

APPENDIX A:
INFORMATION PLANNING AND CONSULTATION SYSTEM
(IPAC) RESOURCE LIST

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Dare County, North Carolina



Local office

Raleigh Ecological Services Field Office

☎ (919) 856-4520

📠 (919) 856-4556

MAILING ADDRESS

Post Office Box 33726

Raleigh, NC 27636-3726

PHYSICAL ADDRESS

551 Pylon Drive, Suite F

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Raleigh, NC 27606-1487

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened
Red Wolf <i>Canis rufus</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/37	EXPN
West Indian Manatee <i>Trichechus manatus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/4469	Threatened Marine mammal

Birds

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis</i> ssp. <i>jamaicensis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10477	Proposed Threatened
Piping Plover <i>Charadrius melodus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1864	Threatened
Red-cockaded Woodpecker <i>Picoides borealis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7614	Endangered
Roseate Tern <i>Sterna dougallii</i> <i>dougallii</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2083	Endangered

Reptiles

NAME	STATUS
American Alligator <i>Alligator mississippiensis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/776	SAT

Green Sea Turtle *Chelonia mydas* Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/6199>

Hawksbill Sea Turtle *Eretmochelys imbricata* Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/3656>

Kemp's Ridley Sea Turtle *Lepidochelys kempii* Endangered
There is **proposed** critical habitat for this species. The location of the critical habitat is not available.
<https://ecos.fws.gov/ecp/species/5523>

Leatherback Sea Turtle *Dermochelys coriacea* Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/1493>

Loggerhead Sea Turtle *Caretta caretta* Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/1110>

Flowering Plants

NAME	STATUS
Seabeach Amaranth <i>Amaranthus pumilus</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8549	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A
BREEDING SEASON IS INDICATED
FOR A BIRD ON YOUR LIST, THE
BIRD MAY BREED IN YOUR
PROJECT AREA SOMETIME WITHIN
THE TIMEFRAME SPECIFIED,
WHICH IS A VERY LIBERAL
ESTIMATE OF THE DATES INSIDE
WHICH THE BIRD BREEDS
ACROSS ITS ENTIRE RANGE.
"BREEDS ELSEWHERE" INDICATES
THAT THE BIRD DOES NOT LIKELY
BREED IN YOUR PROJECT AREA.)

American Kestrel *Falco sparverius paulus*

Breeds Apr 1 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

American Oystercatcher *Haematopus palliatus*

Breeds Apr 15 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8935>

Bald Eagle *Haliaeetus leucocephalus*

Breeds Sep 1 to Jul 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Band-rumped Storm-petrel *Oceanodroma castro*

Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Black Scoter *Melanitta nigra*

Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Black Skimmer *Rynchops niger*

Breeds May 20 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/5234>

Bonaparte's Gull *Chroicocephalus philadelphia*

Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Brown Pelican *Pelecanus occidentalis*

Breeds Jan 15 to Sep 30

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/6034>

Clapper Rail *Rallus crepitans*

Breeds Apr 10 to Oct 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Common Eider *Somateria mollissima*

Breeds Jun 1 to Sep 30

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Common Loon *gavia immer*

Breeds Apr 15 to Oct 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/4464>

Common Tern *Sterna hirundo*

Breeds May 10 to Sep 10

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/4963>

Cory's Shearwater *Calonectris diomedea*

Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Double-crested Cormorant *phalacrocorax auritus*

Breeds Apr 20 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/3478>

Dunlin *Calidris alpina arctica*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Great Black-backed Gull *Larus marinus*

Breeds Apr 15 to Aug 20

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Gull-billed Tern *Gelochelidon nilotica*

Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9501>

Herring Gull *Larus argentatus*

Breeds Apr 20 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Least Tern *Sterna antillarum*

Breeds Apr 20 to Sep 10

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Lesser Yellowlegs *Tringa flavipes*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

Long-tailed Duck *Clangula hyemalis*

Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/7238>

Marbled Godwit *Limosa fedoa*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9481>

Nelson's Sparrow *Ammodramus nelsoni*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Northern Gannet *Morus bassanus*

Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Parasitic Jaeger *Stercorarius parasiticus*

Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Prairie Warbler *Dendroica discolor*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Jul 31

Purple Sandpiper *Calidris maritima*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

Razorbill *Alca torda*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds Jun 15 to Sep 10

Red-breasted Merganser *Mergus serrator*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds elsewhere

Red-throated Loon *Gavia stellata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

Ring-billed Gull *Larus delawarensis*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds elsewhere

Royal Tern *Thalasseus maximus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds Apr 15 to Aug 31

Ruddy Turnstone *Arenaria interpres morinella*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

Rusty Blackbird *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

Seaside Sparrow *Ammodramus maritimus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 20

Semipalmated Sandpiper *Calidris pusilla*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Short-billed Dowitcher *Limnodromus griseus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9480>

Surf Scoter *Melanitta perspicillata*

Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Whimbrel *Numenius phaeopus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9483>

White-winged Scoter *Melanitta fusca*

Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Willet *Tringa semipalmata*

Breeds Apr 20 to Aug 5

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wilson's Plover *Charadrius wilsonia*

Breeds Apr 1 to Aug 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be

used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

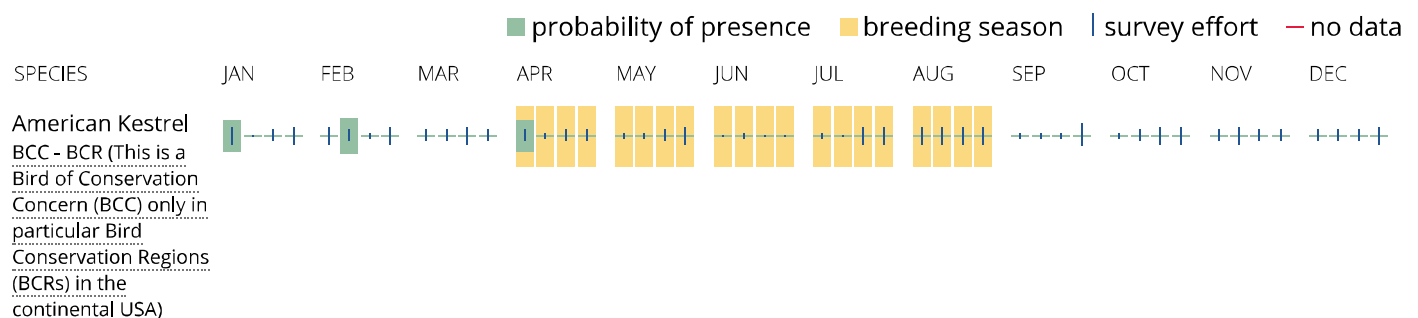
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





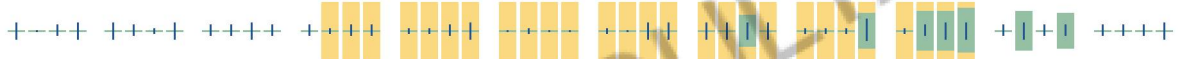
Bonaparte's Gull
Non-BCC Vulnerable
(This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



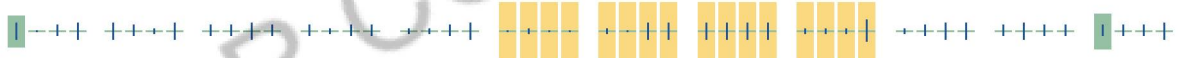
Brown Pelican
Non-BCC Vulnerable
(This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



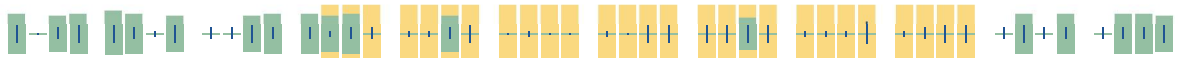
Clapper Rail
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



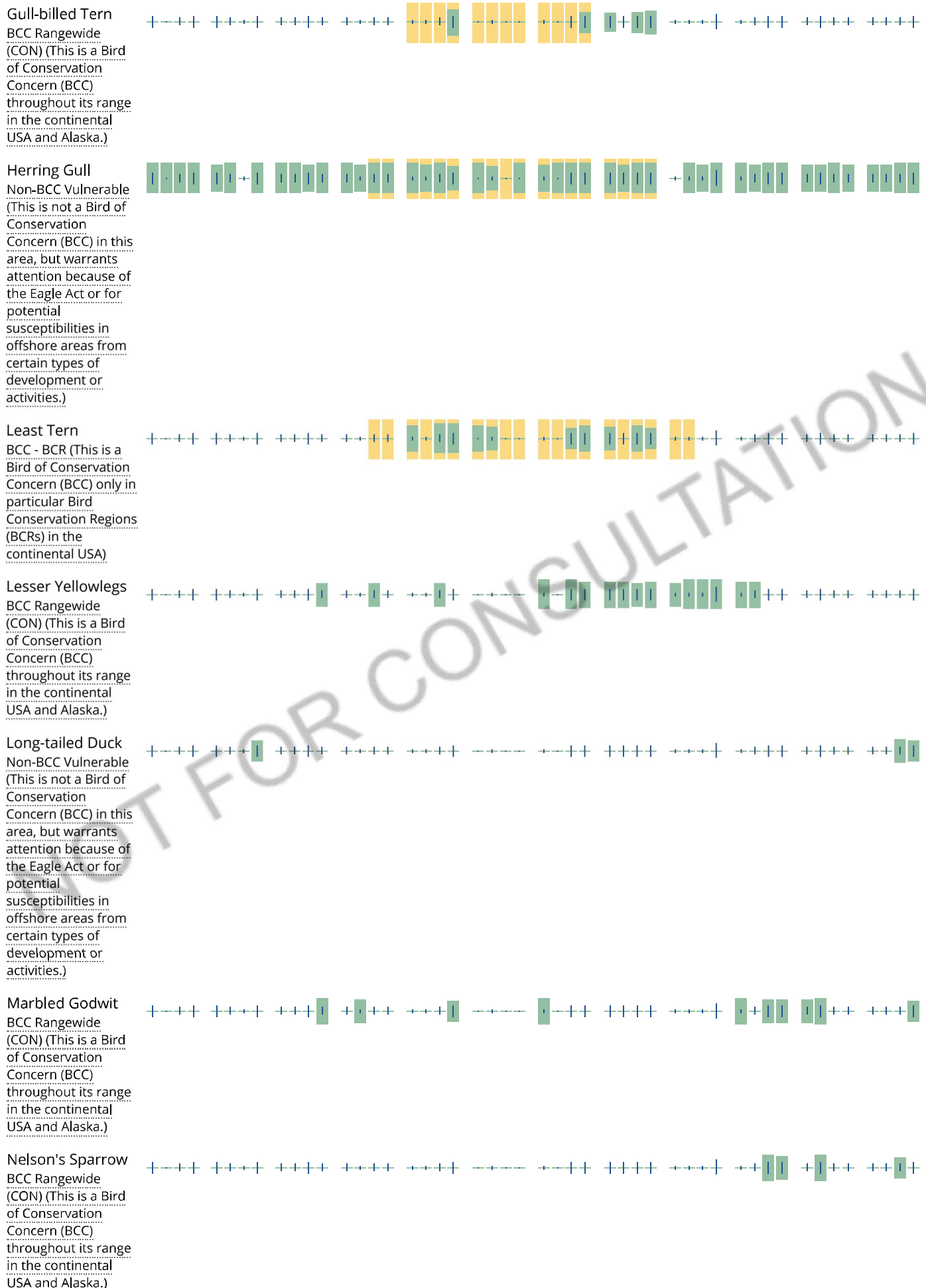
Common Eider
Non-BCC Vulnerable
(This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

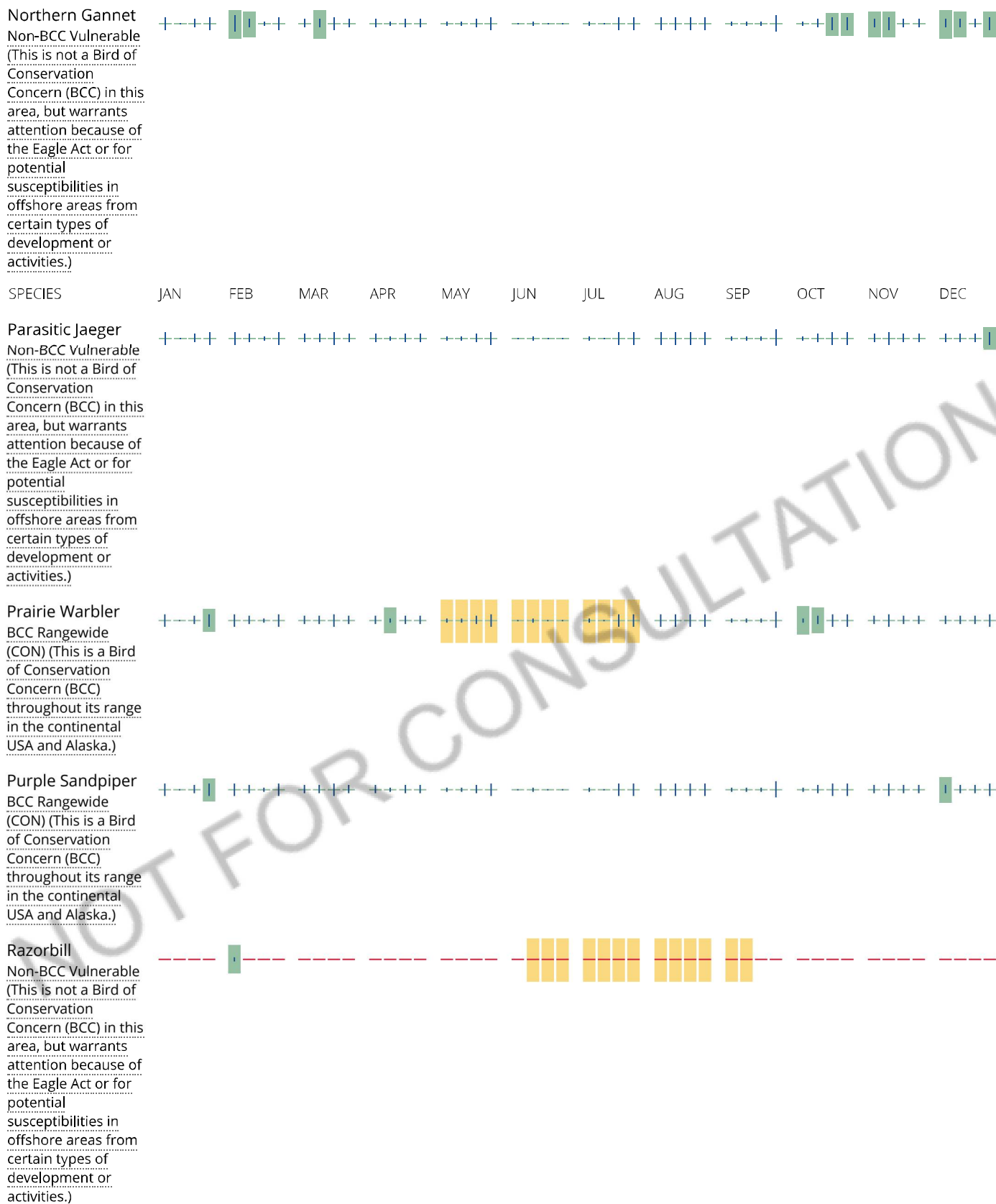


Common Loon
Non-BCC Vulnerable
(This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

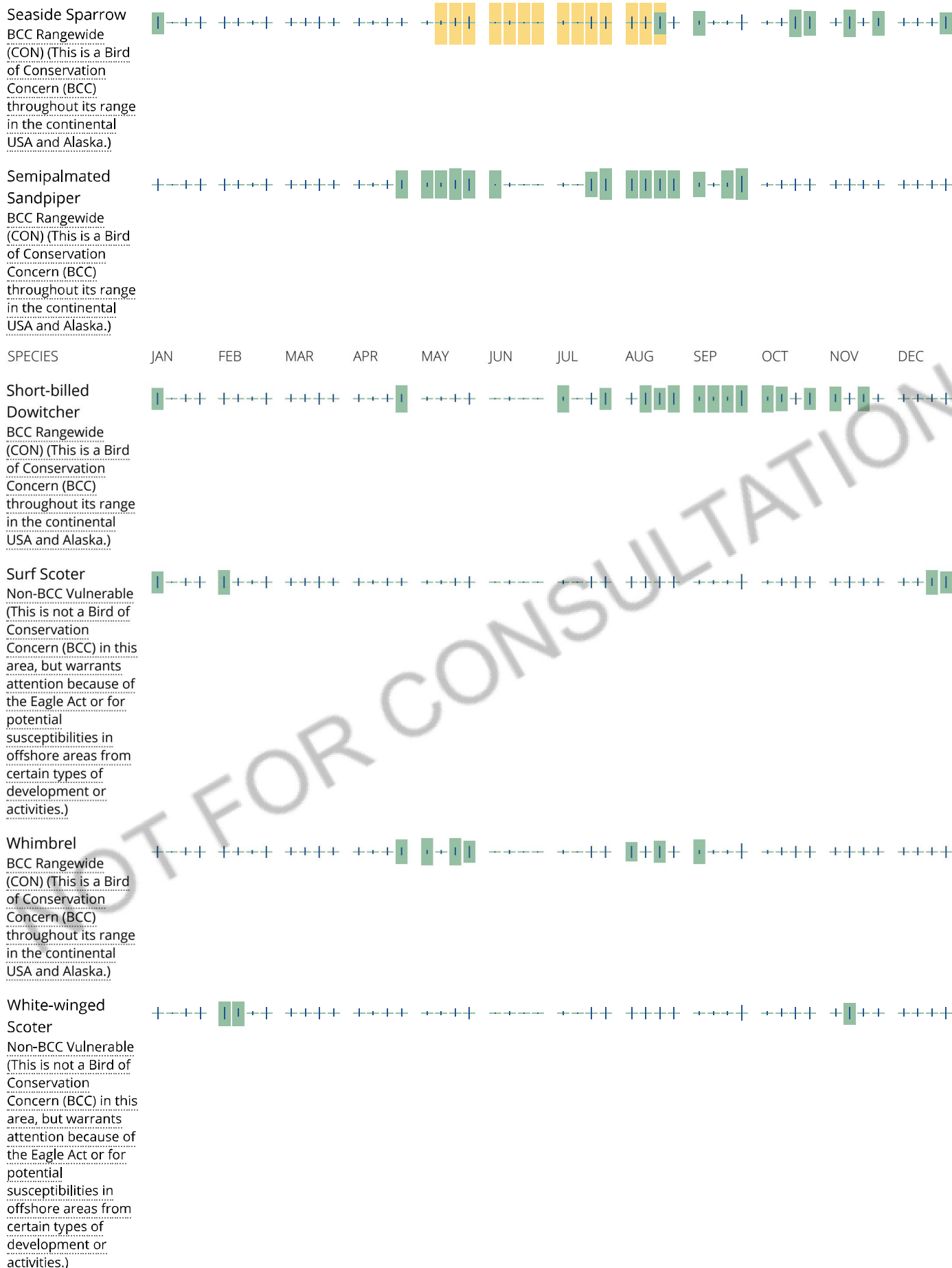












**BCC Rangewide
(CON) (This is a Bird
of Conservation
Concern (BCC)
throughout its range
in the continental
USA and Alaska.)**



Wilson's Plover
BCC Rangewide
(CON) (This is a Bird
of Conservation
Concern (BCC)
throughout its range
in the continental
USA and Alaska.)



[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds](#)

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[guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or

minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

NOT FOR CONSULTATION

Marine mammals

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act¹ and the Convention on International Trade in Endangered Species of Wild Fauna and Flora².

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries³ [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the [Marine Mammals](#) page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take (to harass, hunt, capture, kill, or attempt to harass, hunt, capture or kill) of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The [Endangered Species Act](#) (ESA) of 1973.
2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

West Indian Manatee *Trichechus manatus*
<https://ecos.fws.gov/ecp/species/4469>

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

ESTUARINE AND MARINE DEEPWATER

[E1UBL](#)

[E1UBLx](#)

ESTUARINE AND MARINE WETLAND

[E2EM1N](#)

[E2SS3/EM1P](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters.

Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

APPENDIX B:
NATURAL HERITAGE PROGRAM (NHP) ELEMENT OCCURRENCE
REPORT

NCNHDE-11299

February 6, 2020

Warren Eadus
Quible & Associates, P.C.
PO Drawer 870
Kitty Hawk, NC 27949
RE: Oregon Inlet Fishing Center; P18078

Dear Warren Eadus:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

A query of the NCNHP database indicates that there are records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. These results are presented in the attached 'Documented Occurrences' tables and map.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is documented within the project area or indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: <https://www.fws.gov/offices/Directory/ListOffices.cfm?statecode=37>.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

Also please note that the NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Clean Water Management Trust Fund easement, or an occurrence of a Federally-listed species is documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Intersecting the Project Area
Oregon Inlet Fishing Center
Project No. P18078
February 6, 2020
NCNHDE-11299

No Element Occurrences are Documented within the Project Area

There are no documented element occurrences (of medium to very high accuracy) that intersect with the project area. Please note, however, that although the NCNHP database does not show records for rare species within the project area, it does not necessarily mean that they are not present; it may simply mean that the area has not been surveyed. The use of Natural Heritage Program data should not be substituted for actual field surveys if needed, particularly if the project area contains suitable habitat for rare species. If rare species are found, the NCNHP would appreciate receiving this information so that we may update our database.

No Natural Areas are Documented within the Project Area

Managed Areas Documented Within Project Area*

Managed Area Name	Owner	Owner Type
Cape Hatteras National Seashore	US National Park Service	Federal

* NOTE: If the proposed project intersects with a conservation/managed area, please contact the landowner directly for additional information. If the project intersects with a Dedicated Nature Preserve (DNP), Registered Natural Heritage Area (RHA), or Federally-listed species, NCNHP staff may provide additional correspondence regarding the project.

Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/content/help>. Data query generated on February 6, 2020; source: NCNHP, Q1 Jan 2020. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
Oregon Inlet Fishing Center
Project No. P18078
February 6, 2020
NCNHDE-11299

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Animal Assemblage	23669	Waterbird Colony	---	2014-05-30	C	3-Medium	---	---	GNR	S3
Bird	602	Charadrius melodus melodus	Piping Plover - Atlantic Coast subspecies	2015	E	3-Medium	Threatened	Threatened	G3T3	S1B,S1N
Bird	7210	Falco peregrinus anatum	American Peregrine Falcon	1986	H	4-Low	---	Endangered	G4T4	S1B,S2N
Bird	26011	Haematopus palliatus	American Oystercatcher	2007	C	3-Medium	---	Special Concern	G5	S2S3B,S3N
Bird	25745	Sterna hirundo	Common Tern	2007-05-28	F	3-Medium	---	Endangered	G5	S2B
Bird	23670	Sternula antillarum	Least Tern	2014-05-30	C	3-Medium	---	Special Concern	G4	S3B
Freshwater Fish	24087	Acipenser brevirostrum	Shortnose Sturgeon	1998-05-18	H?	5-Very Low	Endangered	Endangered	G3	S1
Freshwater Fish	24086	Acipenser brevirostrum	Shortnose Sturgeon	1999-01-28	H?	5-Very Low	Endangered	Endangered	G3	S1
Freshwater Fish	38940	Acipenser oxyrinchus oxyrinchus	Atlantic Sturgeon	2015-06-02	E	4-Low	Endangered	Endangered	G3T3	S2
Mammal	35462	Peromyscus leucopus easti	Pungo White-footed Deermouse	2005-Pre	E	4-Low	---	Special Concern	G5T1	S1
Mammal	841	Trichechus manatus	West Indian Manatee	2019-09-21	E	5-Very Low	Threatened	Threatened	G2	S1N
Reptile	16259	Caretta caretta	Loggerhead Seaturtle	2017-09-01	C	3-Medium	Threatened	Threatened	G3	S2B
Reptile	10079	Chelonia mydas	Green Seaturtle	2016-06-27	D	5-Very Low	Threatened	Threatened	G3	S2B
Reptile	4907	Malaclemys terrapin	Diamondback Terrapin	2018-06-08	AB	3-Medium	---	Special Concern	G4	S3
Vascular Plant	28739	Amaranthus pumilus	Seabeach Amaranth	2005	X?	4-Low	Threatened	Threatened	G2	S1
Vascular Plant	32626	Yucca gloriosa	Moundlily Yucca	2012-Summer	C	2-High	---	Significantly Rare Peripheral	G4?	S2?

Natural Areas Documented Within a One-mile Radius of the Project Area

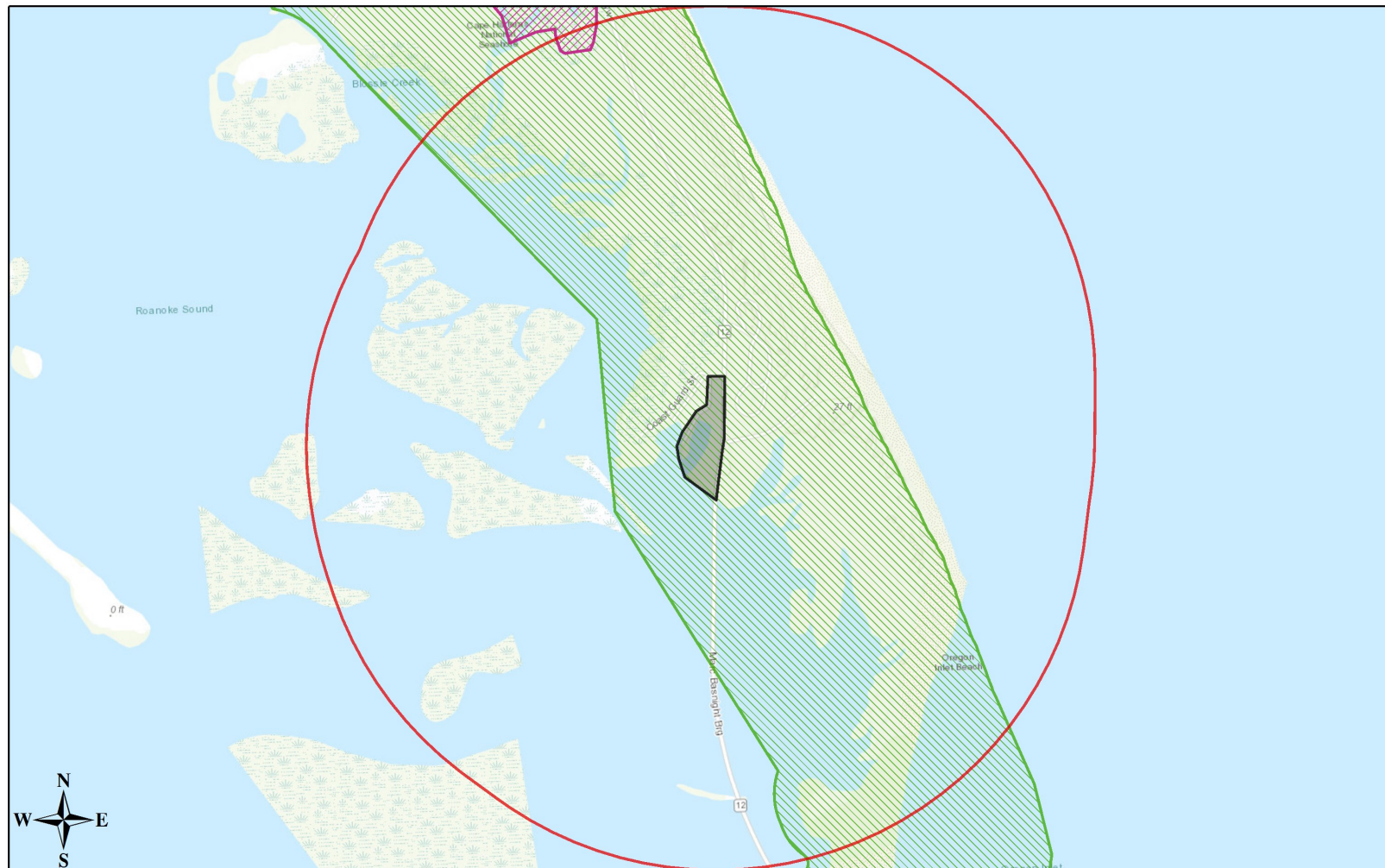
Site Name	Representational Rating	Collective Rating
Bodie Island Lighthouse Pond	R2 (Very High)	C4 (Moderate)

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
Cape Hatteras National Seashore	US National Park Service	Federal
Bodie Island Lighthouse Pond Registered Heritage Area	US National Park Service	Federal

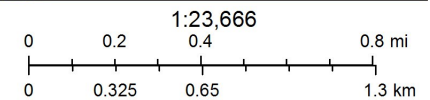
Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/content/help>. Data query generated on February 6, 2020; source: NCNHP, Q1 Jan 2020. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-11299: Oregon Inlet Fishing Center



February 6, 2020

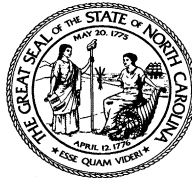
- Project Boundary
- Buffered Project Boundary
- NHP Natural Area (NHNA)
- Managed Area (MAREA)



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

APPENDIX C:

AGENCY AND TRIBAL CORRESPONDENCE



**North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary Susi H. Hamilton

Office of Archives and History
Deputy Secretary Kevin Cherry

December 16, 2019

Jamie Lanier
Cultural Resources Manager
NPS Outer Banks Group
1401 National Park Drive
Manteo, NC 27954

jami_p_lanier@nps.gov

Re: Replace Oregon Inlet Fishing Center Concessions Building, Bodie Island,
Dare County, ER 19-5029

Dear Ms. Lanier:

We are in receipt of Superintendent David Hallac's November 15, 2019, letter concerning the above-referenced property and its replacement. We have reviewed the materials presented and concur that the Oregon Inlet Fishing Center Concessions Building is not historic, and its replacement will not affect any historic properties.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

A handwritten signature in blue ink that reads "Renee Gledhill-Earley".

 Ramona M. Bartos
Deputy State Historic Preservation Officer



**North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary Susi H. Hamilton

Office of Archives and History
Deputy Secretary Kevin Cherry

January 31, 2020

Jami Lanier jami_p_lanier@nps.gov
National Parks Service Outer Banks Group
1401 National Park Drive
Manteo, NC 27954

Re: Oregon Inlet Fishing Center Site Improvements, 8770 Oregon Inlet Road, Nags Head, Dare County,
ER 20-0115

Dear Ms. Lanier:

Thank you for your email of January 8, 2020, concerning the above project.

We have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

A handwritten signature in blue ink that reads "Renee Gledhill-Earley".

 Ramona Bartos, Deputy
State Historic Preservation Officer



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh ES Field Office

Post Office Box 33726

Raleigh, North Carolina 27636-3726

February 20, 2020

Warren Eadus
Quible & Associates, P.C.
PO Drawer 870
Kitty Hawk, NC 27949

Re: Oregon Inlet Fishing Center Renovations – Dare County

Dear Mr. Eadus:

This letter is to inform you that the Service has established an on-line project planning and consultation process which assists developers and consultants in determining whether a federally-listed species or designated critical habitat may be affected by a proposed project. For future projects, please visit the Raleigh Field Office's project planning website at <https://www.fws.gov/raleigh/pp.html>. If you are only searching for a list of species that may be present in the project's Action Area, then you may use the Service's Information, Planning, and Consultation System (IPaC) website to determine if any listed, proposed, or candidate species may be present in the Action Area and generate a species list. The IPaC website may be viewed at <https://ecos.fws.gov/ipac/>. The IPaC web site contains a complete and frequently updated list of all endangered and threatened species protected by the provisions of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)(Act), a list of federal species of concern¹ that are known to occur in each county in North Carolina, and other resources.

Section 7 of the Act requires that all federal agencies (or their designated non-federal representative), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species. A biological assessment or evaluation may be prepared to fulfill that requirement and in determining whether additional consultation with the Service is necessary. In addition to the federally-protected species list, information on the species' life histories and habitats and information on completing a biological assessment or

¹ The term "federal species of concern" refers to those species which the Service believes might be in need of concentrated conservation actions. Federal species of concern receive no legal protection and their designation does not necessarily imply that the species will eventually be proposed for listing as a federally endangered or threatened species. However, we recommend that all practicable measures be taken to avoid or minimize adverse impacts to federal species of concern.

evaluation and can be found on our web page at <http://www.fws.gov/raleigh>. Please check the web site often for updated information or changes.

If your project contains suitable habitat for any of the federally-listed species known to be present within the county where your project occurs, the proposed action has the potential to adversely affect those species. As such, we recommend that surveys be conducted to determine the species' presence or absence within the project area. The use of North Carolina Natural Heritage program data should not be substituted for actual field surveys.

If you determine that the proposed action may affect (i.e., likely to adversely affect or not likely to adversely affect) a federally-protected species, you should notify this office with your determination, the results of your surveys, survey methodologies, and an analysis of the effects of the action on listed species, including consideration of direct, indirect, and cumulative effects, before conducting any activities that might affect the species. If you determine that the proposed action will have no effect (i.e., no beneficial or adverse, direct or indirect effect) on federally listed species, then you are not required to contact our office for concurrence (unless an Environmental Impact Statement is prepared). However, you should maintain a complete record of the assessment, including steps leading to your determination of effect, the qualified personnel conducting the assessment, habitat conditions, site photographs, and any other related articles.

With regard to the above-referenced project, we offer the following remarks. Our comments are submitted pursuant to, and in accordance with, provisions of the Endangered Species Act.

Based on the information provided and other information available, it appears that the proposed action is not likely to adversely affect any federally-listed endangered or threatened species, their formally designated critical habitat, or species currently proposed for listing under the Act at these sites. We believe that the requirements of section 7(a)(2) of the Act have been satisfied for your project. Please remember that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner that was not considered in this review; or, (3) a new species is listed or critical habitat determined that may be affected by the identified action.

However, the Service is concerned about the potential impacts the proposed action might have on aquatic species. Aquatic resources are highly susceptible to sedimentation. Therefore, we recommend that all practicable measures be taken to avoid adverse impacts to aquatic species, including implementing directional boring methods and stringent sediment and erosion control measures. An erosion and sedimentation control plan should be submitted to and approved by the North Carolina Division of Land Resources, Land Quality Section prior to construction. Erosion and sedimentation controls should be installed and maintained between the construction site and any nearby down-gradient surface waters. In addition, we recommend maintaining natural, vegetated buffers on all streams and creeks adjacent to the project site.

The North Carolina Wildlife Resources Commission has developed a Guidance Memorandum (a copy can be found on our website at (<http://www.fws.gov/raleigh>) to address and mitigate secondary and cumulative impacts to aquatic and terrestrial wildlife resources and water quality.

We recommend that you consider this document in the development of your projects and in completing an initiation package for consultation (if necessary).

We hope you find our web page useful and informative and that following the process described above will reduce the time required, and eliminate the need, for general correspondence for species' lists. If you have any questions or comments, please contact John Ellis of this office at (919) 856-4520 ext. 26.

Sincerely,



Pete Benjamin
Field Supervisor



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
<https://www.fisheries.noaa.gov/region/southeast>

F/SER31:DMB
SERO-2020-02259

Tracy A. Ziegler, Chief of Resource Management and Science
Cape Hatteras National Seashore
United States Department of the Interior
National Park Service
National Parks of Eastern North Carolina
1401 National Park Drive
Manteo, NC 27954

Ref.: Oregon Inlet Fishing Center Marina Reconfiguration, Dare County, North Carolina –
EXPEDITED TRACK

Dear Tracy:

This letter responds to your December 2, 2020, request pursuant to Section 7 of the Endangered Species Act (ESA) for consultation with the National Marine Fisheries Service (NMFS) on the subject action.

We reviewed the action agency's consultation request document and related materials. Based on our knowledge, expertise, and the action agency's materials, we concur with the action agency's conclusions that the proposed action is not likely to adversely affect the NMFS ESA-listed species and/or designated critical habitat. This concludes your consultation responsibilities under the ESA for species and/or designated critical habitat under NMFS's purview. Reinitiation of consultation is required and shall be requested by the action agency or by NMFS where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) take occurs; (b) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in this consultation; (c) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not previously considered in this consultation; or (d) if a new species is listed or critical habitat designated that may be affected by the action.

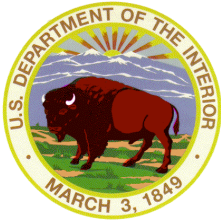
We look forward to further cooperation with you on other projects to ensure the conservation of our threatened and endangered marine species and designated critical habitat. If you have any questions on this consultation, please contact Dana M. Bethea, Consultation Biologist, at (727) 209-5974 or by email at Dana.Bethea@noaa.gov.

Sincerely,

David Bernhart
Assistant Regional Administrator
for Protected Resources

File: 1514-22.e





United States Department of the Interior
NATIONAL PARK SERVICE
National Parks of Eastern North Carolina
1401 National Park Drive
Manteo, NC 27954



IN REPLY REFER TO:

1.A.1.(CAHA-R

December 2, 2020

Ms. Dana Bethea
Endangered Species Biologist
Southeast Regional Office
Protected Resources Division
National Marine Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
Phone: (727) 209-5974
Email: Dana.Bethea@noaa.gov

Reference Project: Oregon Inlet Fishing Center Marina Reconfiguration, SERO-2020-02259, Dare County, North Carolina

Dear Ms. Bethea:

The National Park Service (NPS) is submitting this expedited track informal request for Section 7 consultation on the subject reference project. NPS and Oregon Inlet Fishing Center, LLC (operating under a lease of NPS property) propose to undertake redevelopment of the Oregon Inlet Marina (also called Oregon Inlet Fishing Center). The proposed action/preferred alternative includes replacing existing structures and infrastructure and maintenance dredge of waters within the existing marina basin and immediately adjacent waters of Motts Creek. The proposed project is located at the Oregon Inlet Fishing Center and immediately adjacent waters located within Cape Hatteras National Seashore in Nags Head, Dare County, North Carolina. The project is centered around 35.795969, -75.548352 (see Figure 1 for the Project Area Vicinity Map).

The NPS has determined that the proposed action may affect but is not likely to adversely affect (NLAA) federally-listed species, as described below, and is therefore requesting concurrence from the National Marine Fisheries Service (NMFS) with our determinations pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. § 1536), and the consultation procedures at 50 C.F.R. Part 402.

Pursuant to our request for informal consultation, the NPS is providing, enclosing, or otherwise identifying the following information:

- 1) A description of the proposed action to be considered;
- 2) A description of the action area;
- 3) A description of listed species or critical habitat that may be affected by the action;
- 4) An analysis of the potential routes of effect on any listed species;
- 5) An analysis of the potential routes of effect on any critical habitat; and
- 6) A determination of the proposed action.

1) DESCRIPTION OF THE PROPOSED ACTION

The National Park Service (NPS) is proposing to improve building facilities and visitor experience at Oregon Inlet Marina (also known as Oregon Inlet Fishing Center), which is located within the boundaries of Cape Hatteras National Seashore (Seashore). Oregon Inlet Marina is operated by Oregon Inlet Fishing Center, LLC (OIFC) under a 20-year lease with the NPS (December 31, 2018 – December 31, 2038). The lease between NPS and OIFC requires that OIFC fund and conduct all maintenance and improvements to the marina premises during the term of the lease, as well as obtain all required permits and undertake environmental and cultural compliance for such work. The lease provides the opportunity for OIFC, with NPS approval, to rehabilitate or replace existing structures and to conduct other improvements and alterations to the marina premises. The lessee, OIFC, is responsible for funding this work and NPS may approve the expenses for rent offsets in accordance with the terms of the lease. The project and proposed actions described in this letter are in accordance with the terms of the lease. .

The goal of the project is to replace vulnerable, deteriorating structures with sustainable structures adapted to sea level rise and storm surge, and to conduct other site improvements to modernize the premises and to support the replacement buildings. The project aims to address the following key issues:

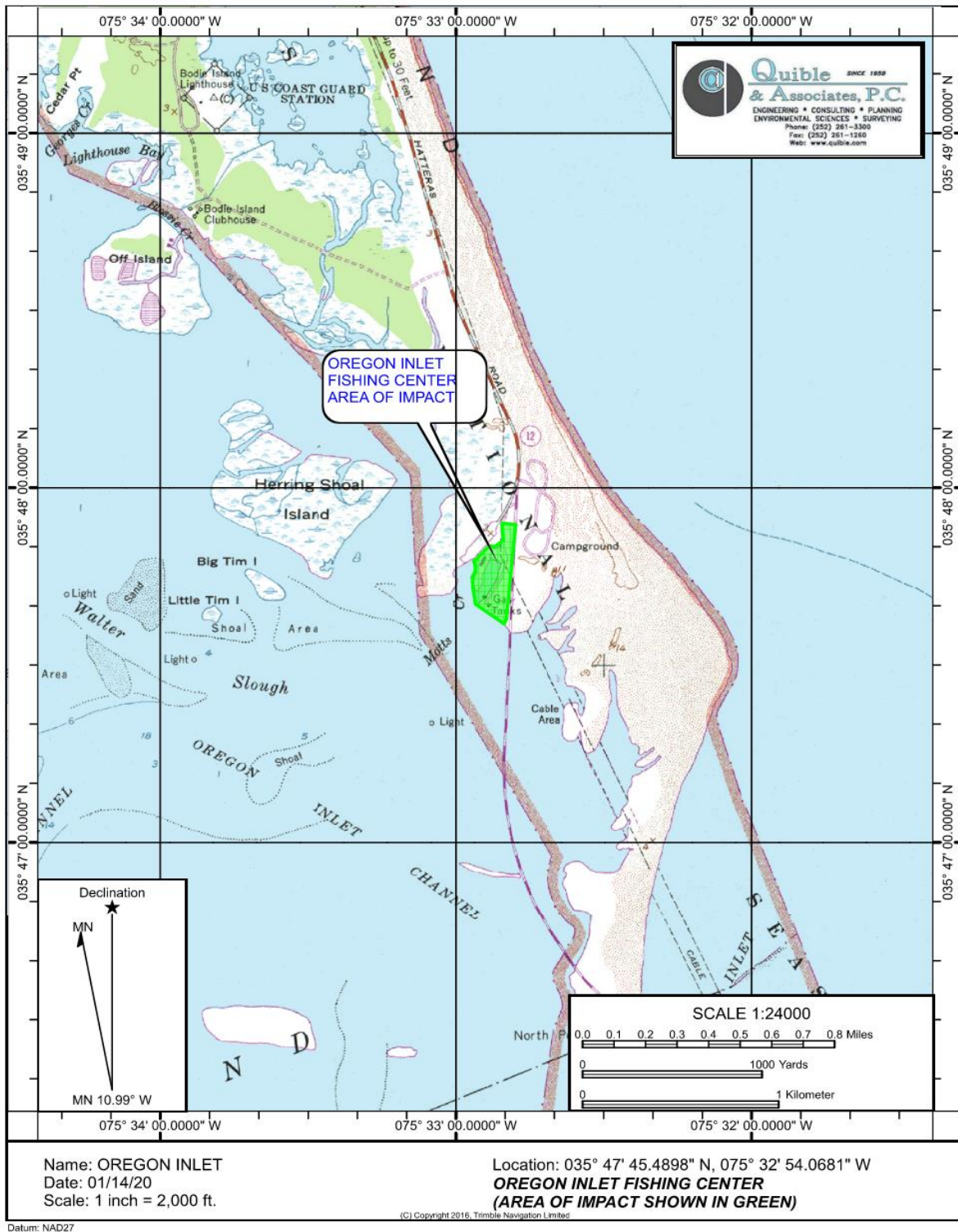
- The main marina building was constructed 1963 - 1964 and all of the buildings within the marina are in poor condition and vulnerable to storm surge and sea level rise
- The location of the marine fuel docks causes traffic congestion and safety hazards
- The existing improved parking areas are inadequate to meet customer, visitor and employee needs
- Existing pathways and driveways do not support safe and efficient pedestrian and vehicle traffic flows
- The existing viewshed, including the outbuildings and dumpsters on the northwest side of the main marina building, detract from the visitor experience and views in this area of the Seashore
- Some marina slips are too shallow to accommodate charter fishing boats and the marina will require maintenance dredging in the future

a. Brief History and Overview the Marina (Project Area)

Fishing operations and a marina in some form have been in place at Oregon Inlet for several decades. According to the Seashore's administrative history, a fishing center was in existence at Oregon Inlet prior to government ownership and NPS management of this area of Bodie Island. The NPS has permitted or contracted fishing center and marina operations at Oregon Inlet since 1953 and the marina has been in operation in its current location since December 1956. While some of the facilities and operations have changed over the years (for example, the facilities have previously housed a full-service restaurant and the main marina building has been added-on to meet operational needs), the marina operation has continuously provided charter fishing and associated services.

Today, the project area (+/- 11.3 acres) consists of a retail building (6,577 sq. ft.), marina basin (~ 1,580 linear ft with 61 existing wet slips), maintained landscape area (~ 1 acre), four (4) storage buildings (496 square feet), an exhibit building (168 square feet) asphalt parking area (~ 197 spaces), automobile fuel station booth (128 square feet), waste water systems, and a fuel system consisting of three 10,000 gallon ConVault above ground storage tanks and six dispensers serving both boats and motorists. Currently, the facility has a total impervious area of approximately 144,484 square feet or 3.32 acres. See Figure 2.

Figure 1 - Project Area Vicinity Map



b. Overview of the Environmental Assessment (EA) for the Proposed Project

The NPS is preparing a Site Plan and Environmental Assessment (EA) in order to evaluate strategies to replace vulnerable structures and conduct site improvements at the marina. The EA evaluates two alternatives: the (A) no-action alternative and (B) the proposed

action/preferred alternative. The EA analyzes the potential impacts these alternatives would have on the natural, cultural, historic, and human environment within the project area.

The no action alternative (Figure 2) would include repairing the main marina building, including raising the retail section to comply with local and Federal Emergency Management Act (FEMA) guidance. This alternative would also include maintenance dredging of the existing marina basin and leave all other site elements as they are today, with only general maintenance of buildings and grounds (performed by Lessee) performed on an as-needed basis.

The proposed action/preferred alternative (Figure 3) would include demolishing and replacing all the existing marina buildings within the project area and conducting other site improvements, including: formalizing informal parking areas and adding a driveway for air pump stations; upgrading the fuel system with in-slip fueling, constructing a new transient fuel dock (including associated dredging) and placing the vehicle fuel area in a new location with a new driveway; adding pedestrian paths and boardwalks; maintenance dredging of the existing marina basin; formalizing stormwater management infrastructure to handle runoff from impervious surfaces; and adding a new wastewater pump station and drainfield.

The EA is analyzing the impacts the proposed project (proposed action/preferred alternative) would have on the project area and includes consultation with the appropriate local, state and federal agencies. The project as proposed requires a North Carolina Division of Coastal Management (DCM) Coastal Area Management Act (CAMA) Major Permit including a NC Department of Environmental Quality (DEQ) Division of Energy Mineral and Land Resources (DEMLR) stormwater permit for new impervious development (redevelopment is exempt), a NC DEQ DEMLR Soil Erosion and Sedimentation Control (SESC) Permit (for disturbance greater than one acre) and a NC DEQ Division of Water Resources 401 Water Quality Permit. In addition, to these state permits, the proposed project will be reviewed by the United States Army Corps of Engineers (USACE) through the Joint 291 Process (as part of the CAMA Major Permit process).

c. Proposed Action

The proposed actions include replacing the existing marina structures with sustainable structures adapted to sea level rise and storm surge, and conducting other site improvements to modernize premises and to support the replacement buildings. The replacement buildings and upgraded infrastructure would improve visitor experience, formalize existing informal parking in order to meet visitor demand, and provide for improved and safer marine traffic flow with a marine fuel dock outside of the marina basin.

The proposed action includes the following activities (shown on Figure 3):

- Demolish all buildings currently in the project area (retail building - 6,577 sf., four (4) storage buildings – totaling 496 sf, an exhibit building - 168 sf, and automobile fuel station booth - 128 sf)
- Replace buildings with sustainable and resilient buildings with a first-floor elevation of 11-feet (relative to NAVD 88 and exceeding Dare County requirements by 3 feet and Federal Emergency Management Agency (FEMA) requirements by 6 feet) as follows:

- Main marina building (retail, food & beverage, and marina operations) +/- 6,393 sf first floor footprint
- Fish cleaning building +/- 1,880 sf
- Increase formal parking infrastructure to accommodate up to 293 automobiles
- Enhance vehicular and pedestrian circulation within in the lease premises and between adjacent uses (NPS Boat Ramp and Recreational Vehicle (RV) pump out) by adding secondary vehicular egress in the vehicle fuel area, constructing pedestrian paths and wooden boardwalks, and adding a driveway for air pump stations
- Replace existing marine fuel docks and aged fuel infrastructure with the following:
 - An ~ 900 sf fuel dock with two (2) fueling stations for transient boats in Motts Creek (outside of marina basin)
 - Seven (7) in-slip fueling stations located throughout the marina
- Replace existing fuel docks with up to six (6) boat slips
- Replace existing vehicle fuel in a new location with a new driveway
- Construct new on-site wastewater treatment and disposal system (+/- 1,600 gpd) to accommodate replacement buildings, including food and beverage services
- Enhance stormwater management by constructing formal Stormwater Control Measures (SCMs)
- Perform maintenance dredging of marina basin (+/- 113,400 sf) and portions of Motts Creek (+/- 43,717 sf) generating an estimated 10,000 cubic yards of material
- Place a removable, open-air events pavilion (+/- 3,400 sf) on the lease premises, which will be the personal property of the lessee (not real property of NPS)

The main marina building (replacement structure, including retail, food & beverage and marina operations with a first floor footprint +/- 6,393 sf) would be a pile-supported structure and elevated so that the finished floor elevation (FFE) would be at least 11.0 feet (relative to NAVD 88), which is three feet higher than the local (county) first floor requirement of 8.0 feet (NAVD 88) and six feet higher than the FEMA requirement of 5.0 feet (NAVD 88). Currently, the FFE of the retail structure and fish cleaning building (one unit) are at an elevation of 5.95 feet (NAVD 88). The 100-year flood elevation based on the current FEMA Flood Maps and a comparison of site topography is approximately 5.0 feet (NAVD 88). The fish cleaning building (replacement structure for fish cleaning services and operations, +/- 1,880 sf) would be a pile-support structure and elevated to a first floor elevation of 11.0 feet (NAVD 88), which is six feet higher than the 100-year flood plain elevation FEMA requirement (5.0 feet NAVD 88) and three feet higher than the county first floor requirement of 8.0 feet (NAVD 88).

The proposed site improvements to support the replacement buildings and to modernize the marina would also be designed for sustainability and resilience in a floodplain. The proposed additional formal parking infrastructure and other improvements related to vehicle and pedestrian circulation would include mitigations such as the use of permeable pavement. The improvements to the fuel system would include appropriate mitigative actions to protect the loss of fuel in the case of a 500-year flood such as: hurricane straps on the fuel tanks (already in place) and steel and double-walled fuel pipes. The drainfield of the proposed wastewater system will be elevated out of the 100-year floodplain. Stormwater control measures will function normally during regular rainfall events and offer stormwater retention and treatment. In general, stormwater control measures are situated lower than the areas of the property that they are designed to serve.

The proposed ~ 900 sf transient fuel dock would be typical wood construction with 6-8 feet on center pilings and decking and would be constructed of treated lumber (as specified by a structural engineer). The dock would be elevated a minimum of three feet above normal water level (NWL) at an elevation of approximately 3.5 feet (NAVD 88). In order to function as a fuel dock for boats in the water, the dock cannot be elevated above the 100-year or 500-year flood plain. The transient fuel dock would be secured and only accessible by marina personnel for the purposes of fueling vessels. The dock would not be open to the public for any activities, including, but not limited to, fishing.

The proposed removable, open-air events pavilion (+/-3,400 sf) will be the personal property of the lessee, thus not real property of NPS or of NPS consideration with regards to constructing capital improvements in a floodplain. However, by design, water will be able to freely flow through the open pavilion structure thus presenting little to no risk associated with flooding.

Construction activities would be conducted using conventional techniques. Dredge of Motts Creek and the man-made basin would be conducted by excavator on barge. Dredge spoils will be loaded onto scows and offloaded on site. Preliminarily, dredge spoils will be re-used on site to elevate roads and other infrastructure. Grain size analysis of the dredge spoil material indicates that spoils can be used for general fill and road subgrade. (See Figure 3 for water depths and dredge locations).

The transient fuel dock would be constructed of treated timber with an estimated 30 piles approximately 18” in diameter or greater and depending on the final structural engineering design. Piles would be driven with vibratory hammer and it is estimated that a total of ten piles would be driven per day. All in water construction would occur during the winter months (November through April) and coinciding with in-water work moratoriums so as not to interfere with any marine mammal or finned fish species that are more likely to be present during the warmer months.

Table 1: Permanent Pile Installation

Pile Type & Material	Pile Diameter (in.)	# of Piles	Install Method	# of seconds of vibration per pile*	Duration of pile driving activity (days)	Substrate and water depth in pile installation area	Confined Space or Open Water?
Timber	18”	30	Vibration	1800	3	Fine sand (0’ – 30’)	Open Water

Elevations Table

Number	Minimum Elevation	Maximum Elevation	Color
1	-11.000	-10.000	Blue
2	-10.000	-9.000	Light Blue
3	-9.000	-8.000	Light Green
4	-8.000	-7.000	Green
5	-7.000	-6.000	Yellow-Green
6	-6.000	-5.000	Yellow
7	-5.000	-4.000	Orange
8	-4.000	-3.000	Red-Orange
9	-3.000	-2.000	Red
10	-2.000	-1.000	Dark Red
11	-1.000	0.000	Brown
12	0.000	1.000	Dark Brown

COVERAGE WITHIN LEASE AREA

TOTAL EXISTING IMPERVIOUS COVERAGE 144,484 SF
 TOTAL PROPOSED DEMO (CREDIT) 30,087 SF
 TOTAL PROPOSED NEW COVERAGE 22,782 SF
 TOTAL PROPOSED TURFSTONE 18,702 SF

PARKING WITHIN LEASE AREA

TOTAL EXISTING PARKING SPACES: 197
 TOTAL PROPOSED SPACES (INCLUDES RESTRICTED SPACES): 293

NOTES:

- CURRENT OWNER: US GOVERNMENT (NATIONAL PARK SERVICE)
- LESSEE: OREGON INLET FISHING CENTER, LLC
 C/O RUSSELL KING
 8770 OREGON INLET ROAD
 NAGS HEAD, NC 27959
- PIN: 071700685112 / PID: 025076998
- PROPERTY ADDRESS: 8770 OREGON INLET ROAD
 NAGS HEAD, NC 27959
- SUBJECT REFERENCES: DB 1907, PG 0359;
- ALL EXISTING FEATURES FIELD SURVEYED BY QUILBE & ASSOCIATES, P.C. THIS IS NOT A BOUNDARY SURVEY. BATHYMETRIC INFORMATION SHOWN PER A FIELD SURVEY COMPLETED BY QUILBE & ASSOCIATES P.C. ALL DEPTHS ARE SHOWN RELATIVE TO MEAN LOWER LOW WATER (MLLW) (-0.7' NAVD83). AERIAL IMAGERY IS 2019 POST HURRICANE DORIAN IMAGERY PROVIDED BY NOAA. ALL INFORMATION SHOWN IS FOR DISCUSSION AND PERMITTING PURPOSES ONLY.
- US COAST GUARD DREDGE AREA DIVIDED FOR INFORMATION PROVIDED IN THE REPORT TITLED "SUBSURFACE INVESTIGATION AND GEOTECHNICAL LABORATORY AND TOLP RESULTS WALTER SLOUGH AND USCG STATION OREGON INLET DARE COUNTY, NORTH CAROLINA" PREPARED BY ANAMAR ENVIRONMENTAL CONSULTING.

LEGEND

EXISTING ASPHALT PAVEMENT
 EXISTING CONCRETE
 PROPOSED DEMOLITION
 EX. UTILITY POLE
 EX. FIRE HYDRANT
 EX. WATER VALVE
 EX. SEWER MANHOLE
 EX. WATER METER
 EX. ELECTRICAL CONNECTION
 EX. EXTERIOR LIGHT
 EX. LIGHT POLE
 PROPOSED CONCRETE
 PROPOSED ASPHALT
 PROPOSED PERMEABLE PAVEMENT
 PROPOSED RIP RAP

NOTES:

THIS MAP IS NOT A CERTIFIED SURVEY AND HAS NOT BEEN REVIEWED BY A LOCAL GOVERNMENT AGENCY FOR COMPLIANCE WITH ANY APPLICABLE LAND DEVELOPMENT REGULATIONS.

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NOTES:

THIS MAP IS NOT A CERTIFIED SURVEY AND HAS NOT BEEN REVIEWED BY A LOCAL GOVERNMENT AGENCY FOR COMPLIANCE

d. Minimization Measures

During project development, a series of plans to identify Best Management Practices (BMPs) and reasonable measures that address anticipated environmental impacts would be developed that may include an erosion and sediment control plan, stormwater management measures, and material containment and spill prevention control. These measures are in addition to, and complement, any permits that may be issued for the project.

General BMPs that the lessee and its contractor/s would follow and implement include the following:

- Compliance with state and federal safety laws.
- Confirmation that construction equipment is free of any fluid leaks.
- Construction zones would be clearly marked on land. Fencing and other type of approved in-water temporary barriers would be installed.
- In-water project activities would occur between November and April (coinciding with in-water work moratoriums).

NPS will provide additional standard conditions for construction through construction approval documents. The conditions in the construction approval would include the following:

- Lessee is required to seek state and federal permit authorizations for project actions including but not limited to Section 404, Section 401 Water Quality Certification and a Coastal Area Management Act (CAMA) Major permit. A CAMA Major permit application has been submitted for the proposed activities discussed herein.
- Lessee will forward a copy of all other agency permits related to the undertaking of the project. Copies would be forwarded to the park's compliance office for inclusion in the project's administrative record.
- NPS will be required to monitor the project area for marine mammal presence and in-water pile driving will be avoided April 1 through May 31, to the extent practicable, for protection of the North Atlantic right whale.

Based on existing conditions and anecdotal observations by NPS, there is no suitable nesting habitat available for sea turtles that occurs within the project area. The Lessee and its contractors would comply with the following protected species construction conditions as described in NMFS's "Sea Turtle and Smalltooth Sawfish Construction Conditions" and apply these conditions to listed species identified in Table 3:

- a) The Lessee and its contractor/s should instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with ESA-listed species.
- b) The Lessee and its contractor/s should advise construction personnel that there are civil and criminal penalties for harming, harassing, or killing ESA-listed species, which are protected under the Endangered Species Act of 1973.
- c) Siltation barriers (sediment curtains) will not be used during construction of the proposed project due to high tidal flows and coarse sediment present within the action area. Any turbidity issues would be localized and dissipate quickly. Therefore, ESA-listed species cannot become entangled or entrapped.

- d) All vessels associated with the construction project should operate at “no wake/idle” speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- e) If ESA-listed species is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions should be implemented to ensure its protection. These precautions would include cessation of operation of any moving equipment closer than 50 feet of an ESA-listed species. Operation of any mechanical construction equipment would cease immediately if an ESA-listed species is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f) Any collision with and/or injury to ESA-listed species would be reported immediately to the National Marine Fisheries Service’s Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
- g) Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

2) ACTION AREA

Pursuant to 50 C.F.R. § 402.02, the term action area is defined as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.” Accordingly, the action area typically includes the affected jurisdictional waters and other areas affected by the authorized work or structures within a reasonable distance. The ESA regulations recognize that, in some circumstances, the action area may extend beyond the limits of the NPS’s regulatory jurisdiction.

For the purposes of this consultation, the NPS has defined the project area to include the lease area, which encompasses approximately 11 acres and includes the Oregon Inlet Fishing Center, man-made marina basin and portion of Motts Creek for installation of the transient fuel dock (see Figures 1, 2 and 3).

The action area includes estuarine habitat including, estuarine waters, and an intertidal shoreline and soft subtidal substrate. There are not any documented areas of Submerged Aquatic Vegetation (SAV) or shell bottom within the project area. Oregon Inlet is subject to littoral processes typical of the barrier islands that line the North Carolina coast. Oregon Inlet is subject to winds, rising sea levels and strong storms that gradually push sand from the ocean side of the islands to the land side. The action area also includes the intertidal and subtidal unconsolidated bottoms found within the inlet complex.

3) AFFECTED SPECIES/HABITAT

Project activities have the potential to affect the listed species as shown in Table 3 below.

Table 3: Species in the action area

Species	ESA Listing Status	Listing Rule/Date	Most Recent recovery plan date	USACE Effect Determination (Species)
Green sea turtle ¹	T	81 FR 20057/ April 6, 2016	October 1991	NLAA
Kemp's ridley sea turtle	E	35 FR 18319/ December 2, 1970	September 2011	NLAA
Leatherback sea turtle	E	35 FR 8491/ June 2, 1970	April 1992	NE
Loggerhead sea turtle ²	T	76 FR 58868/ September 22, 2011	January 2009	NLAA
Hawksbill sea turtle	E	35 FR 8491/ June 2, 1970	December 1993	NE
Atlantic sturgeon (Carolina DPS) ³	T/E	77 FR 5914/ February 6, 2012	N/A	NLAA

We believe the project will have no effect on hawksbill and leatherback sea turtles, due to the species' very specific life history strategies, which are not supported at the project site. Leatherback sea turtles have pelagic, deepwater life history, where they forage primarily on jellyfish. Hawksbill sea turtles typically inhabit inshore reef and hard bottom areas where they forage primarily on encrusting sponges.

Source: NCNHP, 2019; NOAA Fisheries, 2020

KEY:

E = endangered

T = threatened

NLAA = May Affect, Not Likely to Adversely Affect

Sea Turtles

The **green sea turtle** (*Chelonia mydas*) has been documented to occur in coastal areas of Dare, Onslow, New Hanover, and Brunswick Counties of North Carolina. In North Carolina, adult green sea turtles feed on seagrass. The closest sea grass or submerged aquatic vegetation (SAV) beds are located approximately 0.10 miles south of the action area within Pamlico Sound, therefore adequate potential foraging habitat is not present within the action area for the green sea turtles. There are also no known occurrences of this species recorded in the vicinity of the action area (NCNHP, 2019; Seaturtle.org). Based on data collected from NPS field biologists, zero (0) sea turtles have nested within the action area footprint. False crawls have been observed beginning 0.25 miles away from the action area with suitable nesting habitat approximately 0.5

¹ North Atlantic and South Atlantic DPS

² Northwest Atlantic Ocean DPS

³ The New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPSs are listed as endangered; the Gulf of Maine DPS is listed as threatened.

miles away from the action area.

While the **Kemp's ridley sea turtle** (*Lepidochelys kempii*) is rarely found in North Carolina, numbers of this species sighted in North Carolina may be on the increase. This species prefers coastal waters. USFWS indicates that this species has occurred only in Pamlico County within the past 20 years (USFWS, 2003). There are no known occurrences of this species recorded in the vicinity of the project area (NCNHP, 2019; Seaturtle.org).

The **loggerhead sea turtle** (*Caretta caretta*) is distributed widely in its range, including the entire North Carolina coast. It is often found hundreds of miles out to sea but can also be found in inshore areas such as bays, lagoons, salt marshes, creeks, ship channels, and the mouths of large rivers. Feeding areas are typically coral reefs, rocky places, and shipwrecks (USFWS, 2003). These potential feeding areas are not located within the project area. Young loggerheads are often found in SAV beds and nesting occurs mainly on open beaches or along narrow bays with suitable soil (USFWS, 2003). These areas are not located within the immediate vicinity of the proposed action area of the project and have not been observed by NPS biologists. NCNHP shows occurrences of the loggerhead in the vicinity of Hatteras Inlet over the past several decades (NCNHP, 2019, Seaturtle.org), however, NPS biologists have confirmed no known sea turtle nesting occurs within the project footprint due to lack of suitable nesting and foraging habitat. Based on data collected from NPS field biologists, zero (0) sea turtles have nested within the action area footprint. Nest occurrences and observations of false crawls are 0.25 to 0.5 miles away from the action area and therefore the proposed action would not likely adversely affect the loggerhead sea turtle. Individual turtles may utilize the inlet channels temporarily during migration events, but the rarity of its occurrence in the vicinity of the action area makes impacts to this species unlikely.

Atlantic sturgeon

Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) spawn in freshwater but spend most of their adult life in the marine environment. Spawning adults generally migrate upriver in the spring/early summer (Smith and Clugston, 1997). Spawning is believed to occur in flowing water between the salt front and fall line of large rivers. Post-larval juveniles move downstream into brackish waters and eventually move to estuarine waters where they reside for a period of months or years (Moser and Ross, 1995). Subadult and adult Atlantic sturgeons emigrate from rivers into coastal waters where they may undertake long range migrations. Migratory subadult and adult sturgeon are typically found in (10 to 50 m) nearshore waters with gravel and sand substrates (Collins and Smith, 1997; Stein *et al.*, 2004). Although extensive mixing occurs in coastal waters, Atlantic sturgeons return to their natal river to spawn (ASSRT, 2007). The Carolina DPS encompasses Atlantic sturgeons from the Roanoke, Tar/Pamlico, Cape Fear, Waccamaw, Pee Dee, and Santee-Cooper Rivers. In NC, spawning occurs in the Roanoke, Tar-Pamlico, and Cape Fear River systems and possibly in the Neuse River (ASSRT, 2007). Based on incidental capture data from tagging cruises, shallow nearshore ocean waters along the NC coast may represent a winter (January-February) aggregation site for Atlantic sturgeons (Laney *et al.*, 2007). Incidental captures typically occurred over sand substrate in nearshore waters that were less than 59 ft deep.

4) ROUTE(S) OF EFFECT TO SPECIES:

Effects to ESA-listed species may include the risk of direct physical impact from contact with barges and in-water construction activities. We believe the risk of physical injury is discountable due to the species' ability to move away from the project site and into adjacent suitable habitat, if disturbed. Additionally, we believe that implementation of the minimization measures will make vessel strikes extremely unlikely for listed species. Construction workers will be required to observe in-water related activities for the presence of listed species. If a listed species is seen within 100 yards (91.5 meters) of the active daily construction operation or vessel movement, all appropriate precautions would be implemented to ensure its protection. These precautions would include cessation of operation of any moving equipment closer than 50 feet of a listed species. Operation of any mechanical construction equipment would cease immediately if a listed species is seen within a 50-foot radius of the equipment. Activities may not resume until the species has departed the project area of its own volition. Further, construction would be limited to daylight hours (6 am to 6 pm) and the marina "down" season (November through March). Limiting construction to daylight hours and the fall and winter months will not only assist construction workers in seeing listed species if present, but also avoiding interactions with them altogether as the likelihood of any species being present are limited due to the season

ESA-listed species may be physically injured if struck during dredging. This is extremely unlikely to occur due to the species' mobility and the type of dredge used for this project, therefore the effect is highly unlikely. NMFS has previously determined in dredging Biological Opinions (e.g., (NMFS 2007)) that, while ocean-going hopper-type dredges may lethally entrain sturgeon, non-hopper type dredging methods, such as what will be used in this project, are slower and extremely unlikely to adversely affect sea turtles and Atlantic sturgeon. Additionally, the minimization measures mentioned above with help further reduce the risk.

ESA-listed species may be temporarily affected by the inability to access the project area for foraging, refuge, and/or nursery habitat, due to their avoidance of construction activities and related noise. NPS has determined that these effects will be insignificant. The site does not contain any structure that could be used by listed species for shelter. ESA-listed species may forage in the inlet area but the size of the action area from which animals will be excluded is relatively small in comparison (<1 acre) to the available similar habitat nearby in Hatteras Inlet and Pamlico Sound. In addition, any disturbances to listed species would be temporary, limited to approximately 180 days of in-water construction, after which the site conditions are expected to return to background levels and animals will be able to return.

Atlantic sturgeon may be affected from the potential loss of foraging habitat due to the minor, maintenance dredging that will occur in the marina basin; however, we believe this effect will be insignificant. Atlantic sturgeon are opportunistic feeders that forage over large areas and will be able to locate prey beyond the small dredging footprint (3.6 acres of total impact; however, this area includes nearly 2.6 acres of an existing and established marina where only minimal maintenance dredging will occur). Also, impacts to foraging resources from dredging are temporary since benthic invertebrate populations in dredged areas have been observed to recover in 3-24 months after dredging (Culter and Mahadevan 1982; Saloman et al. 1982; Wilber et al. 2007).

Noise created by pile driving activities can physically injure animals or change animal behavior in the affected areas. Injurious effects can occur in 2 ways. First, immediate adverse effects can occur to listed species if a single noise event exceeds the threshold for direct physical injury. Second, effects can result from prolonged exposure to noise levels that exceed the daily cumulative exposure threshold for the animals, and these can constitute adverse effects if animals are exposed to the noise levels for sufficient periods. Behavioral effects can be adverse if such effects interfere with animals migrating, feeding, resting, or reproducing, for example. Our evaluation of effects to listed species as a result of noise created by construction activities is based on the analysis prepared in support of the Opinion for SAJ-82 and NMFS 2018. The noise analysis in this consultation evaluates effects to ESA-listed species identified by NMFS as potentially affected in the table above.

Based on NMFS noise calculations, installation of timber piles by vibratory hammer will not result in injurious noise effects for sea turtles and ESA-listed fish. Yet, this installation method could result in behavioral effects at radii of 152 feet (46 meters) for sea turtles and 707 feet (215 meters) for ESA-listed fishes. Given the mobility of ESA-listed species, we expect them to move away from noise disturbances. Because there is similar habitat nearby, we believe this effect will be insignificant. If an individual chooses to remain within the behavioral response zone, it could be exposed to behavioral noise impacts during pile installation. Since installation will occur only during the day, these species will be able to resume normal activities during quiet periods between pile installations and at night. Therefore, installation of metal sheet piles by vibratory hammer will not result in injurious noise effect to sea turtles and ESA-listed fish, and we anticipate any behavioral effects will be insignificant.

5) ROUTES OF EFFECT TO CRITICAL HABITAT

The proposed project is not located in designated critical habitat and there are no potential routes of effect to any designated critical habitat.

6) DETERMINATION:

The NPS has reviewed the proposed project for its impacts to federally listed species and their DCH. The NPS has concluded the proposed project as designed may affect but is not likely to adversely affect all five marine sea turtle species, and Atlantic sturgeon as listed in Table 3. This analysis was prepared based on the best scientific and commercial data available.

The NPS is requesting National Marine Fisheries Service's (NMFS's) written concurrence with these determinations. The NPS appreciates your cooperation in completing this expedited informal Section 7 Consultation by concurring with the NPS's effect determination(s) in a timely manner. If NMFS disagrees with the NPS's effect determination(s) and requests formal Section 7 consultation, please contact the below referenced Project Manager to discuss suggested modifications to the action to avoid potential adverse effects and NMFS's additional information needs. The NPS will continue to coordinate with NMFS office via email to provide the requested information and, if warranted, a revised effects determination.

If you have questions, please contact Tracy A. Ziegler, Chief of Resource Management and Science for the National Parks of Eastern North Carolina at (252) 475-9016 or tracy_ziegler@nps.gov before January 3rd, 2021. After that date, please contact Meaghan Johnson, Acting Chief of Resource Management and Science at (252) 475-9020 or meaghan_johnson@nos.gov. Please reference file number 1.A.1.(CAHA-R) in all correspondence related to this consultation.

Sincerely,

Tracy A. Ziegler, Ph.D.

Tracy A. Ziegler, Ph. D.
Chief of Resource Management and Science
Cape Hatteras National Seashore

References

- Atlantic Sturgeon Status Review Team (ASSRT), 2007. Status Review of the Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*). Available at <https://repository.library.noaa.gov/view/noaa/16197>. Accessed April 2, 2019.
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Blizzard Merrill, Sarah M

From: Warren Eadus <eadus@quible.com>
Sent: Tuesday, March 24, 2020 4:11 PM
To: Carl.Dunn@ncdenr.gov; samir.dumpor@ncdenr.gov; randall.jones@ncdenr.gov; maria.dunn@ncwildlife.org; anthony.scarbraugh@ncdenr.gov; chris.pullinger@ncdenr.gov; yvonne.carver@ncdenr.gov; Ronald.Renaldi@ncdenr.gov; kelly.spivey@ncdenr.gov; gregg.bodnar@ncdenr.gov; James.Harrison@ncdenr.gov; anne.deaton@ncdenr.gov; renee.gledhill-earley@ncdcr.gov; Josh.R.Pelletier@usace.army.mil; raleigh.w.bland@usace.army.mil; billy.w.standridge@usace.army.mil; Twyla.Cheatwood@noaa.gov; kathryn_matthews@fws.gov; joshc@darenc.com; holden.mcclenney@ncdenr.gov; ruth.strauss@ncdenr.gov
Cc: rking@oregon-inlet.com; Blizzard Merrill, Sarah M; Henry, Sabrina S; Hardison, Lyn; Troy Murphy
Subject: Oregon Inlet Fishing Center
Attachments: Oregon Inlet Fishing Center Project Overview.pdf

All,

Good afternoon. Hope you are all doing well. On behalf of the NPS and the Lessee, OIFC, LLC (Russell King), I would like to present you with the attached information intended to act as a "Virtual Interagency Scoping Meeting" to discuss the proposed improvements to the Oregon Inlet Fishing Center. Please take the time to review the attached Project Narrative, USGS Vicinity Map and Conceptual Sketch for a description of the proposed project. The proposed work is on federal (managed by NPS) land and the NPS has entered into a lease with OIFC, LLC to construct the illustrated improvements as shown on the attached drawing and manage the Fishing Center.

Quible and the NPS are working on a NEPA Document for this project, and we want to be sure that we are not overlooking any permitting requirements or any agency notifications. SHPO, USFWS and NMFS have already been contacted for Consultation and we appreciate your replies.

Please acknowledge receipt of this email and attachment and submit any comments, questions, suggestions or requests for more information directly to me at eadus@quible.com or 252.491.8147.

Thanks,

Warren D. Eadus, P.G.
President
Quible & Associates, P.C.
8466 Caratoke Hwy, Bldg 400
Powells Point NC 27966
PO Drawer 870
Kitty Hawk, NC 27949
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f 252.491.8146
m 252.202.8166
www.quible.com



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Blizzard Merrill, Sarah M

From: Harrison, James A <James.Harrison@ncdenr.gov>
Sent: Tuesday, March 31, 2020 2:50 PM
To: Warren Eadus
Subject: Re: [External] Oregon Inlet Fishing Center

Good afternoon Warren,

The biggest concern that I've got is that there's a historical record of submerged aquatic vegetation (SAV) just outside of the inlet. With that, we'd like there to be an SAV survey prior to work commencing. The only other item is that since this is an inlet, we would typically request a moratorium for in-water work to not occur from April 1 through July 30. Exceptions can be made, though, depending on the work to be done. But that's pretty much it for us. Thanks Warren!

Jimmy

Jimmy Harrison
Habitat and Enhancement Section
NC Division of Marine Fisheries
james.harrison@ncdenr.gov
252-948-3835



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From: Warren Eadus <eadus@quible.com>
Sent: Monday, March 30, 2020 2:31 PM
To: Harrison, James A <James.Harrison@ncdenr.gov>
Subject: RE: [External] Oregon Inlet Fishing Center

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Jimmy,

Thank you for the reply. There will be some piling removal in the interior of the basin when the existing fuel slips are reconfigured. We have not talked about providing a sediment curtain for these activities. We have not performed an SAV survey in the project area and have not been directed to by the NPS. If we are directed to conduct an SAV survey we would be glad to do it.

There has been some ongoing maintenance and repairs of the finger piers and existing slips this winter that was conducted under a Categorical Exclusion.

Thanks,

Warren D. Eadus, P.G.
President
Quible & Associates, P.C.
8466 Caratoke Hwy, Bldg 400
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From: Harrison, James A <James.Harrison@ncdenr.gov>
Sent: Monday, March 30, 2020 2:24 PM
To: Warren Eadus <eadus@quible.com>
Subject: Re: [External] Oregon Inlet Fishing Center

Good afternoon Warren,

I just have a couple quick questions for you regarding the OIFC project. First, will any pilings be removed/installed? If so, will there be any measures in place to reduce the effects of turbidity (i.e. turbidity curtains)? Lastly, will any SAV surveys be completed? Thanks!

Jimmy

Jimmy Harrison
Habitat and Enhancement Section
NC Division of Marine Fisheries
james.harrison@ncdenr.gov
252-948-3835



Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Warren Eadus <eadus@quible.com>
Sent: Tuesday, March 24, 2020 4:11 PM
To: Dunn, Carl <Carl.Dunn@ncdenr.gov>; Dumpor, Samir <samir.dumpor@ncdenr.gov>; Jones, Jerry R

<Randall.Jones@ncdenr.gov>; Dunn, Maria T. <maria.dunn@ncwildlife.org>; Scarbraugh, Anthony <anthony.scarbraugh@ncdenr.gov>; Pullinger, Robert C <chris.pullinger@ncdenr.gov>; Carver, Yvonne <yvonne.carver@ncdenr.gov>; Renaldi, Ronald <ronald.renaldi@ncdenr.gov>; Spivey, Kelly <kelly.spivey@ncdenr.gov>; Bodnar, Gregg <gregg.bodnar@ncdenr.gov>; Harrison, James A <James.Harrison@ncdenr.gov>; Deaton, Anne <anne.deaton@ncdenr.gov>; Gledhill-earley, Renee <renee.gledhill-earley@ncdcr.gov>; Josh.R.Pelletier@usace.army.mil <Josh.R.Pelletier@usace.army.mil>; raleigh.w.bland@usace.army.mil <raleigh.w.bland@usace.army.mil>; billy.w.standridge@usace.army.mil <billy.w.standridge@usace.army.mil>; Twyla.Cheatwood@noaa.gov <Twyla.Cheatwood@noaa.gov>; kathryn_matthews@fws.gov <kathryn_matthews@fws.gov>; joshc@darenc.com <joshc@darenc.com>; McClenney, Holden W <holden.mcclenney@ncdenr.gov>; Strauss, Ruth <ruth.strauss@ncdenr.gov>
Cc: rking@oregon-inlet.com <rking@oregon-inlet.com>; Blizzard Merrill, Sarah M <Sarah_Blizzard_Merrill@nps.gov>; Henry, Sabrina S <Sabrina_Henry@nps.gov>; Hardison, Lyn <lyn.hardison@ncdenr.gov>; Troy Murphy <tmurphy@quible.com>

Subject: [External] Oregon Inlet Fishing Center

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All,

Good afternoon. Hope you are all doing well. On behalf of the NPS and the Lessee, OIFC, LLC (Russell King), I would like to present you with the attached information intended to act as a "Virtual Interagency Scoping Meeting" to discuss the proposed improvements to the Oregon Inlet Fishing Center. Please take the time to review the attached Project Narrative, USGS Vicinity Map and Conceptual Sketch for a description of the proposed project. The proposed work is on federal (managed by NPS) land and the NPS has entered into a lease with OIFC, LLC to construct the illustrated improvements as shown on the attached drawing and manage the Fishing Center.

Quible and the NPS are working on a NEPA Document for this project, and we want to be sure that we are not overlooking any permitting requirements or any agency notifications. SHPO, USFWS and NMFS have already been contacted for Consultation and we appreciate your replies.

Please acknowledge receipt of this email and attachment and submit any comments, questions, suggestions or requests for more information directly to me at eadus@quible.com or 252.491.8147.

Thanks,

Warren D. Eadus, P.G.
President
Quible & Associates, P.C.
8466 Caratoke Hwy, Bldg 400
Powells Point NC 27966
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Blizzard Merrill, Sarah M

From: Scarbraugh, Anthony <anthony.scarbraugh@ncdenr.gov>
Sent: Wednesday, March 25, 2020 11:29 AM
To: Warren Eadus; Dunn, Carl; Dumpor, Samir; Jones, Jerry R; Dunn, Maria T.; Pullinger, Robert C; Carver, Yvonne; Renaldi, Ronald; Spivey, Kelly; Bodnar, Gregg; Harrison, James A; Deaton, Anne; Gledhill-earley, Renee; Josh.R.Pelletier@usace.army.mil; raleigh.w.bland@usace.army.mil; billy.w.standridge@usace.army.mil; Twyla.Cheatwood@noaa.gov; kathryn_matthews@fws.gov; joshc@darenc.com; McClenney, Holden W; Strauss, Ruth; Edgerton, Thom; Tankard, Robert; May, David
Cc: rking@oregon-inlet.com; Blizzard Merrill, Sarah M; Henry, Sabrina S; Hardison, Lyn; Troy Murphy
Subject: RE: [External] Oregon Inlet Fishing Center

Mr. Eadus,

Based on the review of the provided information, the Division of Water Resources (DWR) has the following comments as points of consideration prior to the implementation of the subject project:

1. Any expansion of slippage and facilities outside of the existing facility footprint may not result in further expansion of shellfish water closure. Coordination with Shellfish Sanitation and Division of Energy, Mining, and Land Resources is recommended.
2. Coordination with the US Army Corps of Engineers and Division of Coastal Management field staff prior to the implementation of the project to determine the extent of wetland and waters on the site within their respective jurisdiction is recommended.
3. DWR recommends coordination with DEMLR on requirements of NCG190000 the proposed Marina improvements.
4. Any fish and seafood packing and rinsing onsite will require coordination with DWR to ensure that the requirements for proper treatment and disposal are met via either by collection and disposal via onsite wastewater system or submittal of documentation to DWR to obtain either a NCG530000 or possible an individual permit (whatever is applicable).
5. If applicable, any onsite boat washing and/or maintenance taking place or planned, the applicant will need to provide plans for the project that outline what permitted waste water disposal options will be utilized for boat wash wastewater management to complies with permitting requirements of 15A NCAC 02T .1003(a)(3). In addition, a more detailed Operation and Maintenance plans for the proposed facility will need to specifically address how all overspray water generated during wash down will be contained (via curtains to enclose the boats or within a building). Also, the plan will need to provide specific details regarding the removal of excess residual of the wash down pad to ensure storm water discharge does not become a waste water discharge.

If you have any questions, please feel free to contact me.

Regards,
Anthony Scarbraugh



Anthony Scarbraugh
Environmental Specialist II, Water Resources
North Carolina Department of Environmental Quality
252.948.3924 (Office)
Anthony.Scarbraugh@ncdenr.gov

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Warren Eadus [mailto:eadus@quible.com]

Sent: Tuesday, March 24, 2020 4:11 PM

To: Dunn, Carl <Carl.Dunn@ncdenr.gov>; Dumpor, Samir <samir.dumpor@ncdenr.gov>; Jones, Jerry R <Randall.Jones@ncdenr.gov>; Dunn, Maria T. <maria.dunn@ncwildlife.org>; Scarbraugh, Anthony <anthony.scarbraugh@ncdenr.gov>; Pullinger, Robert C <chris.pullinger@ncdenr.gov>; Carver, Yvonne <yvonne.carver@ncdenr.gov>; Renaldi, Ronald <ronald.renaldi@ncdenr.gov>; Spivey, Kelly <kelly.spivey@ncdenr.gov>; Bodnar, Gregg <gregg.bodnar@ncdenr.gov>; Harrison, James A <James.Harrison@ncdenr.gov>; Deaton, Anne <anne.deaton@ncdenr.gov>; Gledhill-earley, Renee <renee.gledhill-earley@ncdcr.gov>; Josh.R.Pelletier@usace.army.mil; raleigh.w.bland@usace.army.mil; billy.w.standridge@usace.army.mil; Twyla.Cheatwood@noaa.gov; kathryn_matthews@fws.gov; joshc@darenc.com; McClenney, Holden W <holden.mcclenney@ncdenr.gov>; Strauss, Ruth <ruth.strauss@ncdenr.gov>

Cc: rking@oregon-inlet.com; Blizzard Merrill, Sarah M <Sarah_Blizzard_Merrill@nps.gov>; Henry, Sabrina S <Sabrina_Henry@nps.gov>; Hardison, Lyn <lyn.hardison@ncdenr.gov>; Troy Murphy <tmurphy@quible.com>

Subject: [External] Oregon Inlet Fishing Center

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All,

Good afternoon. Hope you are all doing well. On behalf of the NPS and the Lessee, OIFC, LLC (Russell King), I would like to present you with the attached information intended to act as a "Virtual Interagency Scoping Meeting" to discuss the proposed improvements to the Oregon Inlet Fishing Center. Please take the time to review the attached Project Narrative, USGS Vicinity Map and Conceptual Sketch for a description of the proposed project. The proposed work is on federal (managed by NPS) land and the NPS has entered into a lease with OIFC, LLC to construct the illustrated improvements as shown on the attached drawing and manage the Fishing Center.

Quible and the NPS are working on a NEPA Document for this project, and we want to be sure that we are not overlooking any permitting requirements or any agency notifications. SHPO, USFWS and NMFS have already been contacted for Consultation and we appreciate your replies.

Please acknowledge receipt of this email and attachment and submit any comments, questions, suggestions or requests for more information directly to me at eadus@quible.com or 252.491.8147.

Thanks,

Warren D. Eadus, P.G.
President
Quible & Associates, P.C.
8466 Caratoke Hwy, Bldg 400
Powells Point NC 27966
PO Drawer 870

Kitty Hawk, NC 27949
t 252.491.8147
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Blizzard Merrill, Sarah M

From: Warren Eadus <eadus@quible.com>
Sent: Friday, December 11, 2020 11:55 AM
To: Strauss, Ruth
Subject: RE: [External] RE: Oregon Inlet Fishing Center
Attachments: OREGON INLET FISHING CENTER GREG CHAMBERS.pdf

Ruth,

Just to follow up on our conversation below (fuel line conceptual layout attached). We have a rough layout of the fuel lines and can confirm that the volume is well less than 10% of the total volume of fuel (30K) stored in the existing ASTs. Based on the initial designs from the fuel installation provider (see attached), the total length of the two types of product lines are as follows:

920 Lf of 2" Diesel = +/- 150 gallons
530 Lf of 2" Diesel = +/- 87 gallons
530 Lf of 1.5" Gasoline = +/- 49 gallons

Total estimated gallonage underground is conservatively 300 gallons which is 1% of total AST storage. We are confident that we will be below the 10% threshold.

Happy Holidays and Thanks,

Warren D. Eadus, P.G.
President
Quible & Associates, P.C.
8466 Caratoke Hwy, Bldg 400
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From: Strauss, Ruth <ruth.strauss@ncdenr.gov>
Sent: Thursday, July 16, 2020 5:04 PM
To: Warren Eadus <eadus@quible.com>
Subject: RE: [External] RE: Oregon Inlet Fishing Center

Hi Warren;

One more question. Do you know the volume (roughly) of the underground piping associated with the future fueling system relative to the volume of the aboveground structures? If 10% or more of the total volume of fuel accumulation or storage (including a combination of ASTs, aboveground piping and underground piping) is underground, then the fueling system would be considered an underground storage tank. Just want to make certain the fueling system can't be considered a UST system.

Thanks,

Ruth



Ruth A. Strauss, L.G.
Head, UST Permits and Inspection Branch
UST Section, Division of Waste Management
North Carolina Department of Environmental Quality
919.707.8299 (Office & Fax)
Ruth.Strauss@ncdenr.gov

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Warren Eadus <eadus@quible.com>
Sent: Monday, June 22, 2020 1:46 PM
To: Strauss, Ruth <ruth.strauss@ncdenr.gov>
Subject: RE: [External] RE: Oregon Inlet Fishing Center

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Ruth,
There are three 10K gallon ConVault tanks (see attached photo showing the tanks and existing conditions Site Plan).

Thanks,

Warren D. Eadus, P.G.
President
Quible & Associates, P.C.
8466 Caratoke Hwy, Bldg 400
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From: Strauss, Ruth <ruth.strauss@ncdenr.gov>
Sent: Monday, June 22, 2020 1:37 PM

To: Warren Eadus <eadus@quible.com>

Subject: RE: [External] RE: Oregon Inlet Fishing Center

Thanks Warren. How many ASTs are located out there and what are the sizes?



Ruth A. Strauss, L.G.
Head, UST Permits and Inspection Branch
UST Section, Division of Waste Management
North Carolina Department of Environmental Quality
919.707.8299 (Office & Fax)
Ruth.Strauss@ncdenr.gov

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Warren Eadus <eadus@quible.com>

Sent: Monday, June 22, 2020 1:08 PM

To: Strauss, Ruth <ruth.strauss@ncdenr.gov>

Subject: RE: [External] RE: Oregon Inlet Fishing Center

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Ruth,

Thanks for the reply. All tanks are above ground, existing, and will remain above ground. There are no new tanks proposed, just new dispensers.

Thanks again,

Warren D. Eadus, P.G.

President

Quible & Associates, P.C.

8466 Caratoke Hwy, Bldg 400

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From: Strauss, Ruth <ruth.strauss@ncdenr.gov>

Sent: Monday, June 22, 2020 12:19 PM

To: Warren Eadus <eadus@quible.com>

Subject: RE: [External] RE: Oregon Inlet Fishing Center

Hi Warren:

I received your e-mail. Does the current fueling system incorporate any underground storage tanks and will the proposed fueling station incorporate any underground storage tanks?

Thanks,

Ruth



Ruth A. Strauss, L.G.
Head, UST Permits and Inspection Branch
UST Section, Division of Waste Management
North Carolina Department of Environmental Quality
919.707.8299 (Office & Fax)
Ruth.Strauss@ncdenr.gov

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From: Warren Eadus <eadus@quible.com>

Sent: Monday, June 22, 2020 10:54 AM

To: Dunn, Carl <Carl.Dunn@ncdenr.gov>; Dumpor, Samir <samir.dumpor@ncdenr.gov>; Jones, Jerry R <Randall.Jones@ncdenr.gov>; Dunn, Maria T. <maria.dunn@ncwildlife.org>; Scarbraugh, Anthony <anthony.scarbraugh@ncdenr.gov>; Pullinger, Robert C <chris.pullinger@ncdenr.gov>; Carver, Yvonne <yvonne.carver@ncdenr.gov>; Renaldi, Ronald <ronald.renaldi@ncdenr.gov>; Spivey, Kelly <kelly.spivey@ncdenr.gov>; Bodnar, Gregg <gregg.bodnar@ncdenr.gov>; Harrison, James A <James.Harrison@ncdenr.gov>; Deaton, Anne <anne.deaton@ncdenr.gov>; Gledhill-earley, Renee <renee.gledhill-earley@ncdcr.gov>; Josh.R.Pelletier@usace.army.mil; raleigh.w.bland@usace.army.mil; billy.w.standridge@usace.army.mil; Twyla.Cheatwood@noaa.gov; kathryn_matthews@fws.gov; joshc@darenc.com; McClenney, Holden W <holden.mcclenney@ncdenr.gov>; Strauss, Ruth <ruth.strauss@ncdenr.gov>

Cc: rking@oregon-inlet.com; Blizzard Merrill, Sarah M <Sarah_Blizzard_Merrill@nps.gov>; Henry, Sabrina S <Sabrina_Henry@nps.gov>; Hardison, Lyn <lyn.hardison@ncdenr.gov>; Troy Murphy <tmurphy@quible.com>

Subject: [External] RE: Oregon Inlet Fishing Center

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All,

Good morning. Hope you are all doing well. On behalf of the NPS and the Lessee, OIFC, LLC (Russell King), I would like to present you with the attached updated information regarding the proposed improvements to the Oregon Inlet Fishing Center. Please take the time to review the attached Updated Project Narrative, USGS Vicinity Map and Conceptual Sketch for a description of the proposed project. The proposed work is on federal (managed by NPS) land and the NPS has entered into a lease with OIFC, LLC to construct the illustrated improvements as shown on the attached drawing and manage the Fishing Center.

******The attached drawing has been updated to include maintenance dredge of the marina basin and dredge in Motts Creek (total proposed dredge area to project depth of -8.0 feet is 3.77 acres) adjacent to a Coast Guard project to maintain adequate depths in Motts Creek for the USCG Station Oregon Inlet.**

Please acknowledge receipt of this email and attachment and submit any comments, questions, suggestions or requests for more information directly to me at eadus@quible.com or 252.491.8147.

Thanks,

Warren D. Eadus, P.G.
President
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From: Warren Eadus
Sent: Tuesday, March 24, 2020 4:11 PM
To: Carl.Dunn@ncdenr.gov; samir.dumpor@ncdenr.gov; randall.jones@ncdenr.gov; maria.dunn@ncwildlife.org; anthony.scarbraugh@ncdenr.gov; chris.pullinger@ncdenr.gov; yvonne.carver@ncdenr.gov; Ronald.Renaldi@ncdenr.gov; kelly.spivey@ncdenr.gov; gregg.bodnar@ncdenr.gov; James.Harrison@ncdenr.gov; anne.deaton@ncdenr.gov; renee.gledhill-earley@ncdcr.gov; Josh.R.Pelletier@usace.army.mil; raleigh.w.bland@usace.army.mil; billy.w.standridge@usace.army.mil; Twyla.Cheatwood@noaa.gov; kathryn_matthews@fws.gov; joshc@darenc.com; holden.mcclenney@ncdenr.gov; ruth.strauss@ncdenr.gov
Cc: rking@oregon-inlet.com; Blizzard Merrill, Sarah M <Sarah_Blizzard_Merrill@nps.gov>; Henry, Sabrina S <Sabrina_Henry@nps.gov>; Hardison, Lyn <lyn.hardison@ncdenr.gov>; Troy Murphy <tmurphy@quible.com>
Subject: Oregon Inlet Fishing Center

All,

Good afternoon. Hope you are all doing well. On behalf of the NPS and the Lessee, OIFC, LLC (Russell King), I would like to present you with the attached information intended to act as a "Virtual Interagency Scoping Meeting" to discuss the proposed improvements to the Oregon Inlet Fishing Center. Please take the time to review the attached Project Narrative, USGS Vicinity Map and Conceptual Sketch for a description of the proposed project. The proposed work is on federal (managed by NPS) land and the NPS has entered into a lease with OIFC, LLC to construct the illustrated improvements as shown on the attached drawing and manage the Fishing Center.

Quible and the NPS are working on a NEPA Document for this project, and we want to be sure that we are not overlooking any permitting requirements or any agency notifications. SHPO, USFWS and NMFS have already been contacted for Consultation and we appreciate your replies.

Please acknowledge receipt of this email and attachment and submit any comments, questions, suggestions or requests for more information directly to me at eadus@quible.com or 252.491.8147.

Thanks,

Warren D. Eadus, P.G.
President
Quible & Associates, P.C.
8466 Caratoke Hwy, Bldg 400

Powells Point NC 27966
PO Drawer 870
Kitty Hawk, NC 27949
t 252.491.8147
f 252.491.8146
m 252.202.8166
www.quible.com [quible.com]



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NATIONAL PARK SERVICE



OUTER BANKS GROUP

Fort Raleigh National Historic Site

Wright Brothers National Memorial

Cape Hatteras National Seashore

1401 National Park Drive

Manteo, North Carolina 27954

IN REPLY REFER TO:

1.A.2. (CAHA-RM)

JAN 07 21

Wenonah Haire
Tribal Historic Preservation Officer
Catawba Indian Nation
996 Avenue of the Nations
Rock Hill, SC 29730-0629

RE: Consultation under Section 106 of the National Historic Preservation Act for Oregon Inlet Marina Site Plan and Environmental Assessment, Cape Hatteras National Seashore

Dear Ms. Haire:

Federal regulations for the implementation of Section 106 of the National Historic Preservation Act of 1966, as amended, require consultation with federally recognized American Indian tribes (36 CFR 800.2) on a government-to-government basis, as specified in Executive Order 13175. Cape Hatteras National Seashore, a unit of the National Park Service, is committed to honoring the obligations and responsibilities toward the sovereign, federally recognized Indian tribes under all United States laws, regulations, and policies.

The National Park Service is preparing an Environmental Assessment (EA) for site improvements at the Oregon Inlet Marina. Oregon Inlet Marina (also known as Oregon Inlet Fishing Center) is a commercial charter fishing marina located within Cape Hatteras National Seashore in Nags Head, North Carolina in the region of barrier islands known as the Outer Banks. The National Park Service has permitted or contracted fishing center and marina operations at Oregon Inlet since 1953 and the marina has been in operation in its current location since December 1956. Oregon Inlet Marina is currently operated by Oregon Inlet Fishing Center, LLC under a 20-year lease with the NPS (2018 – 2038).

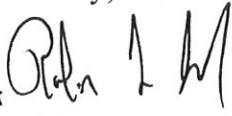
The NPS is preparing this Site Plan and Environmental Assessment in order to evaluate strategies to replace vulnerable structures and conduct site improvements at the marina. This project is focused on replacing existing buildings, improving safety and pedestrian/vehicle circulation at the site, and conducting additional site improvements to support the replacement buildings and modernize the marina premises. The EA will analyze whether the impacts of this proposed action will constitute impairment of park cultural and natural resources and values. A document detailing the park's preferred alternative is enclosed for your reference.

Cape Hatteras National Seashore is responsible for making a reasonable and good faith effort to identify federally recognized American Indian tribes that might attach religious and cultural significance to properties that may be affected by an undertaking. We are not aware of any historic properties that may be of religious and cultural significance to the Catawba Indian Nation that would potentially be affected by the actions described in the proposed EA. Please let us know if you have any information regarding historic properties that may be located in the potentially affected area.

If you have questions, please contact Jami Lanier, Cultural Resource Manager, at 252-475-9021 or by email at jami_p_lanier@nps.gov

We look forward to hearing from you. Thank you for your assistance.

Sincerely,

for 

David E. Hallac
Superintendent

Enclosure



United States Department of the Interior
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Cape Hatteras National Seashore

1401 National Park Drive

Manteo, North Carolina 27954

IN REPLY REFER TO:

1.A.2. (CAHA-RM)

JAN 07 21

Mr. Russell Townsend
Tribal Historic Preservation Officer
Eastern Band of Cherokee Indians
P.O. Box 455
Cherokee, NC 28719

RE: Consultation under Section 106 of the National Historic Preservation Act for Oregon Inlet Marina Site Plan and Environmental Assessment, Cape Hatteras National Seashore

Dear Mr. Townsend:

Federal regulations for the implementation of Section 106 of the National Historic Preservation Act of 1966, as amended, require consultation with federally recognized American Indian tribes (36 CFR 800.2) on a government-to-government basis, as specified in Executive Order 13175. Cape Hatteras National Seashore, a unit of the National Park Service, is committed to honoring the obligations and responsibilities toward the sovereign, federally recognized Indian tribes under all United States laws, regulations, and policies.

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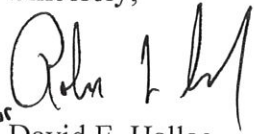
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Cape Hatteras National Seashore is responsible for making a reasonable and good faith effort to identify federally recognized American Indian tribes that might attach religious and cultural significance to properties that may be affected by an undertaking. We are not aware of any historic properties that may be of religious and cultural significance to the Eastern Band of Cherokee Indians that would potentially be affected by the actions described in the proposed EA. Please let us know if you have any information regarding historic properties that may be located in the potentially affected area.

If you have questions, please contact Jami Lanier, Cultural Resource Manager, at 252-475-9021 or by email at jami_p_lanier@nps.gov

We look forward to hearing from you. Thank you for your assistance.

Sincerely,

A handwritten signature in dark ink, appearing to read 'D. Hallac', with a stylized flourish at the end.

for
David E. Hallac
Superintendent

Enclosure



United States Department of the Interior
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OUTER BANKS GROUP

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Wright Brothers National Memorial

Cape Hatteras National Seashore

1401 National Park Drive

Manteo, North Carolina 27954

IN REPLY REFER TO:

1.A.2. (CAHA-RM)

JAN 07 21

Ms. Karen Pritchett
Tribal Historic Preservation Officer
United Keetoowah Band of Cherokee
P.O. Box 746
Tahlequah, OK 74465

RE: Consultation under Section 106 of the National Historic Preservation Act for Oregon Inlet Marina Site Plan and Environmental Assessment, Cape Hatteras National Seashore

Dear Ms. Pritchett:

Federal regulations for the implementation of Section 106 of the National Historic Preservation Act of 1966, as amended, require consultation with federally recognized American Indian tribes (36 CFR 800.2) on a government-to-government basis, as specified in Executive Order 13175. Cape Hatteras National Seashore, a unit of the National Park Service, is committed to honoring the obligations and responsibilities toward the sovereign, federally recognized Indian tribes under all United States laws, regulations, and policies.

The National Park Service is preparing an Environmental Assessment (EA) for site improvements at the Oregon Inlet Marina. Oregon Inlet Marina (also known as Oregon Inlet Fishing Center) is a commercial charter fishing marina located within Cape Hatteras National Seashore in Nags Head, North Carolina in the region of barrier islands known as the Outer Banks. The National Park Service has permitted or contracted fishing center and marina operations at Oregon Inlet since 1953 and the marina has been in operation in its current location since December 1956. Oregon Inlet Marina is currently operated by Oregon Inlet Fishing Center, LLC under a 20-year lease with the NPS (2018 – 2038).

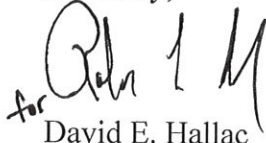
The NPS is preparing this Site Plan and Environmental Assessment in order to evaluate strategies to replace vulnerable structures and conduct site improvements at the marina. This project is focused on replacing existing buildings, improving safety and pedestrian/vehicle circulation at the site, and conducting additional site improvements to support the replacement buildings and modernize the marina premises. The EA will analyze whether the impacts of this proposed action will constitute impairment of park cultural and natural resources and values. A document detailing the park's preferred alternative is enclosed for your reference.

Cape Hatteras National Seashore is responsible for making a reasonable and good faith effort to identify federally recognized American Indian tribes that might attach religious and cultural significance to properties that may be affected by an undertaking. We are not aware of any historic properties that may be of religious and cultural significance to the United Keetoowah Band of Cherokee that would potentially be affected by the actions described in the proposed EA. Please let us know if you have any information regarding historic properties that may be located in the potentially affected area.

If you have questions, please contact Jami Lanier, Cultural Resource Manager, at 252-475-9021 or by email at jami_p_lanier@nps.gov

We look forward to hearing from you. Thank you for your assistance.

Sincerely,

A handwritten signature in black ink, appearing to read 'David E. Hallac', with a stylized 'D' and 'H'.

David E. Hallac
Superintendent

Enclosure



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Manteo, North Carolina 27954

IN REPLY REFER TO:

1.A.2. (CAHA-RM)

JAN 07 21

Ms. Elizabeth Toombs
Tribal Historic Preservation Officer
Cherokee Nation
P.O. Box 948
Tahlequah, OK 74465

RE: Consultation under Section 106 of the National Historic Preservation Act for Oregon Inlet Marina Site Plan and Environmental Assessment, Cape Hatteras National Seashore

Dear Ms. Toombs:

Federal regulations for the implementation of Section 106 of the National Historic Preservation Act of 1966, as amended, require consultation with federally recognized American Indian tribes (36 CFR 800.2) on a government-to-government basis, as specified in Executive Order 13175. Cape Hatteras National Seashore, a unit of the National Park Service, is committed to honoring the obligations and responsibilities toward the sovereign, federally recognized Indian tribes under all United States laws, regulations, and policies.

The National Park Service is preparing an Environmental Assessment (EA) for site improvements at the Oregon Inlet Marina. Oregon Inlet Marina (also known as Oregon Inlet Fishing Center) is a commercial charter fishing marina located within Cape Hatteras National Seashore in Nags Head, North Carolina in the region of barrier islands known as the Outer Banks. The National Park Service has permitted or contracted fishing center and marina operations at Oregon Inlet since 1953 and the marina has been in operation in its current location since December 1956. Oregon Inlet Marina is currently operated by Oregon Inlet Fishing Center, LLC under a 20-year lease with the NPS (2018 – 2038).

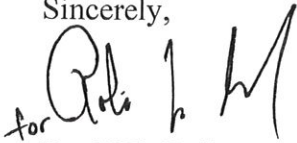
The NPS is preparing this Site Plan and Environmental Assessment in order to evaluate strategies to replace vulnerable structures and conduct site improvements at the marina. This project is focused on replacing existing buildings, improving safety and pedestrian/vehicle circulation at the site, and conducting additional site improvements to support the replacement buildings and modernize the marina premises. The EA will analyze whether the impacts of this proposed action will constitute impairment of park cultural and natural resources and values. A document detailing the park's preferred alternative is enclosed for your reference.

Cape Hatteras National Seashore is responsible for making a reasonable and good faith effort to identify federally recognized American Indian tribes that might attach religious and cultural significance to properties that may be affected by an undertaking. We are not aware of any historic properties that may be of religious and cultural significance to the Cherokee Nation that would potentially be affected by the actions described in the proposed EA. Please let us know if you have any information regarding historic properties that may be located in the potentially affected area.

If you have questions, please contact Jami Lanier, Cultural Resource Manager, at 252-475-9021 or by email at jami_p_lanier@nps.gov

We look forward to hearing from you. Thank you for your assistance.

Sincerely,

for

David E. Hallac
Superintendent

Enclosure

Fw: [EXTERNAL] 1.A.2 (CAHA-RM) Oregon Inlet Marina Site Plan and EA, Cape Hatteras National Seashore

Lanier, Jami P <Jami_P_Lanier@nps.gov>

Mon 2/1/2021 3:44 PM

To: Griffis, Amanda L <amanda_griffis@nps.gov>

Cc: Blizzard Merrill, Sarah M <Sarah_Blizzard_Merrill@nps.gov>

From: Elizabeth Toombs <elizabeth-toombs@cherokee.org>

Sent: Wednesday, January 27, 2021 11:38 AM

To: Lanier, Jami P <Jami_P_Lanier@nps.gov>

Subject: [EXTERNAL] 1.A.2 (CAHA-RM) Oregon Inlet Marina Site Plan and EA, Cape Hatteras National Seashore

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Dear Jami Lanier:

This Office recently received a review request for the Oregon Inlet Marina Site Plan, Cape Hatteras National Seashore. Nags Head, North Carolina is outside the Cherokee Nation's Area of Interest. Thus, this Office respectfully defers to federally recognized Tribes that have an interest in this landbase at this time.

Thank you for the opportunity to comment upon this proposed undertaking. Please contact me if there are any questions or concerns.

Wado,

Elizabeth Toombs, Tribal Historic Preservation Officer
Cherokee Nation
Tribal Historic Preservation Office
PO Box 948
Tahlequah, OK 74465-0948
918.453.5389



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1401 National Park Drive

Manteo, North Carolina 27954

IN REPLY REFER TO:

1.A.2. (CAHA-RM)

JAN 07 21

Mr. Bryan Printup
Tribal Historic Preservation Officer
Tuscarora Nation
2045 Upper Mountain Road
Sanborn, NY 14132

RE: Consultation under Section 106 of the National Historic Preservation Act for Oregon Inlet Marina Site Plan and Environmental Assessment, Cape Hatteras National Seashore

Dear Mr. Printup:

Federal regulations for the implementation of Section 106 of the National Historic Preservation Act of 1966, as amended, require consultation with federally recognized American Indian tribes (36 CFR 800.2) on a government-to-government basis, as specified in Executive Order 13175. Cape Hatteras National Seashore, a unit of the National Park Service, is committed to honoring the obligations and responsibilities toward the sovereign, federally recognized Indian tribes under all United States laws, regulations, and policies.

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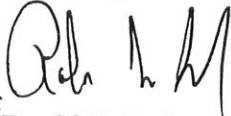
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Cape Hatteras National Seashore is responsible for making a reasonable and good faith effort to identify federally recognized American Indian tribes that might attach religious and cultural significance to properties that may be affected by an undertaking. We are not aware of any historic properties that may be of religious and cultural significance to the Tuscarora Nation that would potentially be affected by the actions described in the proposed EA. Please let us know if you have any information regarding historic properties that may be located in the potentially affected area.

If you have questions, please contact Jami Lanier, Cultural Resource Manager, at 252-475-9021 or by email at jami_p_lanier@nps.gov

We look forward to hearing from you. Thank you for your assistance.

Sincerely,


for David E. Hallac
Superintendent

Enclosure

APPENDIX D:

USDA NRCS WEB SOIL SURVEY



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Dare County, North Carolina**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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DwE—Dune land-Newhan complex, 2 to 40 percent slopes.....	18
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map


The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map (Oregon Inlet Fishing Center)




MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip

 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals


Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dare County, North Carolina
Survey Area Data: Version 19, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 19, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Oregon Inlet Fishing Center)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeA	Beaches, 0 to 2 percent slopes, storm tidal	1.3	0.9%
CeA	Carteret sand, 0 to 2 percent slopes, frequently flooded	25.4	17.6%
CrB	Corolla-Duckston complex, 0 to 6 percent slopes, rarely flooded	0.2	0.1%
DtA	Duckston fine sand, 0 to 2 percent slopes, occasionally flooded	23.3	16.1%
DwE	Dune land-Newhan complex, 2 to 40 percent slopes	0.8	0.5%
NeC	Newhan fine sand, 0 to 10 percent slopes	11.5	8.0%
NhC	Newhan-Corolla complex, 0 to 10 percent slopes	12.0	8.3%
PsB	Psamments, 0 to 6 percent slopes	18.7	12.9%
W	Water	51.3	35.5%
Totals for Area of Interest		144.4	100.0%

Map Unit Descriptions (Oregon Inlet Fishing Center)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called

noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can

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be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Dare County, North Carolina

BeA—Beaches, 0 to 2 percent slopes, storm tidal

Map Unit Setting

National map unit symbol: 3qgl
Elevation: 0 to 10 feet
Mean annual precipitation: 42 to 58 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 190 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Beaches: 95 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Beaches

Setting

Landform: Barrier flats, barrier beaches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Beach sand

Typical profile

C - 0 to 80 inches: sand

Properties and qualities

Slope: 1 to 2 percent
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 39.96 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Very frequent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 32.0 mmhos/cm)
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w
Hydric soil rating: Yes

CeA—Carteret sand, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 3qgq
Elevation: 0 feet
Mean annual precipitation: 42 to 58 inches
Mean annual air temperature: 61 to 64 degrees F

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Frost-free period: 190 to 270 days

Farmland classification: Not prime farmland

Map Unit Composition

Carteret, tidal, and similar soils: 90 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carteret, Tidal

Setting

Landform: Tidal marshes

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy fluviomarine deposits and/or eolian sands

Typical profile

Ag - 0 to 10 inches: sand

Cg - 10 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Very poorly drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: About 0 to 12 inches

Frequency of flooding: Very frequent

Frequency of ponding: None

Salinity, maximum in profile: Strongly saline (16.0 to 80.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 60.0

Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: A/D

Hydric soil rating: Yes

CrB—Corolla-Duckston complex, 0 to 6 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 3qgt

Elevation: 0 to 10 feet

Mean annual precipitation: 42 to 58 inches

Mean annual air temperature: 61 to 64 degrees F

Frost-free period: 190 to 270 days

Farmland classification: Not prime farmland

Map Unit Composition

Corolla and similar soils: 50 percent

Duckston and similar soils: 30 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Corolla

Setting

Landform: Troughs on barrier islands
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Eolian sands and/or beach sand

Typical profile

A - 0 to 3 inches: fine sand
C - 3 to 26 inches: fine sand
Ab - 26 to 32 inches: sand
Cg - 32 to 60 inches: sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Duckston

Setting

Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Eolian sands and/or beach sand

Typical profile

A - 0 to 8 inches: fine sand
Cg - 8 to 13 inches: sand
Ab - 13 to 17 inches: sand
C'g - 17 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very high

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Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96 in/hr)

Depth to water table: About 0 to 6 inches

Frequency of flooding: Rare

Frequency of ponding: None

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 20.0

Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: A/D

Hydric soil rating: Yes

DtA—Duckston fine sand, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: 3qgw

Elevation: 0 to 10 feet

Mean annual precipitation: 42 to 58 inches

Mean annual air temperature: 61 to 64 degrees F

Frost-free period: 190 to 270 days

Farmland classification: Not prime farmland

Map Unit Composition

Duckston and similar soils: 90 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Duckston

Setting

Landform: Depressions

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Eolian sands and/or beach sand

Typical profile

A - 0 to 8 inches: fine sand

Cg - 8 to 13 inches: sand

Ab - 13 to 17 inches: sand

C'g - 17 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Poorly drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96 in/hr)

Custom Soil Resource Report

Depth to water table: About 0 to 6 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

DwE—Dune land-Newhan complex, 2 to 40 percent slopes

Map Unit Setting

National map unit symbol: 3qgy
Elevation: 0 to 20 feet
Mean annual precipitation: 42 to 58 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 190 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Dune land: 45 percent
Newhan and similar soils: 45 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dune Land

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian sands

Typical profile

A - 0 to 6 inches: fine sand
C - 6 to 80 inches: sand

Properties and qualities

Slope: 2 to 40 percent
Natural drainage class: Excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96 in/hr)
Frequency of flooding: Very rare

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Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 20.0

Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: No

Description of Newhan

Setting

Landform: Dunes

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Eolian sands and/or beach sand

Typical profile

A - 0 to 2 inches: fine sand

C1 - 2 to 50 inches: fine sand

C2 - 50 to 80 inches: sand

Properties and qualities

Slope: 0 to 30 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Very rare

Frequency of ponding: None

Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 20.0

Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydrologic Soil Group: A

Hydric soil rating: No

Minor Components

Duckston

Percent of map unit: 5 percent

Landform: Depressions

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

NeC—Newhan fine sand, 0 to 10 percent slopes

Map Unit Setting

National map unit symbol: 3qh5

Elevation: 0 to 20 feet

Mean annual precipitation: 42 to 58 inches

Mean annual air temperature: 61 to 64 degrees F

Frost-free period: 190 to 270 days

Farmland classification: Not prime farmland

Map Unit Composition

Newhan and similar soils: 80 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newhan

Setting

Landform: Dunes

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Eolian sands and/or beach sand

Typical profile

A - 0 to 2 inches: fine sand

C1 - 2 to 50 inches: fine sand

C2 - 50 to 80 inches: sand

Properties and qualities

Slope: 0 to 10 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 20.0

Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydrologic Soil Group: A

Hydric soil rating: No

Minor Components

Beaches

Percent of map unit: 5 percent

Landform: Barrier beaches, barrier flats

Hydric soil rating: Yes

Duckston

Percent of map unit: 5 percent

Landform: Depressions

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

NhC—Newhan-Corolla complex, 0 to 10 percent slopes

Map Unit Setting

National map unit symbol: 3qh6

Elevation: 0 to 20 feet

Mean annual precipitation: 42 to 58 inches

Mean annual air temperature: 61 to 64 degrees F

Frost-free period: 190 to 270 days

Farmland classification: Not prime farmland

Map Unit Composition

Newhan and similar soils: 50 percent

Corolla and similar soils: 40 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newhan

Setting

Landform: Dunes

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Eolian sands and/or beach sand

Typical profile

A - 0 to 2 inches: fine sand

C1 - 2 to 50 inches: fine sand

C2 - 50 to 80 inches: sand

Properties and qualities

Slope: 0 to 10 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

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Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 20.0

Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydrologic Soil Group: A

Hydric soil rating: No

Description of Corolla

Setting

Landform: Troughs on barrier islands

Landform position (two-dimensional): Backslope, toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Eolian sands and/or beach sand

Typical profile

A - 0 to 3 inches: fine sand

C - 3 to 26 inches: fine sand

Ab - 26 to 32 inches: sand

Cg - 32 to 60 inches: sand

Properties and qualities

Slope: 0 to 6 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 in/hr)

Depth to water table: About 18 to 36 inches

Frequency of flooding: Rare

Frequency of ponding: None

Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 20.0

Available water storage in profile: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Hydric soil rating: No

Minor Components

Duckston

Percent of map unit: 5 percent

Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

PsB—Psamments, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 3qhd
Elevation: 0 to 20 feet
Mean annual precipitation: 42 to 58 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 190 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Psamments, dredged, and similar soils: 95 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Psamments, Dredged

Setting

Landform: Ridges on marine terraces
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy dredge spoils

Typical profile

A - 0 to 24 inches: fine sand
C - 24 to 81 inches: fine sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: A
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydric soil rating: No

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