you should have any questions, please contact Dan Richards, Marine Biologist at (805) 658-5760 or Elaine Rideout, Denver Service Center Natural Resource Specialist at (303) 969-2260.

Sincerely,
/s/ Russell Galipeau

Russell E. Galipeau, Jr.
Superintendent

Enclosures

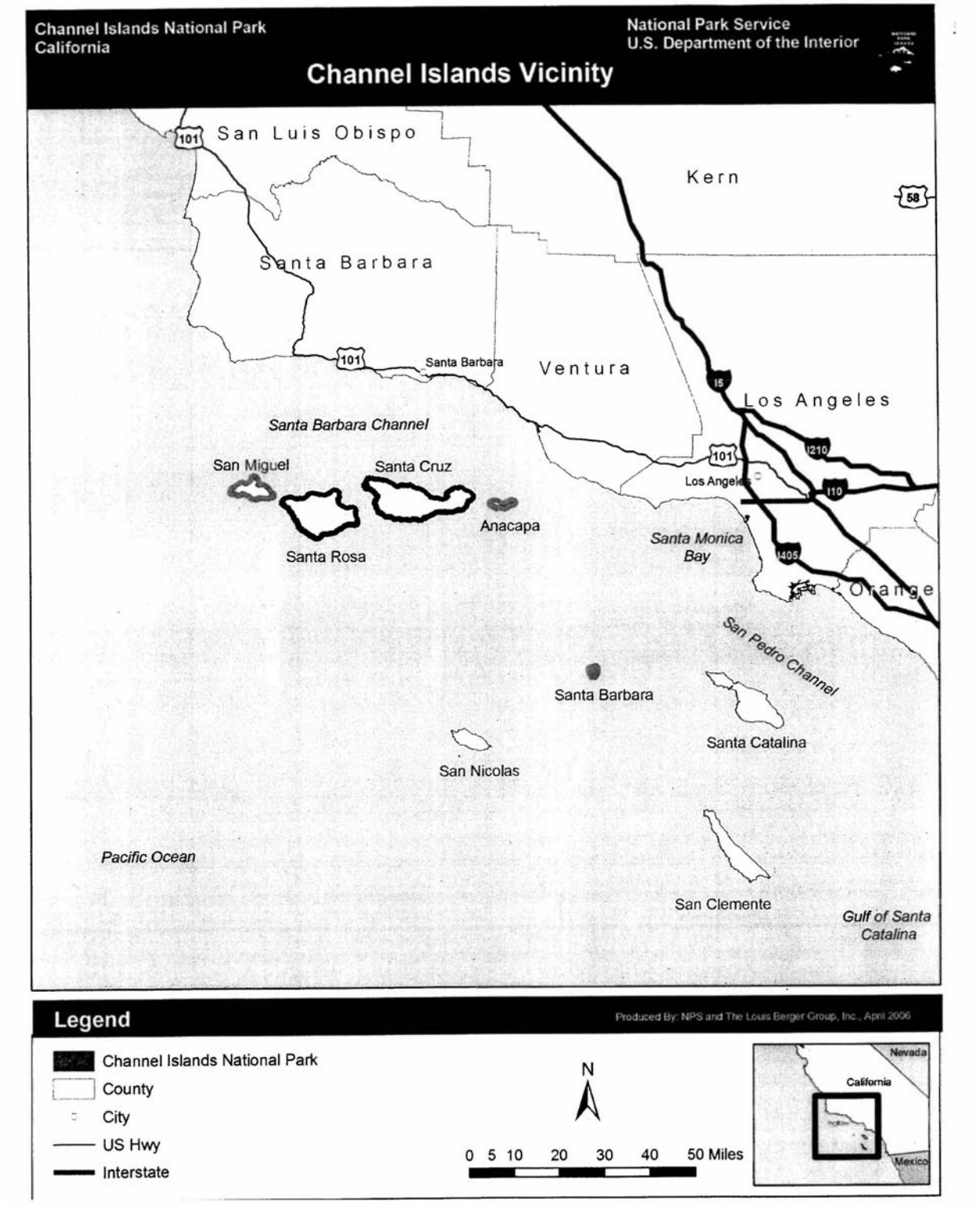
bcc: CHIS-File, DSC – Jane Sikoryak, DSC – Elaine Rideout
CHIS - T Glass, K. Faulkner, D. Richards
CHIS:RGALIPEU:pb:5/26/2006

CHANNEL ISLANDS NATIONAL PARK
Threatened and Endangered Species

Scientific Name	Common Name	Federal	State	Anacapa	Santa Cruz	Santa Rosa	San Miguel	Santa Barbara
Charadrius alexandrinus nivosus	Western snowy plover	T	SSC			R	M	
Eschrichtius robustus	Gray whale	E						
Haliaeetus leucocephalus	Bald eagle	T	E	A	C	R	M	B!
Pelicanus occidentalis	California brown pelican	E	E	A				B
Sibaldus musculus	Blue whale	E						
Urocyon littoralis santarosae	Santa Rosa Island fox	E	T			R		

Legend

E	= Endangered
T	= Threatened
SSC	= Species of Special Concern
(EE)	= Single island endemic
(E)	= Endemic to the islands
!	= Extirpated (no longer occurs)
*	= Thought to be extinct
A, C, R, M, B	= Island of occurrence


Channel Islands National Park
California
National Park Service
U.S. Department of the Interior
Channel Islands Vicinity
San Luis Obispo
Kern
Santa Barbara
Ventura
Los Angeles
Orange
Santa Barbara Channel
San Miguel
Santa Cruz
Anacapa
Santa Rosa
Santa Monica Bay
San Pedro Channel
Santa Barbara
Santa Catalina
San Nicolas
Pacific Ocean
San Clemente
Gulf of Santa Catalina
Legend
Produced By: NPS and The Louis Berger Group, Inc., April 2006
Channel Islands National Park
County
City
US Hwy
Interstate
N
0 5 10 20 30 40 50 Miles
Nevada
California
Mexico

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Appendix C
Coordination with
California Department of Fish and Game

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State of California - The Resources Agency
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
Marine Region
20 Lower Ragsdale Drive, Suite 100
Monterey, CA 93940

ARNOLD SCHWARZENEGGER, Governor

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GLASS —

June 14, 2006

Mr. Russell E. Galipeau, Jr., Superintendent
National Park Service
Channel Islands National Park
1901 Spinnaker Drive
Ventura, CA 93001-4354

Dear Mr. Galipeau:

This letter is in reference to your May 26, 2006, correspondence concerning the preparation of an Environmental Assessment (EA) for the replacement or rehabilitation of a 574 foot-long pier in Becher's Bay on the north side of Santa Rosa Island (SRI). The EA will examine three project alternatives as well as a no-project alternative. The three alternatives include: replacing the pier in its current footprint; rehabilitating the pier; and replacing the pier with a new alignment parallel to the existing pier. The current pier is 20 feet-wide (40 feet-wide at the end) and sits 16 feet above the Mean Lower Low Water (MLLW) line. Existing pilings are both steel and creosote treated wood. New 18-inch diameter steel pilings and two sets of landing platforms are proposed for all three alternatives. The rehabilitation alternative would reuse deck timbers and pile caps while the new alignment alternative would place the pier on undisturbed ocean bottom. The pier's dimensions would remain the same as the current pier in all three alternatives.

As trustee for the State's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. In this capacity, the Department administers the California Endangered Species Act, the Native Plant Protection Act, and other provisions of the California Fish and Game Code that afford protection to the State's fish and wildlife trust resources (CEQA Guidelines Section 15386). We appreciate this opportunity to provide our concerns for consideration in your EA.

Comments

The Department considers eelgrass beds (*Zostera marina*) valuable marine habitat as they function to stabilize substrate, increase productivity, and provide structure to soft bottom habitat. Large beds of eelgrass habitat are known to occur at Becher's Bay. Accordingly, impacts to eelgrass habitat should be avoided. Your letter states that eelgrass is not present where the current pier exists or where the newly aligned pier

would be placed. However, eelgrass habitat could be present outside this immediate area. Demolition and construction is expected to last for 6 to 8 months and equipment would include a 20-ton truck crane, boats, and a barge. If eelgrass does exist in the vicinity of the project it could be impacted from turbidity and construction traffic. For that reason, we recommend an eelgrass survey be conducted prior to any demolition or construction activity. If eelgrass is found within the project area we recommend the applicant mark the boundaries of eelgrass habitat, prior to construction, and prevent vessels associated with the project from anchoring over the eelgrass habitat. Measures to reduce turbidity should also be employed. A post-construction eelgrass survey would need to be conducted after construction and adverse impacts to eelgrass mitigated in accordance with NOAA Fisheries Southern California Eelgrass Mitigation Policy, adopted July 31, 1991, as amended.

Surfgrass habitat (*Phyllospadix* sp.) is an equally important marine plant species which may exist within the project area. Accordingly, we recommend a survey for surfgrass be conducted in conjunction with the eelgrass survey. Because restoring surfgrass habitat is difficult and damaged surfgrass beds take a long time to recover, impacts to surfgrass must be avoided. Measures, such as those mentioned above, should be implemented if surfgrass habitat is found in the area.

The current pier's wood pilings extend from the cliff face to the surf zone and we assume removal of these pilings will require work in the intertidal zone. This activity could have potential impacts to California grunion (*Leuresthes tenuis*). California grunion is a recreationally and ecologically important nearshore species and, although they currently appear to be maintaining their population numbers at a near constant level, they are not considered abundant. Grunion spawns on the beach, from March to September, during the highest tides of the month. Eggs deposited in the sand are incubated and kept moist until they hatch during the next high tide series, usually 10 to 15 days. Removal/installation of piles and equipment traffic over recently spawned areas could impact the grunion's spawning success by burying and/or crushing any deposited eggs. To minimize impacts to grunion, we recommend beach sand in the grunion spawning zone not be disturbed from March through August unless a survey has shown that no grunion eggs are present. If eggs are present, no sand disturbing activities should occur for the two-week incubation period and until subsequent monitoring indicates no additional spawning has occurred.

The Department is also concerned about increased artificial night lighting. There are a number of seabird species that nest and forage at the Channel Islands which are subject to the impacts of artificial night lighting. These include the state listed Xantus's murrelet (*Synthilboramphus hypoleucus*) and three state species of special concern (SSC); ashy storm-petrel (*Oceanodroma homochroa*), black storm-petrel (*O. melania*), and the rhinoceros auklet (*Cerorhinca monocerata*). Although these seabirds are not known to breed on SRI they may transit or forage within the area. If lights are a component of the new or rehabilitated pier, either during the construction or operational

stages, we recommend the following measures be implemented to minimize the impacts of night lighting on nocturnal seabirds: the number of lights be minimized and placed only where needed; all light fixtures be shielded; utilize flat-bottomed lights so illumination is directed downward and does not scatter.

The staging area for materials and construction equipment will be in a grassy area off the main road. Camp trailers will also be set up to accommodate construction personnel. In addition to the island fox (as mentioned in your attachment) the Channel Islands spotted skunk (*Spilogale gracilis amphiala)*, a SSC, is also found on SRI. We recommend the construction crews utilize best management practices such as containment of garbage, no feeding of wildlife, and no pets, to discourage skunks and foxes from being attracted to areas of human activity.

Your letter contained a table of listed species within the Channel Islands National Park. We have mentioned a few additional species in this response but you should contact the Department's California Natural Diversity Data Base in Sacramento for an account of additional species, including plants. The CNDDB can be contacted at (916) 324-3812 to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code, or see http://www.dfg.ca.gov/whdab/html/cnddb.html

We thank you for providing us the opportunity to review your project. As always, Department personnel are available to discuss our comments, concerns, and recommendations in greater detail. To arrange for a discussion, please contact Ms. Marilyn Fluharty, Environmental Scientist, California Department of Fish and Game, 4949 Viewridge Avenue, San Diego, CA 92123, telephone (858) 467-4231.

Sincerely,

Thomas Napoli
Staff Environmental Scientist
MR- Los Alamitos

cc: Marilyn Fluharty
CDFG- San Diego

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historic places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

August 2007