

Chapter 4

ENVIRONMENTAL CONSEQUENCES

*Mike's comments
1/28/09*

CUMULATIVE IMPACTS

The CEQ regulations to implement the National Environmental Policy Act require the assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts are considered for all alternatives, including the no-action alternative.

Cumulative impacts were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects and plans at Cape Hatteras and, if applicable, the surrounding region. Table 25 summarizes these actions that could affect the various resources at the seashore. These actions are described in more detail in the “Related Policies, Laws, Plans, and Actions” section of this document (see the “Purpose of and Need for Action” chapter).

The analysis of cumulative effects was accomplished using four steps:

- Step 1—Resources Affected. Fully identify resources affected by any of the alternatives.
- Step 2—Boundaries. Identify an appropriate spatial and temporal boundary for each resource.
- Step 3—Cumulative Action Scenario. Determine which actions to include with each resource.
- Step 4—Cumulative Impact Analysis. Summarize x + y statements, proposed action plus cumulative action, defining context, intensity, duration and timing; defining thresholds, methodology, etc.

TABLE 25: CUMULATIVE IMPACT SCENARIO

| Impact Topic | Study Area | Past Actions | Present Actions | Future Actions (life of plan/EIS) |
|--|---|---|--|---|
| Federally Listed Threatened & Endangered Species | Specific to species as identified in Recovery Plans | Oregon Inlet Dredging Commercial Fishing Storms and Other Weather Events County Land Use Development Plan for Dare and Hyde Counties Hurricane Recovery Continued Maintenance of NC-12 and Berms Berm Maintenance for Private Property in Front of Villages (NPS Authorized) Resource Management Plan Long-Range Interpretive Plan Previous ORV plans Special Use Permits/Activities Concession Permits/Operations | Same as past, plus Predator Management Plan (under development) Commercial Services Plan (under development) <i>Consent decree</i> <i>Modifying Interim Protected species Management Strategy</i> | Same as present, plus Development of Cape Lookout National Seashore long-term ORV Management Plan/EIS Revision of the General Management Plan Replacement of Bonner Bridge Revision of Land Use Development Plans for Dare and Hyde Counties <i>How does that affect CAHA?</i> |

Interim Protected Species Management Strategy

ENVIRONMENTAL CONSEQUENCES

TABLE 25: CUMULATIVE IMPACT SCENARIO

| Impact Topic | Study Area | Past Actions | Present Actions | Future Actions (life of plan/EIS) |
|--|-------------------------------------|--|--|---|
| | | Species research efforts USFWS Species Recovery Plans | | |
| State-listed or Special Status Species | Focus on North Carolina populations | Same as above | Same as above | Same as above |
| Other Wildlife (birds, invertebrates) | Seashore Boundary | Same as above. | Same as above. | Same as above. |
| Visitor Use and Experience | Seashore Boundary | Commercial Fishing Storms and Other Weather Events Continued Maintenance of NC-12 and Berms Hurricane Recovery General Management Plan Resource Management Plan Long-Range Interpretive Plan <i>Interim Prot. Species Mgt. Strategy</i> | Same as Past, plus: Ocracoke transportation study Commercial Services Plan (under development) Predator Management Plan (under development) <i>Consent Decree Modifying I/PSMS</i> | Same as Present, plus Development of Cape Lookout National Seashore long-term ORV Management Plan/EIS Bonner Bridge Replacement Opening of Dune Road Around Cape Point <i>Can A</i> Revision of the General Management Plan <i>Revision Land Use Development Plan for Dare County</i> |
| Socioeconomics Including Local Commercial Fishing Activities | Regional—counties | Commercial Fishing Storms and Other Weather Events <i>Interim Prot. Sp. Mgt. Strategy</i> | Same as Past, plus: Ocracoke transportation study <i>Consent Decree Modifying I/PSMS</i> | Same as present, plus: Development of Cape Lookout National Seashore Long-term ORV Management Plan/EIS <i>3(?)</i> Opening of Dune Road Around Cape Point |
| Seashore Management and Operations | Seashore Boundary | General Management Plan Commercial Fishing Storms and Other Weather Events Oregon Inlet Dredging Hurricane Recovery Resource Management Plan Long-Range Interpretive Plan <i>I/PSMS</i> | Same as Past, plus Ongoing Law Enforcement Ongoing Research Studies Ongoing Maintenance Ongoing Surveying Predator Management Plan (under development) Commercial Services Plan (under development) <i>Consent Decree Modifying I/PSMS</i> | Same as Present, plus Opening of Dune Road Around Cape Point Revision of the General Management Plan |
| Wetlands and Floodplains | Seashore Boundary | Oregon Inlet Dredging Storms and Other Weather Events County Land Use Development Plan for Dare and Hyde Counties Hurricane Recovery Resource Management Plan Continued Maintenance of NC-12 and Berms Berm Maintenance for Private Property in Front of Villages (NPS Authorized) | Same as Past, plus ?? [are there any current actions that are affecting wetlands or floodplains] | Same as Present, plus ?? [any other future actions other than those listed?] Bonner Bridge replacement |

TABLE 25: CUMULATIVE IMPACT SCENARIO

| Impact Topic | Study Area | Past Actions | Present Actions | Future Actions (life of plan/EIS) |
|---------------------|-------------------|---|--|---|
| Soundscapes | Seashore Boundary | Oregon Inlet Dredging Storms and Other Weather Events Continued Maintenance of NC-12 and Berms Berm Maintenance for Private Property in Front of Villages (NPS Authorized) | Same as past, plus Increased vehicle traffic and village events | Same as Present, plus: Bonner Bridge Replacement |

The past, present, and future actions outlined in Table 25 are described in the Related, Laws, Policies, Plans, and Actions section in the “Purpose of and Need for Action.” Recreational use, past, present, and future, is considered as an integral part of the action alternatives and is, therefore, not addressed within the cumulative impact scenario.

MBM
Comments
1/27/09

CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

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Deleted: 17

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OFF-ROAD VEHICLE MANAGEMENT PLANS

Need to add section on
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16

may end up w/ 4 if
Committee work
create one

1 **CHAPTER 1: PURPOSE OF AND NEED FOR ACTION**

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

12 **PURPOSE OF THE PLAN / ENVIRONMENTAL IMPACT STATEMENT**

13 The purpose of this action is to develop regulations and procedures that manage ORV use/access in the
14 Seashore to protect and preserve natural and cultural resources and natural processes, provide a variety of
15 appropriate visitor use experiences while minimizing conflicts among various users, and promote the
16 safety of all visitors. [for DEIS, include sidebar definition of ORV]

17 **NEED FOR ACTION**

18 Cape Hatteras National Seashore provides a variety of visitor experiences, including the use of ORVs. In
19 addition to recreation opportunities, the Seashore is home to important habitats created by the Seashore's
20 dynamic environmental processes, including habitats for several federally listed species such as the piping
21 plover (*Charadrius melodus*); three species of sea turtles (loggerhead [*Caretta caretta*], green [*Chelonia*
22 *mydas*], and leatherback [*Dermochelys coriacea*]); and one plant species, the seabeach amaranth
23 (*Amaranthus pumilus*). Two other federally listed sea turtle species, the hawksbill (*Eretmochelys*
24 *imbricata*) and Kemp's ridley (*Lepidochelys kempii*), occupy the surrounding waters. In addition, the
25 Seashore provides nesting habitat for several ~~species~~ of state-listed colonial waterbirds, including the
26 common tern (*Sterna hirundo*), least tern (*Sterna antillarum*), gull-billed tern (*Sterna nilotica*), and black
27 skimmer (*Rynchops niger*). Solitary nesters, such as the American bystercatcher (*Haematopus palliatus*)
28 and Wilson's plover (*Charadrius wilsonia*), also use Cape Hatteras National Seashore as a breeding
29 ground, and the red knot (*Calidris canutus rufa*) is a migrant and occasional winter resident at the
30 Seashore. This ORV management planning effort is based on recognition by the NPS that ORVs must be
31 regulated in a manner that is consistent with applicable law, and appropriately addresses resource

and special status ~~at~~ species of

1 protection (including protected, threatened, and endangered species), potential conflicts among the
2 various Seashore users, and visitor safety.

3 Executive Order 11644, *Use of Off-Road Vehicles on the Public Lands*, was issued in 1972 in response to
4 the widespread and rapidly increasing use of ORVs on public lands “often for legitimate purposes but also
5 in frequent conflict with wise land and resource management practices, environmental values, and other
6 types of recreational activity.” This Executive Order, amended by Executive Order 11989 in 1977, states
7 that federal agencies allowing ORV use must designate specific areas and trails on public lands on which
8 the use of ORVs may be permitted and areas in which use may not be permitted. Section 3 of Executive
9 Order 11644 requires that agency regulations on ORV use provide that designation of such areas and
10 trails will be based on protecting resources of public lands, promoting the safety of all users of those
11 lands, and minimizing conflicts among the various uses on those lands. Code of Federal Regulations
12 (CFR) Title 36, Section 4.10(b) contains regulations regarding vehicles and traffic safety on National Park
13 Service lands and requires that “routes and areas designated for ORV use shall be promulgated as special
14 regulations” and that the designation of routes and areas “shall comply with §1.5 of this chapter and E.O.
15 11644 (37 FR 2887).”

16 Therefore, an ORV management plan for Cape Hatteras National Seashore is needed at this time to

- 17 • Bring the Seashore in compliance with Executive Orders 11644 and 11989 respecting ORV
18 use, and with NPS laws, regulations (36 CFR 4.10), and policies to minimize impacts to
19 Seashore resources and values.
- 20 • Address the lack of an approved plan, which has led over time to inconsistent management of
21 ORV use, user conflicts, and safety concerns.
- 22 • Provide for protected species management in relation to ORV use upon expiration of the *Cape*
23 *Hatteras National Seashore Interim Protected Species Management Strategy/Environmental*
24 *Assessment* (interim strategy/EA) (NPS 2006a) and associated Biological Opinion and
25 Amendment (USFWS 2006 and 2007).

26 OBJECTIVES IN TAKING ACTION

27 Objectives are “what must be achieved to a large degree for the action to be considered a success” (NPS
28 2001, 22). All alternatives selected for detailed analysis must meet project objectives to a large degree and
29 resolve the purpose of and need for action. Objectives must be grounded in the Seashore’s enabling
30 legislation, purpose, significance, and mission goals, and must be compatible with direction and guidance

1 provided by the Seashore’s general management plan, strategic plan, and/or other management guidance.

2 The following are objectives identified by Seashore staff for developing this plan/EIS.

3 **MANAGEMENT METHODOLOGY**

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

13 **NATURAL PHYSICAL RESOURCES**

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

16 **THREATENED, ENDANGERED, AND OTHER PROTECTED SPECIES**

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

21 **VEGETATION**

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

23 **OTHER WILDLIFE AND WILDLIFE HABITAT**

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

1 **CULTURAL RESOURCES**

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

4 **VISITOR USE AND EXPERIENCE**

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

9 **VISITOR SAFETY**

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

11 **PARK OPERATIONS**

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

15 **PROJECT STUDY AREA**

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

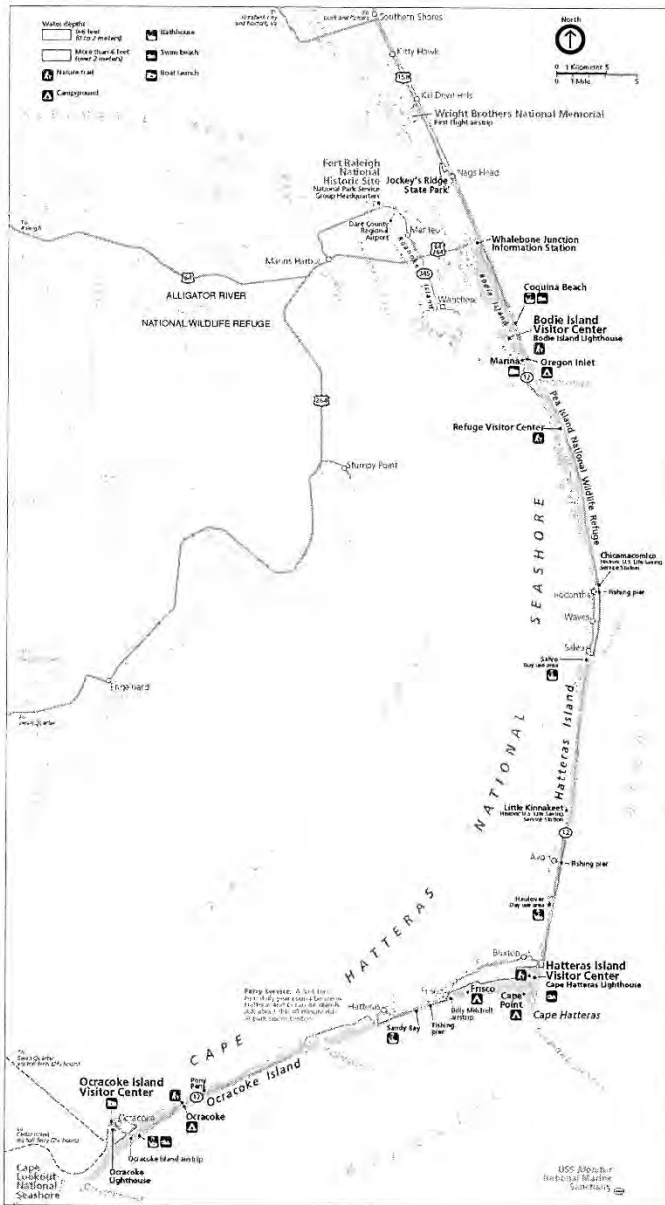
18 **PURPOSE AND SIGNIFICANCE OF CAPE HATTERAS NATIONAL SEASHORE**

19 All units of the national park system were formed for a specific purpose (their reason for being) and to
20 preserve significant resources or values for the enjoyment of future generations. The purpose and
21 significance identify uses and values that individual NPS plans should support. The following provides
22 background on the purpose and significance of Cape Hatteras National Seashore.

23 As stated in the Seashore's enabling legislation, Congress established the Seashore in 1937 as a national
24 seashore for the enjoyment and benefit of the people, and to preserve the area. Its enabling legislation
25 states:

26 Except for certain portions of the area, deemed to be especially adaptable for recreational
27 uses, particularly swimming, boating, sailing, fishing, and other recreational activities of

1 Figure 1: Cape Hatteras National Seashore Map (will be 11x17 foldout)



1 similar nature, which shall be developed for such uses as needed, the said areas shall be
2 permanently reserved as a primitive wilderness and no development of the project or plan
3 for the convenience of visitors shall be undertaken which would be incompatible with the
4 preservation of the unique flora and fauna or the physiographic conditions now prevailing in
5 this area.

6 The 1937 enabling legislation for Cape Hatteras National Seashore also states that:

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

14 A 1940 amendment to the enabling legislation re-designated the area as the Cape Hatteras National
15 Seashore Recreational Area to permit hunting in the Seashore. In 1954, Assistant Director Hillory A.
16 Tolson sent a memorandum to the NPS Washington Office which administratively determined that the
17 shorter title of "Cape Hatteras National Seashore" could be used in place of the full title (Cape Hatteras
18 National Seashore and Recreational Area Project) except in all memoranda and documents requiring the
19 full title of the park unit. *

20 Park significance statements capture the essence of the park's importance to the nation's natural and
21 cultural heritage. Understanding park significance helps managers make decisions that preserve the
22 resources and values necessary to the park's purpose. The following significance statements recognize the
23 important features of the Seashore. As stated in the 2005-2008 Strategic Plan, the Seashore has the
24 following significance (NPS 2005a, 6):

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

OFF-ROAD VEHICLE MANAGEMENT PLAN/EIS

* Add sentence ~~to the effect~~ to the effect that:
~~Since 1965, Congress has consistently~~
Since the 1960's when other national seashores
were authorized, Congress has consistently used
the name "Cape Hatteras National Seashore" in all
legislation related to CHHA.

1 ADMINISTRATIVE BACKGROUND

2 HISTORY OF CAPE HATTERAS NATIONAL SEASHORE

3 Officially authorized in 1937 along the Outer Banks of North Carolina, Cape Hatteras is the nation's first
 4 national seashore. Consisting of more than 30,000 acres distributed along approximately 64 miles of
 5 shoreline, the Seashore is part of a dynamic barrier island system. The Outer Banks of North Carolina
 6 formed as a result of changes in sea level, wave and wind action, and ocean currents. These factors
 7 continue to influence the islands today through the processes of erosion and accretion of the shoreline;
 8 overwash across the islands; and the formation, migration, and closure of the inlets (NPS 1979, 7). Since
 9 the 1930s, these natural processes have been influenced by human actions such as building sand berms¹ to
 10 protect roads and homes, dredging inlets, and filling inlets newly created by storms.

11 The Seashore serves as a popular recreation destination, with more than 2.2 million visitors in ~~2006~~ ²⁰⁰⁸
 12 [~~update when 2008 data are available~~] showing a 12-fold increase in visitation over the past 50 years
 13 (NPS 2008a, 1). Federal ownership extends from ocean to sound across three barrier islands—Ocracoke,
 14 Hatteras, and Bodie (figure 1). The ~~U.S. Coast Guard property~~ ^{properties} and eight villages are excluded from the
 15 Seashore boundaries. On the oceanside of the villages, federal ownership was established as a 500-foot
 16 strip measured landward from the mean low water at the time of acquisition. A larger area seaward of
 17 Buxton and Frisco includes portions of Buxton Woods. The 5,880-acre Pea Island National Wildlife
 18 Refuge, located at the northern end of Hatteras Island, is part of the Seashore, but administered for refuge
 19 purposes by the U.S. Fish and Wildlife Service under the National Wildlife Refuge System
 20 Administration Act (NPS 1997, 1). Therefore, this plan/EIS does not ~~include~~ ^{address management of} the area within the refuge.

21 The Seashore's enabling legislation (passed in 1937) provides for both visitor use and resource protection.
 22 Visitors to the Seashore participate in a variety of recreational activities, including beach recreation
 23 (swimming, windsurfing, waterskiing, kiteboarding, etc.), fishing (surf and boat), beach driving,
 24 motorized boating, camping, shell collecting, historical tourism, nature study, harvesting of shellfish, non-
 25 motorized boating (sailing, kayaking, canoeing), hunting, hiking, and photography.

¹ The word 'berm' as used in this document refers to remnants of the man-made dune or dune ridge originally constructed in the 1930s by the Civilian Conservation Corps and the Works Progress Administration. The National Park Service actively maintained this dune ridge until the 1970s when dune stabilization was abandoned by the Seashore. The word 'berm' as used in the document also refers to a man-made dune or dune ridge constructed to protect state highway NC-12 and interior sections of the island from ocean flooding and overwash during storms.

1 Seashore visitors use ORVs for traveling to and from swimming, fishing, and surfing areas, and for
 2 pleasure driving. The number of visitors to the Seashore has grown from 1,510,237 in 1980 to 2,237,378
 3 in 2007, a growth of approximately 48%. Over the last few years, visitation to the Seashore has stabilized
 4 at approximately 2.2 million visitors per year (NPS 2008a, 1)

5 Current management allows ORV users to drive on the beach in front of the primary dune line. Drivers
 6 must use designated ramps to cross between the beach and NC-12 that runs behind the primary dune line.
 7 In some areas, NC-12 provides a way around full beach closures or areas where the high tide line limits
 8 beachfront access.

9 In addition to a multitude of visitor opportunities, the Seashore provides a variety of important habitats
 10 created by its dynamic environmental processes, including habitats for the federally listed piping plover;
 11 sea turtles, and ~~one listed plant species~~ ^{five listed on plants records} the seabeach amaranth. The Seashore also hosts colonial
 12 waterbirds, the American oystercatcher, and other species of concern such as the Wilson's plover and red
 13 knot. The Seashore also contains ecologically important habitats such as marshes, tidal flats, and riparian
 14 areas.

15 SUMMARY OF OFF-ROAD VEHICLE USE AND MANAGEMENT AT CAPE HATTERAS NATIONAL 16 SEASHORE

17 Before 1954, local residents and visitors drove on the beaches at the Seashore ^{in part,} because there were few
 18 formal roads in this remote area. Since the main purpose of beach driving was transportation, and not
 19 recreation, the number of ORVs on the beach was much smaller than it is today. In 1954, NC-12 was
 20 paved, providing a formal transportation route. The paving of NC-12, the completion of the Bonner
 21 Bridge connecting Bodie and Hatteras Islands in 1963, and the introduction of the State of North Carolina
 22 ferry system to Ocracoke Island facilitated visitor access to the sound and ocean beaches and resulted in
 23 increased vehicle use on beaches for recreational purposes (NPS 2004a, 1). Residents adopted the use of
 24 ORVs for commercial netting of fish, while sport fishermen used ORVs to pursue migrating schools of
 25 game fish and reach more productive areas, such as Cape Point or the inlets, often a mile or more from the
 26 nearest paved surface. Presently, ORVs are used for activities such as commercial and recreational
 27 fishing, sightseeing, travel to and from swimming and surfing areas, and pleasure driving (NPS 2004b, 1).

28 ORVs access the sounds and beaches via a system of ramps located off NC-12. The ramps began as an
 29 informal system of unimproved access points connecting the roadway to the sounds and beaches. Over
 30 time, this system was formalized and the oceanside ramps are now numbered, maintained, and identified
 31 on the Seashore's ORV route maps as official vehicle access routes for beach access. In 1978 there were
 32 28 identified ramps, 22 of which were located on NPS lands. Although the NPS opened a new ramp to the

DRAFT – December 8, 2008

1 public in 1998, the number of ramps has decreased since 1978 as some were lost to erosion and others
 2 were closed to the public and are now used for administrative vehicle access only (NPS 2004a, 2). The
 3 NPS currently has 17 oceanside access ramps available for public ORV use (NPS 2008b, 1). ORV use at
 4 the Seashore has been managed through various plans. In 1973, in response to Executive Order 11644,
 5 *Use of Off-Road Vehicles on the Public Lands* (February 8, 1972), the Seashore developed a plan for
 6 ORV management (NPS 2004b, 1) that included:

- 7 • Designation of 27 beach access routes or ramps;
- 8 • Identification of a permitted area for travel from the toe of the dune to the ocean;
- 9 • License requirements for vehicles and operators;
- 10 • Closure of one heavily eroded section of the beach near the Cape Hatteras lighthouse year round;
 11 and
- 12 • Designation of seasonal closures in five areas heavily used by pedestrians between May 26 and
 13 September 10 (NPS 1978a, 3)

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

16 A few years later, in response to Executive Order 11989, *Off-Road Vehicles on Public Lands* (May 24,
 17 1977), the Seashore began developing an ORV management plan for the Seashore. In response to this
 18 plan, which was released in January 1978, the North Carolina Beach Buggy Association and the Outer
 19 Banks Preservation Association each issued proposed alternative plans for ORV management at the
 20 Seashore. These proposed plans were considered by the Seashore, along with public comment, and in
 21 November 1978 the *Draft Interim Management Plan: Off-Road Vehicle Use, Cape Hatteras National*
 22 *Seashore* was issued (NPS 1978a, 2). It established guidelines and management of ORV use in the
 23 Seashore while the general management plan was under development. Management through the draft
 24 interim management plan was achieved by establishing zones of use for ORVs, as well as describing
 25 conditions where vehicles would be allowed or prohibited. The draft interim management plan ~~established~~ *identified*
 26 the following use zones:

- 27 • Zone 1 – Ocean Beach: In this zone ORVs will be permitted landward from 150 feet of the
 28 existing tideline, but no closer than 20 feet to the toe of the dune or vegetation line. Portions of
 29 Zone I may be closed seasonally (May 15 through September 15), or closed temporarily to
 30 protect nesting birds or sea turtles, or when the distance between the existing tide and the toe of
 31 the dune or the vegetation line is reduced to less than 100 feet. Permits must be issued for

1 vehicles that have less than four weight-bearing wheels and do not meet all vehicular licensing
2 and inspection requirements of their state of origin.

3 ■ Zone 1(a) – Seasonally closed areas include:

4 Those Zone 1 areas, which due to seasonal heavy pedestrian, swimming, wildlife or other
5 use, are deemed seasonally unsuitable for ORV use;

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

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

12 Seasonally closed areas shall consist of, but not be limited to, the following areas: Bodie
13 Island, milepost 0 to milepost 3; beach areas fronting villages of Rodanthe, Waves,
14 Salvo, and Avon; northern boundary of Buxton to one mile south of the Cape Hatteras
15 Lighthouse; beach fronting the villages of Frisco and Hatteras; milepost 49 to milepost
16 54; and Ocracoke Island milepost 65 to 70.

17 ■ Zone 1(b) – Temporarily closed sections include:

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

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

26 Sea Turtle Nests – Locations on the beach where a sea turtle nest is discovered. A
27 rectangular section of beach that includes the nest with 300 feet (92 meters) of tideline
28 seaward of the nest shall be temporarily closed to ORV use from dune to existing
29 tideline. Closures shall be marked at both ends by posting with signs indicating “no
30 ORVs – temporary turtle nest.” The period of closure shall begin on posting, 50 days after
31 the turtle lays, and shall end 25 days later on official removal of the signs. The purpose of

1 the closure is to protect hatchling loggerhead turtles, listed as “threatened” under the
2 *Endangered Species Act*.

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

20 The 1978 draft interim management plan called for a posted speed limit of 25 miles per hour and for ORV
21 operators to possess a current driver’s license from their state of origin. Except for Zone 1, the 1978 plan
22 stated that no vehicle would enter any unpaved dirt or sand trail or path, or follow any vehicular tracks not
23 posted as an ORV trail. The Seashore implemented the following plan components:

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

29 In 1980, the North District Ranger prepared the *ORV Plan North District Cape Hatteras National*
30 *Seashore* (NPS 1980). During development of the plan, the North District Ranger asked concerned
31 individuals for comments and suggestions regarding ORV use at the Seashore. Based on these comments

1 and suggestions, the plan included recommendations for improvements and a general description and
2 project status of each soundside and oceanside access point from Bodie Island to Hatteras Inlet. The plan
3 recommended that the general management plan consider additional parking needs on the soundside and
4 oceanside and at comfort station locations. It also recommended that the general management plan
5 consider impacts of traffic flow changes as a result of corridor and road closures (NPS 1980, 17). The
6 general management plan addressed these concerns by incorporating additional parking lots and parking
7 turnouts along NC-12 (NPS 1984, 23).

8 The 1984 *General Management Plan/Development Concept Plan/Environmental Assessment: Cape*
9 *Hatteras National Seashore* (NPS 1984) addressed direct and indirect threats to the Seashore, with ORV
10 use cited as one such threat. The general management plan calls for additional planning and research on
11 ORV use and for monitoring impacts of ORVs, but does not set forth an ORV management plan.
12 Therefore, management of ORVs continued under the draft 1978 plan.

13 The general management plan specified five visitor experience zones. ORV use was listed as an
14 appropriate activity in three of these five zones: ocean/beach, interior dunes/maritime forests, and
15 marsh/sound. The general management plan also called for ORV use to be regulated by the 1978 draft
16 interim management plan (NPS 1978a). The plan was drafted after consideration of public comment to
17 the earlier 1978 proposed ORV management plan (NPS 1978b). The permitting portion of the 1978
18 proposed plan was controversial and was removed before release of the 1978 *Draft Interim Management*
19 *Plan: Off-Road Vehicle Use, Cape Hatteras National Seashore* (NPS 1978a).

20 * In 2004 the Seashore issued Superintendent's Order #07, *ORV Management* to resolve ORV issues
21 created by Hurricane Isabel, which flattened sand berms and exposed areas of the Seashore to ORV use
22 that the berms once protected from such use (NPS 2004c). After reviewing the 1984 general management
23 plan, the Superintendent decided that parts of the 1978 draft interim management plan (permitting
24 sections excluded) would be used as Seashore guidance pending development of a long-term ORV
25 management plan and special regulation.

26 The interim protected species management strategy/EA (strategy/EA), published in 2006, was prepared to
27 ensure the proper management of protected species and to comply with the *Endangered Species Act*,
28 while providing for use of the Seashore's recreational resources until an ORV plan/EIS for the Seashore
29 could be completed. The species addressed in the strategy/EA are those specifically affected by
30 recreational use within the Seashore that are listed either federally or by the state as threatened,
31 endangered, or species of special concern and/or are of special concern to the Seashore.

OFF-ROAD VEHICLE MANAGEMENT PLAN/EIS

* Need transition paragraph to explain happened
between 1984 and 2004,

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1 To implement the interim strategy, the NPS completed an EA in accordance with NEPA, and evaluated
 2 several alternatives in the interim strategy/EA. Alternative D, as modified in the *Finding of No Significant*
 3 *Impact* (NPS 2007a) of the strategy/EA was identified as the selected alternative. Alternative D outlines a
 4 multifaceted strategy (including an increased program of monitoring, recreational and ORV closures,
 5 education and enforcement) for minimizing impacts to wildlife, threatened and endangered species, and
 6 other protected species, from visitor uses, including ORV use.

7 The USFWS Raleigh Field Office prepared a Biological Opinion associated with the interim strategy/EA
 8 in response to their review of the Cape Hatteras National Seashore's biological assessment (NPS 2006c,
 9 January 6, 2006), the *Cape Hatteras National Seashore Interim Protected Species Management*
 10 *Strategy/EA* (NPS 2006a, January 18, 2006), and other sources of published and unpublished biological
 11 information. The Biological Opinion evaluated the proposed action of the interim strategy/EA and its
 12 potential impact to protected species at the Seashore. The USFWS concluded that incidental take of
 13 protected species would occur from management actions under the interim strategy/EA, but that this level
 14 of anticipated take during the limited period the interim strategy/EA would be in effect is not likely to
 15 result in jeopardy to the species or destruction or adverse modification of designated or proposed critical
 16 habitat (USFWS 2006, 75). *issued in August 2006 or (FWS, August, 2006)*

17 In October 2007, a lawsuit was filed against the NPS alleging inadequacies in management of protected
 18 species at the Seashore and failure of the Seashore to comply with NPS regulations regarding ORV use
 19 (see Litigation, below). On April 30, 2008, a consent decree was issued to settle the lawsuit. The consent
 20 decree modifies the actions analyzed in the Biological Opinion and requires the NPS to follow the interim
 21 strategy/EA, except as modified by the provisions of the consent decree. *The* modifications in the interim
 22 ~~strategy/EA and the consent decree~~ include changes to the buffers provided for various species at the
 23 Seashore, as well as added restrictions related to night driving.

24 LITIGATION

25 This plan/EIS was developed partially as the result of two petitions for rulemaking submitted to the NPS.
 26 The first, submitted on December 9, 1999, requested a ban on the use of all-terrain vehicles, dune
 27 buggies, sand buggies, and other four-wheel drive vehicles on all off-road areas in the national park
 28 system. The second petition, specific to Cape Hatteras National Seashore, submitted on June 7, 2004,
 29 requested Rulemaking Governing Off-Road Vehicle Use in the Cape Hatteras National Seashore.
 30 Petitioners claimed the Seashore's informal authorization of ORV use violated the Endangered Species
 31 Act, executive orders and federal regulations regarding ORV use in the National Parks, the NPS Organic

1 Act of 1916, the General Authorities Act of 1970, the Cape Hatteras National Seashore enabling
2 legislation, and various NPS management policies.

3 In May 2005 Defenders of Wildlife issued a notice of intent to sue the NPS for alleged violations of the
4 Endangered Species Act. Partly as a result of this, the Seashore prepared the previously described interim
5 strategy/EA for use while developing a long-term ORV management plan. A lawsuit was filed in October
6 2007 claiming the interim strategy/EA violated the Endangered Species Act, failed to protect species at
7 Cape Hatteras National Seashore, and failed to comply with the requirements of the ORV executive
8 orders and NPS regulations on ORV use. In April 2008, the U.S. District Court Judge signed a consent
9 decree to settle the lawsuit. The consent decree, which is enforceable by the court, provides for specific
10 species protection measures and requires the NPS to complete the ORV management plan/EIS and
11 required special regulation by December 31, 2010 and April 11, 2011 respectively. (See Appendix X for a
12 more detailed Seashore ORV-related chronology.)

13 SUMMARY OF EXISTING RESEARCH

14 [update when literature review is complete]

15 Potential impacts to the natural environment from ORV use at the Seashore were examined in the
16 *Determination of Status of Existing Natural Resource Impacts from Recreational Use of Cape Hatteras*
17 *National Seashore: Literature Review* (Perry and Mitchell nd, 3). The literature review was part of an
18 effort to assist the management of Cape Hatteras National Seashore in making management decisions
19 regarding ORV use. The literature review compiled a database of 1,012 relevant citations, 89 of which
20 were specific to ORV use and habitat disturbance. These citations covered five major categories: (1)
21 references pertaining to fauna; (2) references pertaining to sand/sediment processes; (3) references
22 pertaining to vegetation; (4) references pertaining specifically to Cape Hatteras National Seashore; and
23 (5) all other subjects.

24 In the first category, a total of 30 sources discussed the negative impacts of ORVs on bird populations in
25 general. These sources concluded that negative impacts are higher in a stable coastal dune system due to
26 the natural processes of a dune ecosystem, their relationship to bird habitat, and the potential for
27 disruption of bird breeding and nesting behavior from ORV use. The studies concluded that ORV use is
28 the highest during breeding season, pedestrian impacts account for more than half the disturbances to
29 birds, and that natural forces have a greater impact than ORVs. Many specific studies on endangered
30 species, such as the piping plover, show well-documented effects from ORVs. Although the studies in
31 this category documented impacts to birds from ORV use, research was lacking on the effectiveness of
32 management plans.

should this be
"unstable"?
Doesn't make sense.

1 In the remaining categories, the research showed:

- 2 • ORV traffic has a negative impact on sand and sediments due to compaction, decreased
3 infiltration, and moisture availability.
- 4 • ORV traffic causes direct damage to vegetation, and indirect impacts to adjacent, non-dune plant
5 communities need to be addressed further.
- 6 • ORV traffic has a negative direct impact on the ability of soil to support dune vegetation due to
7 changes in moisture retention, soil compaction, and soil salinity. Indirect impacts need further
8 examination.

9 The studies discussed in the literature review, as well as other studies, demonstrate that ORVs do have an
10 impact to coastal ecosystems, including wildlife and vegetation. Further study was suggested to determine
11 the level of these impacts and the effectiveness of management measures.

12 SCOPING PROCESS AND PUBLIC PARTICIPATION

13 A notice of intent was published in the Federal Register on December 11, 2006, to announce the
14 beginning of the ORV planning process. To determine the scope of issues to be analyzed in depth in this
15 plan/EIS, meetings were conducted in February and March of 2007 with Seashore staff, other parties
16 associated with preparing this document, and members of the public. Additional public meetings were
17 held in January 2008 to examine the range of alternatives and provide input on alternative elements. In
18 response to public input and issues raised during the scoping process, the interdisciplinary planning team
19 reworked the preliminary alternatives to those analyzed in this plan. Chapter 5 of this plan/EIS contains
20 more details about agency and public scoping activities that were an integral part of the planning process
21 for this plan/EIS.

22 REGULATORY NEGOTIATION PROCESS

23 The *Negotiated Rulemaking Act of 1990* (5 USC 561-570) establishes a statutory framework for agency
24 use of negotiated rulemaking to reach a consensus with stakeholders on a proposed regulation. Concurrent
25 with the NEPA process, the Seashore is using a negotiated rulemaking process to develop a proposed rule
26 for long-term ORV management at the Seashore. Because negotiated rulemaking allows interested,
27 affected parties more direct input into the development of the proposed regulation, NPS expects the
28 negotiated rulemaking process to result in a rule that is sensitive to the needs and limitations of both the
29 parties and the agency. In ~~January 2008~~, the regulatory negotiation committee was formally established

and
December 2007
its first meeting was held in January 2008, when ...

1 ~~and~~ committee members began to work toward a consensus recommendation, which is included as
2 alternative F in this plan/EIS [modify when decision is made on reg-neg alternative].

3 **ISSUES AND IMPACT TOPICS**

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

8 **FLOODPLAINS AND WETLANDS**

9 Although the entire shoreline of the Seashore is classified as a wetland (Cowardin et al. 1979, 1),
10 wetlands are of particular concern where ORV use can damage vegetation and impact wildlife habitats or
11 where wetland habitat is decreasing. On Bodie Island spit at Oregon Inlet, wetland habitat has been lost
12 due to accretion. The terminal groin constructed at Pea Island has stopped the natural accretion process
13 from moving south. Although Pea Island stopped moving south, Bodie Island continues to do so, filling
14 Oregon Inlet. Therefore, the U.S. Army Corps of Engineers (Corps) conducts ongoing maintenance
15 dredging of Oregon Inlet. The Corps agreed to mitigate impacts resulting from this dredging activity and
16 proposed reducing the elevation of the spit to create low spots and foraging habitat for piping plover. As
17 these wetland habitats become more limited, damage from ORV use is of increasing concern at the
18 Seashore. [define terminal groin and accretion in sidebar]

??
} doesn't sound right as written. Nesting habitat is lost due to erosion & dredging at Oregon Inlet.

19 Estuarine wetlands are often denuded of vegetation when ORVs are driven and parked along the
20 soundside shoreline. Many of the interior roads (upper beach/ beach access ramps or soundside trails)
21 cross wetlands that do not have standing water all year. When standing water is present along an ORV
22 route, drivers often attempt to drive around the water and over adjacent vegetation. This results in wider
23 roads, new vehicle routes, and crushed or dead vegetation. Construction of parking areas is also of
24 concern for small wetlands that may be located nearby.

25 All of the Seashore is located within the 100-year floodplain. In this plan/EIS, the issue of floodplains is
26 considered under any alternative that includes development, such as expanding or changing existing
27 parking lots, because these actions have the potential to impact the function and value of the floodplain.

28 **WILDLIFE AND WILDLIFE HABITAT**

29 Cape Hatteras National Seashore provides important habitats and plays a vital role in the survival of many
30 wildlife species. Whether for nesting, resting, foraging, or feeding, the Seashore provides for a diverse

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1 assemblage of birds. Rich, varied habitats and the Seashore's location along the Atlantic Flyway attract
 2 birds. In 1999, the American Bird Conservancy designated Cape Hatteras National Seashore as a Globally
 3 Important Bird Area in recognition of the Seashore's value in bird migration, breeding, and wintering
 4 (American Bird Conservancy 2005, 1). This diverse ecosystem includes both ~~the~~ ^{prey} species that sensitive
 5 species rely on for survival, and predators of sensitive species. ORV use along the Seashore can disrupt
 6 habitat or cause a loss of habitat in high use areas. Habitat loss due to ORV use could also occur
 7 indirectly as a result of the noise and disturbance from this activity.

8 Invertebrates are impacted by ORV use. A recent study at the Seashore researched the ghost crab
 9 (*Oecypode quadrata*) as an indicator of ecosystem health, since it may show the impacts of ORVs and
 10 other recreational uses. The study considered the impacts of ORVs on ghost crab population densities and
 11 recovery rates in relation to ORV use and usage regulations. Data to determine the impacts of off-road
 12 vehicles on crab populations was collected in several areas in the Seashore. Closures of the beaches to
 13 vehicles were initiated to study short-term effects and recovery rates. It was found that ORVs had a
 14 detrimental impact on ghost crab populations at the Seashore and that areas subject to vehicle use had
 15 significantly fewer ghost crab burrows than those areas without vehicles. As shown by Steiner and
 16 Leatherman (1981, 111), ghost crabs can be killed or mortally injured by ORVs driving over them, or by
 17 altering their environment. This study concluded that high-energy weather events change the dynamics of
 18 the population, allowing more ghost crabs to inhabit the area, but ORVs reduce the ability for ghost crabs
 19 to inhabit the area (VIMS 2004, 47).

20 RARE, UNIQUE, THREATENED, AND ENDANGERED SPECIES

21 Federally Listed Threatened and Endangered Species

22 ORV use at the Seashore could impact federally threatened or endangered species and their habitats on
 23 the Seashore's soundside and ocean beaches. Conflicts between listed species and recreational use
 24 (including ORV use) could create direct or indirect losses to a listed species. The Seashore is home to
 25 federally threatened and endangered species year round. Increased year-round visitation results in a
 26 greater potential for conflicts between visitor use and listed species. The Seashore is used by both the ^{endangered}
 27 Great Lakes population of piping plover (for wintering) and the Atlantic Coast population (for breeding
 28 and wintering). Seabeach amaranth, a federally listed ^{threatened} plant species, has been found in limited numbers at
 29 the Seashore. According to the USFWS, seabeach amaranth has been eliminated from two-thirds of its
 30 historic range and one of the most serious threats to its continued existence is disturbance by ORVs.
 31 Nesting sea turtles at the Seashore include the loggerhead, green, and leatherback turtles, ^{Hawksbill and} Kemp's
 32 ridley turtles are occasional visitors. Threats to listed sea turtles, their nesting sites, and young include

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1 storm events, predation, pedestrian disturbance, ORV use, artificial lighting, pets, and recreational beach
2 equipment.

3 In May 2008, the red knot was ~~found~~ ^{identified by U.S. Fish and Wildlife Service} as a candidate for the endangered or threatened species list. This
4 species is a migrant and occasional winter resident at the Seashore.

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

8 **State-Listed and Special Status Species**

9 Habitat for state-listed and special status species, such as the American oystercatcher and colonial
10 waterbirds, may be vulnerable to disturbances caused by recreational uses, including ORV use. As of May
11 2008, the American oystercatcher, Wilson's plover, least tern, common tern, and black skimmer were
12 listed by the North Carolina Wildlife Resources Commission (NCWRC) as species of special concern.
13 The NCWRC also lists the gull-billed tern as a state-threatened species. The American oystercatcher is
14 listed as a species of concern by the Southeastern Shorebird Conservation Plan, and both the American
15 oystercatcher and the Wilson's plover are identified in the U.S. Shorebird Conservation Plan as "Species
16 of High Concern." All these state-listed or special status species have had historically low reproductive
17 rates. The lack of large undisturbed areas for successful breeding contributes to these low rates at the
18 Seashore. Frequent human disturbance can cause the abandonment of nest sites as well as direct loss of
19 eggs and chicks.

20 **SOUNDSCAPES [NEED TO SEE IF THIS STAYS AS A TOPIC OR IS MOVED TO DISMISSED]**

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

26 **VISITOR USE AND EXPERIENCE**

27 ORV use at the Seashore is an integral component of the experience for some visitors and may be
28 impacted by ORV management activities. Other Seashore visitors who are not using ORVs may be
29 impacted by ORV use. Currently, the mix of recreational users at the Seashore includes a variety of users
30 such as ORV users, day-users without vehicles, swimmers, anglers, bird watchers, and other users.

off-road

watersports enthusiasts,

1 Although some visitors want to use an ORV to access the Seashore, other visitors wish to engage in
2 recreational activities on foot and away from the presence of motorized vehicles. Restricting ORVs from
3 areas of the Seashore could enhance the recreational experience for some and diminish the experience for
4 others. Visitor experience could be affected by conflicts between motorized and non-motorized recreation
5 users. A further component of visitor experience is providing for the safety of all visitors at the Seashore.

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

15 Headlights and other artificial lights associated with nighttime ORV use may affect visitors' opportunities
16 to enjoy night skies at the Seashore. Conversely, lack of artificial lights may make it more difficult to see,
17 posing hazards to ORV users and pedestrians. Issues related to night skies include night driving,
18 headlights, campfires, and all other light uses associated with human activity after dusk. The Seashore is
19 one of the few places on the Atlantic Coast where visitors can experience the magnificence of a dark night
20 sky. The Seashore has been ranked, along with Cape Lookout National Seashore, as the 9th best place to
21 view the night sky by the NPS Night Sky Program. ORV use at night has the potential to affect visitor
22 experience of the brilliance of the night sky. In addition to visitors, animals are also impacted by lights at
23 night. The stars, planets, and moon are visible during clear nights and influence many species of animals,
24 such as birds that navigate by the stars or prey animals that reduce their activities during moonlit nights.
25 Additionally, the phosphorescence of waves on dark nights helps sea turtle hatchlings orient to the ocean.
26 Excessive artificial light has the potential to disorient turtle hatchlings and disrupt their crawl to the
27 ocean. Pursuant to NPS Management Policy 4.10 (NPS 2006b, 54), to prevent the loss of natural night
28 skies, the NPS should minimize light that emanates from park facilities, and also seek the cooperation of
29 park visitors, neighbors, and local government agencies to prevent or minimize the intrusion of artificial
30 light into the night scene of the ecosystems of parks. Furthermore, the NPS will not use artificial lighting
31 in areas such as sea turtle nesting locations where the presence of the artificial lighting could disrupt a
32 park's dark-dependent natural resource components (NPS 2006b, 54). Impacts of artificial light sources
33 on animals will be discussed in Chapters 3 and 4 under the wildlife and wildlife habitat impact topics.

1 **SOCIOECONOMICS**

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

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

15 **SEASHORE MANAGEMENT AND OPERATIONS**

16 Accommodating recreational uses while protecting sensitive species requires a sufficient number of
17 personnel and an adequate level of funding. Anecdotal evidence suggests that the Seashore currently does
18 not have enough personnel to properly enforce existing ORV management decisions. Operational needs
19 related to implementing an ORV management plan, that require direct NPS staff oversight of or
20 involvement in management activities would require an increased commitment of limited NPS resources
21 (staff, money, time, and equipment).

If operational requirements increase under the new

22 **ISSUES CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS**

23 The following issues were dismissed from further analysis, as explained below:

- 24 • **Geologic resources:** ORV use may also impact the ocean beach at Cape Hatteras National
25 Seashore by disturbing sand, compacting sand, creating ruts, and changing local topography.
26 However, the Seashore is part of a dynamic coastal barrier ecosystem, and effects of ORV and
27 other visitor use can change in a matter of hours by daily tidal action, winds, rain, hurricanes, and
28 other storm events. Although ORV use could impact geologic resources if ORVs are driven
29 through dunes where there is no marked trail or designated ramp, ramp use is provided and
30 enforced, and ORVs cutting through dunes in areas not designated as ramps are rare occurrences.
31 ORVs can impact beach escarpments, causing them to collapse and creating hazards to visitors

1 and affecting habitat for turtles. However, these secondary impacts are addressed under the
2 impact topics of wildlife, threatened and endangered species, and visitor use. Therefore, geologic
3 resources was not retained as an impact topic.

- 4 • **Geohazards:** There are no known geohazards in the Seashore that would be affected by the
5 implementation of an ORV management plan.
- 6 • **Unique Ecosystems, Biosphere Reserves, World Heritage Sites:** There are no known biosphere
7 reserves, World Heritage sites, or unique ecosystems listed in the Seashore; therefore,
8 implementation of an ORV management plan would have no effect.
- 9 • **Water Quality / Marine and Estuarine Resources:** ORV use has the potential to impact water
10 quality at the Seashore due to fluids leaking from submerged vehicles or tire ruts altering natural
11 drainage patterns. However, water quality impacts from submerged vehicles would not rise above
12 the level of negligible impacts to water quality as long as the vehicle was removed from the water
13 in a timely fashion. Also, due to the ephemeral nature of tire ruts in beach sand, they would not
14 result in impacts to water quality. Therefore, this impact topic was dismissed from further
15 analysis.
- 16 • **Wildlife and Wildlife Habitat – Fish, Marine Mammals, and Mammals:** Impacts of predators
17 on other species at the Seashore are influenced in part by the trash and food scraps human visitors
18 leave behind at the Seashore. Seashore predators include raccoons, ghost crabs, sea gulls, herring
19 gulls, bald eagles, snakes, and feral cats. An environmental assessment process for predator
20 management was initiated in 2007. The final assessment document and plan will address the
21 Seashore’s approach to native and non-native predators, specifically those species that prey on
22 federal and state-listed species present at the Seashore, and therefore those species are not
23 addressed as an impact topic in this plan/EIS. Impacts to mammals from ORV use and
24 management would be expected to be negligible. Although harassment of marine mammals could
25 occur from various park users, including those using ORVs, this would be infrequent, and the
26 plan will include measures to educate all visitors about resting marine mammals, resulting in
27 negligible to minor impacts to these species.
- 28 • **Air Quality:** Cape Hatteras National Seashore is located in an area classified by the U.S.
29 Environmental Protection Agency as being in attainment for all six criteria pollutants. Despite
30 being in attainment, activities associated with ORVs (driving, idling engines, and running
31 generators) could create localized increases in air pollution, potentially degrading the visitor
32 experience and contributing to greenhouse gas emissions that have been linked to global

1 warming. Driving on sand may be less fuel-efficient and, therefore, more polluting than driving
2 on a hard surface. [Discussion of air quality to be completed once models are completed by the
3 NPS.]

- 4 • **Prime Farmlands:** There are no designated prime farmland soils in the Seashore.
- 5 • **Streamflow Characteristics:** Actions related to ORV management would not have an effect on
6 streamflow characteristics. The proposed action would not occur in any area that would impact
7 streamflow.
- 8 • **Introduce or Promote Non-Native Species:** While the potential for vehicles to bring non-native
9 species to the Seashore occurs, only a small number of non-native species can live in the salt and
10 wind of the seashore environment. *Phragmites (Phragmites australis Cav.)*, a non-native plant
11 species, is present at the Seashore, but is not likely to be transported by ORVs because its primary
12 method of colonization is by rhizomes (underground root extensions) and not by seeds, which are
13 prone to spreading by vehicle tires (Wisconsin DNR 2007, 1).
- 14 • **Cultural Landscapes:** The NPS defines cultural landscapes as settings that humans have created
15 in the natural world. They reveal fundamental ties between people and the land. They are special
16 places: expressions of human manipulation and adaptation of the land. Although only one
17 Cultural Landscape Report has been prepared for the Cape Hatteras Light Station (NPS 2003),
18 there are five cultural landscapes within the Seashore’s official database: Bodie Island Light
19 Station, Little Kinnakeet Life Saving Station, Cape Hatteras Light Station, Hatteras Weather
20 Bureau Station, and Ocracoke Light Station (NPS 1997; D. Stover, NPS, Cape Hatteras National
21 Seashore Cultural Resource Specialist, pers. comm. 2008). None of these cultural landscapes is in
22 the areas of routine ORV use under any of the proposed action alternatives, and none should be
23 impacted by the implementation of an ORV management plan. In addition, because the oceanside
24 ORV use areas under all alternatives are close to one mile from the Cape Hatteras Light Station,
25 there should be no cultural landscape viewshed impacts from the base or the top of the lighthouse
26 resulting from ORV use (D. Stover, NPS, Cape Hatteras National Seashore Cultural Resource
27 Specialist, pers. comm. 2008). ~~_____~~
- 28 • **Historic Structures and Districts:** Structures are material assemblies that extend the limits of
29 human capability. Structure types range from buildings to bridges; locomotives to monuments;
30 temple mounds to factories and bronze statues. The Seashore contains 36 historic structures, 20 of
31 which are in good condition (NPS 2007e). Structures at the Seashore range from cemeteries to
32 entire complexes. For example, three historic U.S. Life Saving Service stations still stand at

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1 Chicacomoco, Little Kinnakeet , and Bodie Island. The Hatteras Weather Bureau Station and
2 Ocracoke Light Station are listed in the National Register. The Bodie Island Light Station, Bodie
3 Island Lifesaving/Coast Guard Station, and Cape Hatteras Light Station are listed in the National
4 Register as historic districts. In general, ORV use does not occur in the areas surrounding
5 standing structures, because structures are located off the beach in the dunes or on the soundside
6 of the Seashore. There are two concrete pad foundations (not standing structures), one of which is
7 at Cape Point, that is in an area of ORV use. These foundations are not in danger of impact from
8 ORVs.

- 9 • **Ethnographic Resources:** An ethnographic study for Cape Hatteras National Seashore was
10 completed in 2005 (Impact Assessment, Inc. 2005). The study looked at the eight villages in the
11 Seashore that reflect the nearly 300-year history and culture of the Outer Banks to support the
12 Seashore in interpretation of its cultural resources, stewardship of ethnographic resources, and
13 community relations with the villages. Archival/documentary research and ethnographic
14 fieldwork was completed as part of the study to further socio-cultural understanding of the
15 villages adjoining the Seashore. The villages contain a mix of populations that have evolved from
16 the original British settlers, European seafarers, farmers, and other more recent migrants to the
17 Outer Banks. No discrete, continuous ethnic groups or ethnographic populations are documented
18 at the Seashore; therefore, no ethnographic populations would be impacted by the implementation
19 of an ORV management plan.
- 20 • **Museum Collections:** Museum objects are manifestations and records of behavior and ideas that
21 span the breadth of human experience and depth of natural history. The Seashore has collections
22 of artifacts on display at the Cape Hatteras lighthouse and at each visitor center. The official
23 Seashore archives and artifact collections are housed at Fort Raleigh National Historic Site at
24 Manteo. These various collections are not located on the ocean or soundside beaches and would
25 not be impacted by implementation of an ORV management plan.
- 26 • **Environmental Justice:** On February 11, 1994, the President of the United States issued
27 Executive Order 12898: Federal Actions to Address Environmental Justice in Minority and Low-
28 Income Populations. The executive order is designed to focus the attention of federal agencies on
29 the human health and environmental conditions in minority communities and low-income
30 communities. Environmental justice analyses are performed to identify the disproportionate
31 placement of high and adverse environmental or health impacts from proposed federal actions on
32 minority or low-income populations, and to identify alternatives that could mitigate these
33 impacts.

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

8 Dare and Hyde counties in North Carolina had a population of 35,793 in the year 2000, of whom
9 4,185 people (12%) were minorities and 3,271 (9%) were living below poverty level. People of
10 Hispanic or Latino origin comprised 787 (2%) of the total population; 2,854 (8%) were Black or
11 African American; 107 (0.3%) were American Indian or Alaskan Native; 143 (0.4%) were Asian;
12 0 were Native Hawaiian or other Pacific Islander; 317 (0.8%) were of some other race; and 347
13 (0.9%) were of two or more races. It should be noted that persons of Hispanic or Latino origin
14 may be of any race. The only village at the Seashore that is a Census Designated Place (CDP) is
15 Ocracoke Village. Ocracoke had a population of 769 in the year 2000, of whom 30 (3.9%) were
16 minorities and 68 (9.3%) were living below poverty level.

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

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

- 30 • **Energy Resources:** This topic involves assessing energy requirements and the potential for
31 energy conservation associated with the various alternatives, but is most relevant to facility
32 construction projects. The majority of ORV use at the Seashore involves gaining access to
33 fishing areas, where vehicles are then turned off once the desired fishing spot is reached. Because

1 vehicular access to the beach would be maintained under this plan/EIS at current or reduced
2 levels, there would only be negligible impacts on energy resources, as fuel consumption would
3 not change to a large degree as a result of the implementation of this plan. The Seashore would
4 continue to operate under the wise energy use guidelines and requirements stated in the NPS 2006
5 Management Policies, Executive Order 13123 (Greening the Government Through Effective
6 Energy Management), Executive Order 13031 (Federal Alternative Fueled Vehicle Leadership),
7 Executive Order 13149 (Greening the Government Through Federal Fleet and Transportation
8 Efficiency), and the 1993 NPS Guiding Principles of Sustainable Design.

- 9 • **Urban Quality, Gateway Communities:** A gateway community is defined by the NPS
10 *Management Policies 2006* as a community that exists in close proximity to a unit of the national
11 park system whose residents and elected officials are often affected by the decisions made in the
12 course of managing the park. Because of this, there are shared interests and concerns regarding
13 decisions. Gateway communities usually offer food, lodging, and other services to park visitors.
14 They also provide opportunities for employee housing and a convenient location to purchase
15 goods and services essential to park administration. The communities within and adjacent to the
16 Seashore would fall under this definition, and the issues and interests that would be impacted by
17 this plan are addressed under the Socioeconomics impact topic.
- 18 • **Paleontological Resources:** No paleontological resources are located within the Seashore that
19 would be impacted by ORV use; therefore, paleontological resources would not be impacted by
20 implementation of an ORV management plan.
- 21 • **Health and Safety:** Health and safety issues related to ORV use are discussed under the visitor
22 use topic.
- 23 • **Topography and Soils (Physiographic, except for Geology):** Issues related to topography and
24 soils include impacts to the sand and beach environment, which are discussed under geologic
25 resources. Since no other impacts would occur to soils or topographic conditions, these were not
26 included as separate impact topics.

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

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

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

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

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

20 **Executive Order 11989: Off-Road Vehicles on Public Lands**

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

1 **Code of Federal Regulations 36 Section 4.10 Travel on Park Roads and Designated Routes**

2 This CFR section states that “operating a motor vehicle is prohibited except on park roads, in parking
3 areas and on routes and areas designated for off-road motor vehicle use.” Additionally, routes and areas
4 designated for ORV use shall be promulgated as special regulations, with designations complying with
5 Executive Order 11644. As a result of the plan/EIS and special regulation, the Seashore will be in
6 compliance with this regulation.

7 **OTHER APPLICABLE FEDERAL LAWS, POLICIES, REGULATIONS AND PLANS**

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

12 **Code of Federal Regulations, Title 36 (1992)**

13 Title 36, Chapter 1, provides the regulations “for the proper use, management, government, and
14 protection of persons, property, and natural and cultural resources within areas under the jurisdiction of
15 the National Park Service.” These regulations are utilized to fulfill the statutory purposes of the units of
16 the National Park System: to conserve scenery, natural and historical objects, and wildlife, and to provide
17 for the enjoyment of those resources in a manner that will leave them unimpaired for the enjoyment of
18 future generations. Section 1.5 of these regulations details the NPS authority to enact closures or public
19 use limits given that the closures are “consistent with applicable legislation and Federal administrative
20 policies, and based upon a determination that such action is necessary for the maintenance of public
21 health and safety, protection of environmental or scenic values, protection of natural or cultural resources,
22 aid to scientific research, implementation of management responsibilities, equitable allocation and use of
23 facilities, or the avoidance of conflict among visitor use activities.” *

24 **Code of Federal Regulation, Title 36, Section 2.15, Pets**

25 Title 36, Section 2.15, provides regulations for visitors wishing to bring pets into national park units.
26 Under this regulation, the following activities are prohibited in regards to pets:

- 27 1. Possessing a pet in a public building, public transportation vehicle, or location designated as a
28 swimming beach, or any structure or area closed to the possession of pets by the superintendent.
29 This does not apply to guide dogs accompanying visually impaired persons or hearing ear dogs
30 accompanying hearing-impaired persons.

* Section 1.6 details the NPS authority to issue permits, and
Section 1.7 details the public notification requirements
for enacting closures under Section 1.5.

- 1 2. Failing to crate, cage, restrain on a leash which shall not exceed six feet in length, or otherwise
2 physically confine a pet at all times.
- 3 3. Leaving a pet unattended and tied to an object, except in designated areas or under conditions
4 which may be established by the superintendent.
- 5 4. Allowing a pet to make noise that is unreasonable considering location, time of day or night,
6 impact on park users, and other relevant factors, or that frightens wildlife by barking, howling, or
7 making other noise.
- 8 5. Failing to comply with pet excrement disposal conditions which may be established by the
9 superintendent.

10 Where pets are allowed at the Seashore, this regulation applies. Pet issues are addressed in this plan/EIS
11 because they are transported in ORVs and are indirectly related to this use.

12 **Code of Federal Regulations, Title 36, Section 3.6 Prohibited Operations**

13 Section 3.6 prohibits the launching of a vessel “propelled by machinery” from any location within the
14 park other than a designated launch site. According to 3.6(i) of the Superintendent’s Compendium,
15 designated launch sites for non-commercial, recreational boats/vessels propelled by machinery are located
16 at Oregon Inlet Fishing Center, Ramp 23, Milepost 46 soundside access, Cable Crossing, Ocracoke
17 Marina parking area, Prong Road, Ramp 72, South Point Road, and Quork Hammock.

18 * **Coastal Zone Management Act, 1966**

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

28 The *North Carolina Coastal Area Management Act* (CAMA) establishes a cooperative program of coastal
29 area management between local and state governments through comprehensive planning for the
30 protection, preservation, orderly development, and management of the coastal area of North Carolina. The
31 CAMA program was federally approved in 1978 and is the state’s CZMP under the CZMA. Localities are

* Code of Fed. Regs, Title 36, Section 4 – Motor Vehicle Use
Section 4.1(d) ORV use etc.

1 responsible for planning while the state establishes areas of environmental concern. A project must obtain
2 a CAMA permit if it:

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

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

14 **Endangered Species Act of 1973, as Amended**

15 This act requires all federal agencies to consult with the Secretary of the Interior on all projects and
16 proposals with the potential to impact federally endangered or threatened plants and animals. It also
17 requires federal agencies to use their authorities in furtherance of the purposes of the *Endangered Species*
18 *Act* by carrying out programs for the conservation of endangered and threatened species. Federal agencies
19 are also responsible for ensuring that any action authorized, funded, or carried out by the agency is not
20 likely to jeopardize the continued existence of any endangered species or threatened species or result in
21 the destruction or adverse modification of designated critical habitat.

22 **Critical Habitat Designation for Piping Plovers**

23 Under the authority of the Endangered Species Act, the U.S. Fish and Wildlife Service can designate
24 critical habitat for a protected species. Critical habitat refers to specific geographic areas that contain
25 features essential for the conservation of a threatened or endangered species and that may require special
26 management or protection. On October 21, 2008, the USFWS designated the following four areas as
27 critical habitat: (1) Unit NC-1, Oregon Inlet; (2) Unit NC-2, Cape Hatteras Point; (3) Unit NC-4,
28 Hatteras Inlet; and (4) Unit NC-5, Ocracoke Island. Unit NC-1 is approximately 5 miles long, and
29 consists of about 485 acres of sandy beach and inlet spit habitat on Bodie Island and Pea Island. Unit NC-
30 2 comprises 646 acres and extends south approximately 2.8 miles from the ocean groin near the old

The act (or "associated regs.") define "take" as (quote the definition of "take") and impose civil and criminal penalties for violations of the act. (Have Solicitor check wording)

1 location of the Cape Hatteras Lighthouse to the point of Cape Hatteras, and then extends west 4.7 miles
2 along South Beach to the edge of Ramp 49 near the Frisco Campground. Unit NC-4 is approximately 5
3 miles long and consists of 410 acres of sandy beach and inlet spit habitat on the western end of Hatteras
4 Island and the eastern end of Ocracoke Island. Unit NC-5 consists of 502 acres on the western portion of
5 Ocracoke Island beginning at the beach access point at the edge of Ramp 72 (South Point Road),
6 extending west approximately 2.1 miles to Ocracoke Inlet, and then back east on the Pamlico Sound side.
7 Under section 7(a)(2) of the Endangered Species Act, if a federal action may affect a listed species or its
8 critical habitat, the responsible federal agency must enter into consultation with the USFWS to ensure that
9 the affected critical habitat would remain functional to serve its intended conservation role for the species.

10 **Antideficiency Act**

(Date)

11 The *Antideficiency Act* prohibits federal managers from making or authorizing expenditures in excess of
12 the amount available to them from appropriations or other funds, unless authorized by law. Based on this,
13 the plan/EIS created must be able to be implemented through expected funding sources.

14 **Marine Mammal Protection Act, 1972**

15 The *Marine Mammal Protection Act* prohibits, with certain exceptions, the taking of marine mammals in
16 U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine
17 mammal products into the United States. The act defines “take” as “to harass, hunt, capture, or kill, or
18 attempt to harass, hunt, capture, or kill any marine mammal.” It defines harassment as “any act of pursuit,
19 torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the
20 wild; or has the potential to disturb a marine mammal or marine mammal stock in the wild by causing
21 disruption of behavioral patterns, including but not limited to, migration, breathing, nursing, breeding,
22 feeding, or sheltering.” This act recognizes that some marine mammal species or stocks may be in danger
23 of extinction or depletion as a result of human activities, and that these species or stocks must not be
24 permitted to be depleted. The act, as amended in 1994, provides for certain exceptions to the take
25 prohibitions, such as Alaska Native subsistence and permits and authorizations for scientific research; a
26 program to authorize and control the taking of marine mammals incidental to commercial fishing
27 operations; preparation of stock assessments for all marine mammal stocks in waters under U.S.
28 jurisdiction; and studies of pinniped-fishery interactions. This act is relevant to this plan because ORVs
29 are used to assist marine mammals that have become stranded on the beach, and ORVs allow people to
30 access areas where these mammals rest, allowing for the possibility of harassment.

31 **Migratory Bird Treaty Act of 1918 and Executive Order 13186: Responsibilities of Federal**

1 **Agencies to Protect Migratory Birds**

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

23 **National Environmental Policy Act, 1969, as Amended**

24 NEPA is implemented through regulations of the Council on Environmental Quality (CEQ) (40 CFR
25 1500–1508). The NPS has in turn adopted procedures to comply with the act and the CEQ regulations, as
26 found in *Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision*
27 *Making*, and its accompanying handbook (NPS 2001). Section 102(2) (c) of NEPA requires that an EIS
28 be prepared for proposed major federal actions that may significantly affect the quality of the human
29 environment.

1 **National Historic Preservation Act of 1966, as Amended**

2 Section 106 of this act requires federal agencies to consider the effects of their undertakings on properties
3 listed or potentially eligible for listing on the National Register of Historic Places. All actions affecting
4 the Seashore’s cultural resources must comply with this legislation.

5 **National Parks Omnibus Management Act of 1998**

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

11 **NPS Organic Act, 1916**

12 By enacting the *NPS Organic Act of 1916*, Congress directed the U.S. Department of the Interior and NPS
13 to manage units of the national park system “to conserve the scenery and the natural and historic objects
14 and the wild life therein and to provide for the enjoyment of the same in such manner and by such means
15 as will leave them unimpaired for the enjoyment of future generations” (16 USC 1). The *Redwood*
16 *National Park Expansion Act of 1978* reiterates this mandate by stating that the NPS must conduct its
17 actions in a manner that will ensure no “derogation of the values and purposes for which these various
18 areas have been established, except as may have been or shall be directly and specifically provided by
19 Congress” (16 USC 1 a-1).

20 Despite these mandates, the *Organic Act* and its amendments afford the NPS latitude when making
21 resource decisions that balance visitor recreation and resource preservation. By these acts Congress
22 “empowered [the NPS] with the authority to determine what uses of park resources are proper and what
23 proportion of the park’s resources are available for each use” (*Bicycle Trails Council of Marin v. Babbitt*,
24 82 F.3d 1445, 1453 [9th Cir. 1996]).

25 Courts consistently interpret the *Organic Act* and its amendments to elevate resource conservation above
26 visitor recreation. *Michigan United Conservation Clubs v. Lujan*, 949 F.2d 202, 206 (6th Cir. 1991) states:
27 “Congress placed specific emphasis on conservation.” The court in *National Rifle Association of America*
28 *v. Potter*, says “in the *Organic Act* Congress speaks of but a single purpose, namely, conservation.” The
29 *NPS Management Policies 2006* also recognize that resource conservation takes precedence over visitor
30 recreation. The policy dictates: “when there is a conflict between conserving resources and values and
31 providing for enjoyment of them, conservation is to be predominant” (NPS 2006b, sec. 1.4.3, 10).

1 Because conservation remains predominant, the NPS seeks to avoid or to minimize adverse impacts on
2 park resources and values. Yet, the NPS has discretion to allow negative impacts when necessary (NPS
3 2006b, sec. 1.4.3, 10). While some actions and activities cause impacts, the NPS cannot allow an adverse
4 impact that constitutes resource impairment (NPS 2006b, sec. 1.4.3, 10). Specifically, NPS *Management*
5 *Policies 2006*, Section 1.4.3.1 states: “In the administration of authorized uses, park managers have the
6 discretionary authority to allow and manage the use, provided that the use will not cause impairment or
7 unacceptable impacts.” The *Organic Act* prohibits actions that permanently impair park resources unless a
8 law directly and specifically allows for the action (16 USC 1a-1). An action constitutes “an impairment”
9 when its impacts “harm the integrity of park resources or values, including the opportunities that
10 otherwise would be present for the enjoyment of those resources or values” (NPS 2006b, sec. 1.4.5, 11).
11 To determine impairment, the NPS must evaluate “the particular resources and values that would be
12 affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and
13 the cumulative effects of the impact in question and other impacts” (NPS 2006b, sec. 1.4.5, 11).

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

- 18 ▪ be inconsistent with a park’s purposes or values, or
- 19 ▪ impede the attainment of a park’s desired future conditions for natural and cultural resources as
20 identified through the park’s planning process, or
- 21 • create an unsafe or unhealthful environment for visitors or employees, or
- 22 • diminish opportunities for current or future generations to enjoy, learn about, or be inspired by
23 park resources or values, or
- 24 • unreasonably interfere with
 - 25 ○ park programs or activities, or
 - 26 ○ an appropriate use, or
 - 27 ○ the atmosphere of peace and tranquility, or the natural soundscape maintained in
28 wilderness and natural, historic, or commemorative locations within the park, or
 - 29 ○ NPS concessioner or contractor operations or services.

1 Because park units vary based on their enabling legislation, natural resources, cultural resources, and
2 missions, management activities appropriate for each unit, and for areas in each unit, vary as well. An
3 action appropriate in one unit could impair or cause unacceptable impacts to resources in another unit.
4 Thus, the EIS analyzes the context, duration, and intensity of impacts related to the implementation of an
5 ORV management plan at Cape Hatteras National Seashore, as well as the potential for resource
6 impairment or unacceptable impacts, as required by *Director's Order 12: Conservation Planning,*
7 *Environmental Impact Analysis and Decision-making* (NPS 2001, 45).

8 **Redwood National Park Act of 1978, as Amended**

9 Reasserting the system-wide standard of protection established by Congress in the original *Organic Act*,
10 the Redwood Amendment stated:

11 The authorization of activities shall be construed and the protection, management, and
12 administration of these areas shall be conducted in light of the high public value and integrity of
13 the National Park System and shall not be exercised in derogation of the values and purposes for
14 which these various areas have been established, except as may have been or shall be directly and
15 specifically provided by Congress (P.L. 95-250, USC Sec 1a-1).

16 Congress intended the language of the *Redwood Amendment* to the *General Authorities Act* to reiterate
17 the provisions of the *Organic Act*, not to create a substantively different management standard. The
18 House committee report described the Redwood Amendment as a “declaration by Congress” that the
19 promotion and regulation of the national park system is to be consistent with the *Organic Act*. The Senate
20 committee report stated that under the *Redwood Amendment*, “The Secretary has an absolute duty, which
21 is not to be compromised, to fulfill the mandate of the 1916 Act to take whatever actions and seek
22 whatever relief as will safeguard the units of the national park system.” Although the *Organic Act* and the
23 *General Authorities Act*, as amended by the *Redwood Amendment*, use different wording (“unimpaired”
24 and “derogation”) to describe what the NPS must avoid, both acts define a single standard for the
25 management of the national park system—not two different standards. For simplicity, NPS *Management*
26 *Policies 2006* uses “impairment,” not both statutory phrases, to refer to that single standard.

27 **Executive Order 11990: Protection of Wetlands**

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

1 **Executive Order 11988: Floodplain Management**

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

5 **NPS Management Policies 2006**

6 *NPS Management Policies 2006* address management of ORVs in Section 8.2.3.1, Off-Road Vehicle Use.
7 This section states (NPS 2006b, 104):

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

15 In accordance with 36 CFR 4.10(b), routes and areas may be designated only in national
16 recreation areas, national seashores, national lakeshores, and national preserves, and only by
17 special regulation. In accordance with the executive order, they may be allowed only in locations
18 where there will be no adverse impacts on the area’s natural, cultural, scenic, and esthetic values,
19 and in consideration of other existing or proposed recreational uses. The criteria for new uses,
20 appropriate uses, and unacceptable impacts listed in sections 8.1 and 8.2 must also be applied to
21 determine whether off-road vehicle use may be allowed. As required by the executive order and
22 the *Organic Act*, superintendents must immediately close a designated off-road vehicle route
23 whenever the use is causing, or will cause, unacceptable impacts on the soil, vegetation, wildlife,
24 wildlife habitat, or cultural and historic resources.

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

29 Management polices relating to resource protection also were considered in developing this plan/EIS. For
30 example, *NPS Management Policies 2006* instructs park units to maintain, as parts of the natural
31 ecosystems of parks, all plants and animals native to park ecosystems, in part by minimizing human

1 impacts on native plants, animals, populations, communities, and ecosystems, and the processes that
2 sustain them (NPS 2006b, sec. 4.4.1, 43).

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

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

- 11 ▪ Cooperate with both the USFWS and the National Marine Fisheries Service to ensure that
12 NPS actions comply with both the written requirements and the spirit of the *Endangered*
13 *Species Act*. This cooperation should include the full range of activities associated with the
14 *Endangered Species Act*, including consultation, conferencing, informal discussions, and
15 securing of all necessary scientific and/or recovery permits.
- 16 ▪ Undertake active management programs to inventory, monitor, restore, and maintain listed
17 species' habitats; control detrimental non-native species; control detrimental visitor access;
18 and re-establish extirpated populations as necessary to maintain the species and the habitats
19 upon which they depend.
- 20 ▪ Manage designated critical habitat, essential habitat, and recovery areas to maintain and
21 enhance their value for the recovery of threatened and endangered species.
- 22 ▪ Cooperate with other agencies to ensure that the delineation of critical habitat, essential
23 habitat, and/or recovery areas on park-managed lands provides needed conservation benefits
24 to the total recovery efforts being conducted by all the participating agencies.
- 25 ▪ Participate in the recovery planning process, including the provision of members on recovery
26 teams and recovery implementation teams where appropriate.
- 27 ▪ Cooperate with other agencies, states, and private entities to promote candidate conservation
28 agreements aimed at precluding the need to list species.
- 29 ▪ Conduct actions and allocate funding to address endangered, threatened, proposed, and
30 candidate species.

1 Section 4.4.2.3 of the NPS *Management Policies 2006* also states that the "NPS will inventory, monitor,
2 and manage state and locally listed species in a manner similar to its treatment of federally listed species,
3 to the greatest extent possible. In addition, the Service will inventory other native species that are of
4 special management concern to parks (such as rare, declining, sensitive, or unique species and their
5 habitats) and will manage them to maintain their natural distribution and abundance" (NPS 2006b, sec.
6 4.4.2.3, 45).

* add

7 **Superintendent's Compendium: Closures, Permit Requirements, and Other Restrictions**

8 Under the provisions of 16 USC 3 and 36 CFR 1, Parts 1-7, the compendium details designated closures,
9 permit requirements, and other restrictions imposed under the discretionary authority of the
10 Superintendent. The general provisions of the compendium allow for closures and public use limits for
11 posted bird areas and turtle nests as well as vehicle restrictions during May through September on beach
12 areas in front of villages, on life guarded beaches, and on beaches adjacent to NPS campgrounds or other
13 posted areas. The compendium also covers restrictions for resource protection, public use, and recreation;
14 boating and water use activities; and vehicles and traffic safety. It prohibits vehicular access to beach or
15 soundside areas other than those marked and maintained vehicle access routes and prohibits all off-road
16 traffic on Pea Island National Wildlife Refuge, in accordance with USFWS management of the area.

17 **Superintendent's Order 10: Monitoring and Protection of Species of Concern**

18 This order reinforces that the Seashore's goal is to prevent "take" and contribute toward recovery of
19 protected species. Accomplishing this goal includes protective closures, monitoring and research, law
20 enforcement, predator control, and other management actions. The Seashore's efforts will also contribute
21 toward the *Government Performance and Results Act* (1993) goals for the NPS:

replaced by
Interim
Strategy

22 1a2A: 41% of federally listed species that occur or have occurred in parks are making progress
23 towards recovery.

24 1a2B: 70% of populations of native plant and animal species of management concern are
25 managed to self-sustaining levels, in cooperation with affected states and others, as defined in
26 approved management documents.

Superintendent's Order 7: 2004, 2006

27 **Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision
28 Making and Handbook**

29 NPS *Director's Order #12* and its accompanying handbook (NPS 2001) lay the groundwork for how the
30 NPS complies with NEPA. *Director's Order #12* and handbook set forth a planning process for

add
OFF-ROAD VEHICLE MANAGEMENT PLAN/EIS
* CAHA enabling legislation, 1937 quote 1st sentence "to be...
administered in accordance w/ section 1 of this chapter (ie. The Organic
Act); quote section on commercial fishing & section on
"suitable portions shall be developed... preservation of unique
flora & fauna etc."
2) 36 CFR 2.59 Commercial fishing reg

1 incorporating scientific and technical information and establishing a solid administrative record for NPS
2 projects.

3 *Director's Order #12* requires that impacts to park resources be analyzed in terms of their context,
4 duration, and intensity. It is crucial for the public and decision makers to understand the implications of
5 those impacts in the short and long term, cumulatively, and within context, based on an understanding and
6 interpretation by resource professionals and specialists. *Director's Order #12* also requires that an
7 analysis of impairment to park resources and values be made as part of the NEPA document.

8 **Director's Order 28: Cultural Resource Management**

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

14 **Director's Order 77: Natural Resource Protection**

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

24 **RELATIONSHIP TO OTHER CAPE HATTERAS NATIONAL SEASHORE PLANNING DOCUMENTS,** 25 **POLICIES AND ACTIONS**

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

28 **Past ORV Planning Efforts**

29 As described under "Summary of Off-Road Vehicle Use and Management at Cape Hatteras National
30 Seashore" earlier in this chapter, the Seashore has engaged in various ORV management activities since it

1 was established. All of these past planning efforts were taken into consideration during the development
2 of this plan/EIS.

3 **General Management Plan**

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

9 **Resource Management Plan**

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

15 ~~Commercial Services Plan~~

16 ~~The Seashore is developing a commercial services plan to identify necessary and/or appropriate~~
17 ~~commercial services in the Seashore and the best way for NPS to manage them. An EA for the~~
18 ~~commercial services plan is being prepared; the expected completion date is unknown.~~

19 **Government Performance Result Act Surveys**

20 From 1998 to 2008, Cape Hatteras National Seashore distributed a survey to visitors as part of
21 compliance with the *Government Performance Results Act (GPRA) Surveys*. These surveys focus on
22 measurable goals for visitor satisfaction, and visitor understanding and appreciation, which assist the
23 Seashore in its planning efforts to achieve its goals.

24 **Visitor Services Project Report**

25 The visitor services project report, or the *Outer Banks Group Parks Visitor Study Cape Hatteras National*
26 *Seashore Visitors* report, resulted from a visitor study conducted at the Seashore July 12 through 18,
27 2002. The study found that the most popular activities for current and past visitors were
28 sunbathing/swimming and visiting historic sites. The three most important reasons for visiting the
29 Seashore were the lighthouses, swimming, and uncrowded/solitude/low population. Also, when asked

1 about crowding, 27% of visitors said they felt “crowded” to “extremely crowded” while 43% of visitors
2 felt “somewhat crowded.” Many visitor groups (49%) felt that crowding “detracted from their park
3 experience” (NPS 2002, 2).

4 **Long-Range Interpretation Plan**

5 A long-range interpretation plan for the Seashore was completed in September 2007. This plan
6 recommends actions to be taken over the next five to seven years to improve the Seashore’s personal
7 services program and interpretive media, and provides an achievable implementation strategy (NPS
8 2007b, 49). Because this plan addresses exhibits, interpretive information, outreach, and education, it was
9 considered in the development of this plan/EIS.

10 **Predator Management Plan**

11 The Seashore is developing a predator management plan to address native and non-native predators that
12 prey on protected species of shorebirds and on sea turtle hatchlings. The plan/Environmental Assessment
13 was distributed for public review in [insert month and year] and a Finding of No Significant Impact was
14 signed [insert month and year].

15 **Special Use Permits and Permitted Activities**

16 A special use permit is required for activities at the Seashore that provide a benefit to an individual,
17 group, or organization, rather than the public at large, and that require some degree of management from
18 the NPS to protect park resources and the public interest. Examples include: religious ceremonies,
19 weddings, fishing tournaments, surfing tournaments, commercial filming, bike tours, marathons, car
20 rallies, and public speeches and assemblies. Permit fees vary and generally range between \$100 and \$500.
21 However, an additional fee is charged for any activity that requires NPS personnel participation or
22 monitoring, or that creates extraordinary administrative work. The full cost is charged for restoration of
23 park resources including litter cleanup (NPS nd, 1).

check w/
Steve Thompson
more likely "\$50-200"

24 **Commercial Use Authorizations**
~~Concessioner Permits and Operations~~

permits for authorized commercial operations

25 The Seashore issues ~~permits for operations of concessioners~~ permits for operations of concessioners such as a horseback ride operation;
26 instruction for surfing, kite surfing, and surf fishing; or kayak tours. These permitted activities are subject
27 to the supervision of the Superintendent. In addition to the general guidelines of the permit, there are
28 some additional provisions regarding liability, visitor use, and impacts to the Seashore.

29 **Ocracoke Transportation Study**

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1 Cape Hatteras National Seashore is currently preparing a transportation study on Ocracoke Island, which
 2 includes the evaluation of a high-speed passenger ferry to Ocracoke. The transportation study was
 3 scheduled to be completed by late 2005, but is still currently under development. The high speed ferry,
 4 which would be a private sector passenger shuttle, is still in discussion and not yet confirmed.

needs editing (not an NPS study)

5 **RELATIONSHIP TO OTHER FEDERAL PLANNING DOCUMENTS AND ACTIONS**

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

9 **Piping Plover Atlantic Coast Population Recovery Plan**

10 ORV management activities described in this plan/EIS considered the 1996 USFWS *Piping Plover*
 11 *Atlantic Coast Population Recovery Plan*. This population of piping plovers was listed as threatened in
 12 1986 and has increased from approximately 800 pairs to almost 1,350 pairs in 1995. However, pressure
 13 on Atlantic Coast beach habitat from development and human disturbance is pervasive and unrelenting,
 14 and the species is sparsely distributed. Increased human activity in Atlantic coast parks, which includes
 15 increased ORV use, is cited as one of the many reasons the piping plover was listed.

16 **Recovery Plan for the Great Lakes Piping Plover**

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

25 **Atlantic Green, Hawksbill, Leatherback, Kemp's Ridley, and Loggerhead Turtle Recovery Plans**

26 The USFWS and the National Marine Fisheries Service recovery plans for the U.S. population of Atlantic
 27 green, hawksbill, leatherback, Kemp's ridley, and loggerhead sea turtles were considered when
 28 developing this plan/EIS. Each of these species is federally listed and the Seashore considered the
 29 individual recovery plans (NMFS 1991a, 1991b, 1992; USFWS 1991a, 1991b, 1992a, 1992b, 1993,
 30 2008).

1 **Marine Mammal Recovery Efforts by the National Marine Fisheries Service**

2 This plan/EIS considered the *Marine Mammal Recovery Efforts of the National Marine Fisheries Service*.
3 The National Marine Fisheries Service Office of Protected Resources is charged with implementing the
4 *Marine Mammal Protection Act* and the *Endangered Species Act* with respect to marine mammal species
5 under the National Oceanic and Atmospheric Administration (NOAA) Fisheries jurisdiction: whales,
6 dolphins, porpoises, seals, and sea lions. These efforts are relevant to this plan because administrative
7 ORVs are used to assist marine mammals that have become stranded on the beach, and because ORVs
8 enhance visitors' access to marine mammals that are resting on the beach, which could potentially lead to
9 harassment.

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

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

14 **North Carolina Division of Marine Fisheries Regulations**

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

20 **North Carolina Wildlife Resources Commission Nongame and Endangered Wildlife Program**

21 The Nongame and Endangered Wildlife Program, established in North Carolina in 1983, aims to prevent
22 species from becoming endangered through maintaining viable, self-sustaining populations of all native
23 wildlife, with an emphasis on species in decline. The North Carolina Wildlife Resources Commission has
24 a Comprehensive Wildlife Strategy to protect state listed species. This strategy includes securing funding
25 for state fish and wildlife agencies to take preventative actions that help keep rare species from becoming
26 endangered, and keep common species common (NCWRC nd, 4). Species listed through this program as
27 state threatened, endangered, or of special concern were taken into consideration during the development
28 of this plan/EIS. Endangered and threatened wildlife, and wildlife species of special concern are protected
29 under Article 25 of Chapter 113 of the *North Carolina General Statutes*.

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

1 **Carolina**

2 The North Carolina Wildlife Resources Commission published the *Handbook for Sea Turtle Volunteers in*
3 *North Carolina* (NCWRC 2006). The handbook provides guidance to volunteers in conducting
4 biologically sound management projects to benefit sea turtles and to help ensure compliance with laws
5 pertaining to rare and endangered species at all levels of government. An annual permit is issued to the
6 Seashore by the North Carolina Wildlife Resources Commission under the authority of the USFWS.

7 **North Carolina Department of Transportation**

8 The North Carolina Department of Transportation (NCDOT) has various projects related to NC-12 and
9 other Outer Banks access issues. The NCDOT is considering some long-term projects in response to the
10 changing physical landscape of the area such as a bridge from Avon to Buxton, which is a possible area
11 for a future inlet. The Outer Banks Task Force has developed a long-term management plan for NC-12
12 that was considered during the development of this plan/EIS. NC-12 connects the communities located
13 within Cape Hatteras National Seashore to the mainland of North Carolina. Island residents depend on the
14 roadway for off-island community services, such as hospitals, emergency response, and waste collection.
15 NC-12 is also the primary evacuation route for all permanent and temporary residents on the island when
16 severe weather is approaching. Storms frequently cause the ocean to overwash NC-12 and deposit large
17 quantities of sand over portions of the roadway. The storms sometimes damage NC-12, which interrupts
18 access and services to the island and causes hardships for island residents. NC-12 must be continually
19 repaired and maintained to prevent permanent loss of access on Hatteras Island. To address these issues a
20 task force was formed comprising the NCDOT, NPS, Corps, USFWS, National Marine Fisheries Service,
21 Federal Highway Administration, Dare and Hyde counties, and the North Carolina Department of
22 Environment and Natural Resources. The mission of this task force is to develop a long-range protection
23 and maintenance plan for the transportation system on the Outer Banks. As part of this task force, hot
24 spots for erosion have been identified and include Northern Pea Island, Sandbag area, Rodanthe 'S'
25 curves, Buxton/Canadian Hole, Hatteras Village, and Ocracoke (OBTF 2003, 1).

26 The NCDOT is proposing to build a new bridge to replace the existing Herbert C. Bonner Bridge,
27 originally built in the 1960s, over Oregon Inlet before the end of the bridge's reasonable service life. The
28 NCDOT and the Federal Highway Administration released a supplemental draft EIS regarding this
29 replacement, and a supplement to the EIS was released in 2007 (OBTF 2007, 1, FHWA 2007, 1). In
30 September 2008, NCDOT announced its preferred alternative, known as the Parallel Bridge with Phased
31 Approach/Rodanthe Bridge Alternative. This alternative includes constructing a new Oregon Inlet bridge

1 (Phase I) west of the existing structure, and later elevating NC-12 onto a series of bridges during Phases
2 II-IV. Replacement of the Oregon Inlet bridge is expected to be complete in 2014 (NCDOT, 2008, 1).

3 **The North Carolina Coastal Area Management Act (CAMA)**

4 The North Carolina CAMA of 1974 establishes a cooperative program of coastal area management
5 between local and state governments through comprehensive planning for the protection, preservation,
6 orderly development, and management of the coastal area of North Carolina. Additional details regarding
7 CAMA are presented previously in this document under the Coastal Zone Management Act description.

8 **Dare and Hyde County Planning Documents**

9 The development and implementation of this plan/EIS considered the planning efforts of Dare and Hyde
10 counties. In Dare County, the County Planning Board serves as an advisory board to the Dare County
11 Board of Commissioners. In compliance with the North Carolina CAMA, Dare County prepared guidance
12 and policies for land use development, known as the *Land Use Plan* (Dare County 2003, 15), which
13 provides local elected officials with a set of guidelines for development patterns and other land use issues
14 that are important to the community. The *Land Use Plan* includes policies on various topics and
15 implementation activities such as policies on water quality, residential and commercial development
16 patterns, beach access, oceanfront and estuarine development, stormwater management, wastewater, and
17 transportation. The latest version of the Dare County *Land Use Plan* was certified by the North Carolina
18 Coastal Resources Commission in July 2003, and must be updated every five years, although the update
19 for 2008 is not complete [get 2008 update when available]. The *Land Use Plan* applies to the
20 unincorporated portions of Dare County, while each of the municipalities in Dare County adopts its own
21 plans for its respective planning jurisdiction. The Dare County *Land Use Plan* works in conjunction with
22 the zoning ordinance, as well as the CAMA. Except for the mainland villages and Wanchese, the
23 remainder of unincorporated Dare County is zoned. Detailed zoning maps have been adopted for the
24 villages of Duck, Collington, Roanoke Island, Avon, Buxton, and Hatteras. The villages of Rodanthe,
25 Waves, Salvo, and Frisco are zoned S-1, which is a minimal zoning district that allows all uses but does
26 establish some building setbacks and height limitations. In addition, the county adopted a Special
27 Environmental District (SED-1) for the Buxton Woods maritime forest. This zoning district establishes
28 special standards for land clearing and vegetation removal that are intended to protect the vegetative
29 canopy of the Buxton Woods forest (Dare County 2003, 93).

30 The *Hyde County Land Use Plan*, written in 1986, was updated in 1992, 1997, and 2006. *Hyde County*
31 *Land Use Plan* is required as part of the State of North Carolina's Coastal Area Management Act and

1 analyzes land development in the area to plan for future uses. The plan sets forth the following vision for
2 the Island of Ocracoke (Hyde County 2006, 166):

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

- 7 • Efforts to maintain the historic village assets.
- 8 • Efforts to preserve traditional native occupations and crafts including hunting and
9 commercial fishing.
- 10 • Efforts to enhance the Island shopping opportunities with small locally owned shops and
11 businesses.
- 12 • Efforts to provide affordable housing.
- 13 • Cooperative efforts with the community, NPS, and DOT to maintain access to the Island and
14 provide necessary amenities. Ocracoke and Mainland should emphasis access.
- 15 • Support village craftsmen.

16 *Outer Banks Scenic By-way (add section)*
Outer Banks Visitor Bureau Conversion Study

17 In 2003 the Outer Banks Visitor Bureau conducted a study to determine the effectiveness of the Outer
18 Banks marketing material. The study reviewed the relationship between the number of people requesting
19 information about the Outer Banks in Dare County versus the actual number of people that traveled to the
20 area, known as the conversion rate. In 2003, 33% of the respondents to the visitation survey visited the
21 Outer Banks, a drop from 44% that visited the area in 2000. A few plausible reasons for this decline
22 include:

- 23 1. People who have less experience with the destination have to familiarize themselves with the
24 area, and they take longer to consider their decision.
- 25 2. A major feature that was promoted in the advertising for the Seashore was the First Flight
26 celebration in 2003 that occurred in December. Visitors may have waited to visit the Seashore
27 until that time, and were not captured in this study.
- 28 3. In 2002 the economic climate and political uncertainty may have made people more cautious
29 about traveling and investing in travel.

1 Overall a general beneficial economic impact from the visitation campaign was seen at the Seashore. The
 2 study also reported a large number of people who received materials and did not visit the Outer Banks in
 3 that year but planned to make the trip in future years (SMR 2003, 9).

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

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

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

16
 17 In addition to these general guidelines, the surrounding municipalities have individual ORV regulations,
 18 as shown in table 1.

19 **Table 1. ORV Regulations for Outer Banks Municipalities**

| Regulation/Guideline | Duck | Kill Devil Hills | Nags Head | Kitty Hawk and Southern Shores* |
|---|------|------------------|-----------|---------------------------------|
| Observe 15 mph speed limit | X | X | X | |
| Use designated ramps to enter/exit the beach | X | X | X | |
| Drive only between foot of dunes and ocean | X | X | X | |
| Be cautious / considerate of other visitors | X | X | X | |
| Vehicle must be registered with valid license plate | X | X | X | |
| Operator must have current license | X | X | X | |
| No permit required between October 1 and April 30 | X | X | X | |

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| | | | | |
|--|---|---|---|---|
| Vehicle must have 4-wheel drive | | X | | |
| Night driving is permitted | | X | | |
| Government, law enforcement, emergency, rescue services exempt | X | X | X | X |
| Commercial fishermen exempt | | | | X |
| ORV must be permitted by Regulations Governing Off-Road Vehicles | | | X | |

*No motorized vehicles are allowed at Kitty Hawk and Southern Shores except for commercial fishermen and government/emergency vehicles.

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FEDEX TO!

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CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

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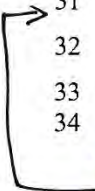
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Light Scapes ? Issue is whether we include this as related to impacts of ORVs on turtles /birds at night. See page 19

- 1 provided by the Seashore's general management plan, strategic plan, and/or other management guidance.
 2 The following are objectives identified by Seashore staff for developing this plan/EIS.

3 **MANAGEMENT METHODOLOGY**

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

13 **NATURAL PHYSICAL RESOURCES**

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

*Is this actually addressed anywhere
in the EIS? STET*

16 **THREATENED, ENDANGERED, AND OTHER PROTECTED SPECIES**

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

21 **VEGETATION**

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

23 **OTHER WILDLIFE AND WILDLIFE HABITAT**

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

DRAFT – December 8, 2008

1 To implement the interim strategy, the NPS completed an EA in accordance with NEPA, and evaluated
 2 several alternatives in the interim strategy/EA. Alternative D, as modified in the *Finding of No Significant*
 3 *Impact* (NPS 2007a) of the strategy/EA was identified as the selected alternative. Alternative D outlines a
 4 multifaceted strategy (including an increased program of monitoring, recreational and ORV closures,
 5 education and enforcement) for minimizing impacts to wildlife, ^{specifically} threatened and endangered species, and
 6 other protected species, from visitor uses, including ORV use.

7 The USFWS Raleigh Field Office prepared a Biological Opinion associated with the interim strategy/EA
 8 in response to their review of the Cape Hatteras National Seashore's biological assessment (NPS 2006c,
 9 January 6, 2006), the *Cape Hatteras National Seashore Interim Protected Species Management*
 10 *Strategy/EA* (NPS 2006a, January 18, 2006), and other sources of published and unpublished biological
 11 information. The Biological Opinion evaluated the proposed action of the interim strategy/EA and its
 12 potential impact to protected species at the Seashore. The USFWS concluded that incidental take of
 13 protected species would occur from management actions under the interim strategy/EA, but that this level
 14 of anticipated take during the limited period the interim strategy/EA would be in effect ^{would} is not likely to
 15 result in jeopardy to the species or destruction or adverse modification of designated or proposed critical
 16 habitat (USFWS 2006, 75).

17 In October 2007, a lawsuit was filed against the NPS alleging inadequacies in management of protected
 18 species at the Seashore and failure of the Seashore to comply with NPS regulations regarding ORV use
 19 (see Litigation, below). On April 30, 2008, a consent decree was issued to settle the lawsuit. The consent
 20 decree modifies the actions analyzed in the Biological Opinion and requires the NPS to follow the interim
 21 strategy/EA, except as modified by the provisions of the consent decree. Modifications in the interim
 22 strategy/EA and the consent decree include changes to the buffers provided for various species at the
 23 Seashore, as well as added restrictions related to night driving.

24 LITIGATION

25 This plan/EIS was developed partially as the result of two petitions for rulemaking submitted to the NPS.
 26 The first, submitted on December 9, 1999, requested a ban on the use of all-terrain vehicles, dune
 27 buggies, sand buggies, and other four-wheel drive vehicles on all off-road areas in the national park
 28 system. The second petition, specific to Cape Hatteras National Seashore, submitted on June 7, 2004,
 29 requested Rulemaking Governing Off-Road Vehicle Use in the Cape Hatteras National Seashore.
 30 Petitioners claimed the Seashore's informal authorization of ORV use violated the Endangered Species
 31 Act, executive orders and federal regulations regarding ORV use in the National Parks, the NPS Organic

(don't believe
EA addressed
minimizing impacts
to wildlife generally)

(Lawsuit?)

1 In the remaining categories, the research showed:

- 2 • ORV traffic has a negative impact on sand and sediments due to compaction, decreased
3 infiltration, and moisture availability.
- 4 • ORV traffic causes direct damage to vegetation, and indirect impacts to adjacent, non-dune plant
5 communities (need to be addressed further) ? *Is this suppose to be here?
Something missing?*
- 6 • ORV traffic has a negative direct impact on the ability of soil to support dune vegetation due to
7 changes in moisture retention, soil compaction, and soil salinity. Indirect impacts need further
8 examination.

9 The studies discussed in the literature review, as well as other studies, demonstrate that ORVs do have an
10 impact to coastal ecosystems, including wildlife and vegetation. Further study was suggested to determine
11 the level of these impacts and the effectiveness of management measures.

12 **SCOPING PROCESS AND PUBLIC PARTICIPATION**

13 A notice of intent was published in the Federal Register on December 11, 2006, to announce the
14 beginning of the ORV planning process. To determine the scope of issues to be analyzed in depth in this
15 plan/EIS, meetings were conducted in February and March of 2007 with Seashore staff, other parties
16 associated with preparing this document, and members of the public. Additional public meetings were
17 held in January 2008 to examine the range of alternatives and provide input on alternative elements. In
18 response to public input and issues raised during the scoping process, the interdisciplinary planning team
19 reworked the preliminary alternatives to those analyzed in this plan. Chapter 5 of this plan/EIS contains
20 more details about agency and public scoping activities that were an integral part of the planning process
21 for this plan/EIS.

22 **REGULATORY NEGOTIATION PROCESS**

23 The *Negotiated Rulemaking Act of 1990* (5 USC 561-570) establishes a statutory framework for agency
24 use of negotiated rulemaking to reach a consensus with stakeholders on a proposed regulation. Concurrent
25 with the NEPA process, the Seashore is using a negotiated rulemaking process to develop a proposed rule
26 for long-term ORV management at the Seashore. Because negotiated rulemaking allows interested,
27 affected parties more direct input into the development of the proposed regulation, NPS expects the
28 negotiated rulemaking process to result in a rule that is sensitive to the needs and limitations of both the
29 parties and the agency. In January 2008, the regulatory negotiation committee was formally established

1 assemblage of birds. Rich, varied habitats and the Seashore's location along the Atlantic Flyway attract
2 birds. In 1999, the American Bird Conservancy designated Cape Hatteras National Seashore as a Globally
3 Important Bird Area in recognition of the Seashore's value in bird migration, breeding, and wintering
4 (American Bird Conservancy 2005, 1). This diverse ecosystem includes both those species that sensitive
5 species rely on for survival, and predators of sensitive species. ORV use along the Seashore can disrupt
6 habitat or cause a loss of habitat in high use areas. Habitat loss due to ORV use could also occur
7 indirectly as a result of the noise and disturbance from this activity.

8 Invertebrates are impacted by ORV use. A recent study at the Seashore researched the ghost crab
9 (*Ocypode quadrata*) as an indicator of ecosystem health, since it may show the impacts of ORVs and
10 other recreational uses. The study considered the impacts of ORVs on ghost crab population densities and
11 recovery rates in relation to ORV use and usage regulations. Data to determine the impacts of off-road
12 vehicles on crab populations was collected in several areas in the Seashore. Closures of the beaches to
13 vehicles were initiated to study short-term effects and recovery rates. It was found that ORVs had a
14 detrimental impact on ghost crab populations at the Seashore and that areas subject to vehicle use had
15 significantly fewer ghost crab burrows than those areas without vehicles. As shown by Steiner and
16 Leatherman (1981, 111), ghost crabs can be killed or mortally injured by ORVs driving over them, or by
17 altering their environment. This study concluded that high-energy weather events change the dynamics of
18 the population, allowing more ghost crabs to inhabit the area, but ORVs reduce the ability for ghost crabs
19 to inhabit the area (VIMS 2004, 47).

20 **RARE, UNIQUE, THREATENED, AND ENDANGERED SPECIES**

21 **Federally Listed Threatened and Endangered Species**

22 ORV use at the Seashore could impact federally threatened or endangered species and their habitats on
23 the Seashore's soundside and ocean beaches. Conflicts between listed species and recreational use
24 (including ORV use) could create direct or indirect losses to a listed species. The Seashore is home to
25 federally threatened and endangered species year round. Increased year-round visitation results in a
26 greater potential for conflicts between visitor use and listed species. The Seashore is used by both the
27 Great Lakes population of piping plover (for wintering) and the Atlantic Coast population (for breeding
28 and wintering). Seabeach amaranth, a federally listed plant species, has been found in limited numbers at
29 the Seashore. According to the USFWS, seabeach amaranth has been eliminated from two-thirds of its
30 historic range and one of the most serious threats to its continued existence is disturbance by ORVs.

31 Nesting sea turtles at the Seashore include the loggerhead, green, and leatherback turtles, and Kemp's
32 ridley turtles are occasional visitors. Threats to listed sea turtles, their nesting sites, and young include

1 and affecting habitat for turtles. However, these secondary impacts are addressed under the
 2 impact topics of wildlife, threatened and endangered species, and visitor use. Therefore, geologic
 3 resources was not retained as an impact topic.

- 4 • **Geohazards:** There are no known geohazards in the Seashore that would be affected by the
 5 implementation of an ORV management plan.
- 6 • **Unique Ecosystems, Biosphere Reserves, World Heritage Sites:** There are no known biosphere
 7 reserves, World Heritage sites, or unique ecosystems listed in the Seashore; therefore,
 8 implementation of an ORV management plan would have no effect. *Globally Important Bird
 Area? (p. 17, lines 2-3)*
- 9 • **Water Quality / Marine and Estuarine Resources:** ORV use has the potential to impact water
 10 quality at the Seashore due to fluids leaking from submerged vehicles or tire ruts altering natural
 11 drainage patterns. However, water quality impacts from submerged vehicles would not rise above
 12 the level of negligible impacts to water quality as long as the vehicle was removed from the water
 13 in a timely fashion. Also, due to the ephemeral nature of tire ruts in beach sand, they would not
 14 result in impacts to water quality. Therefore, this impact topic was dismissed from further
 15 analysis.
- 16 • **Wildlife and Wildlife Habitat – Fish, Marine Mammals, and Mammals:** Impacts of predators
 17 on other species at the Seashore are influenced in part by the trash and food scraps human visitors
 18 leave behind at the Seashore. Seashore predators include raccoons, ghost crabs, sea gulls, herring
 19 gulls, bald eagles, snakes, and feral cats. An environmental assessment process for predator
 20 management was initiated in 2007. The final assessment document and plan will address the
 21 Seashore's approach to native and non-native predators, specifically those species that prey on
 22 federal and state-listed species present at the Seashore, and therefore those species are not
 23 addressed as an impact topic in this plan/EIS. Impacts to mammals from ORV use and
 24 management would be expected to be negligible. Although harassment of marine mammals could
 25 occur from various park users, including those using ORVs, this would be infrequent, and the
 26 plan will include measures to educate all visitors about resting marine mammals, resulting in
 27 negligible to minor impacts to these species.
- 28 • **Air Quality:** Cape Hatteras National Seashore is located in an area classified by the U.S.
 29 Environmental Protection Agency as being in attainment for all six criteria pollutants. Despite
 30 being in attainment, activities associated with ORVs (driving, idling engines, and running
 31 generators) could create localized increases in air pollution, potentially degrading the visitor
 32 experience and contributing to greenhouse gas emissions that have been linked to global

1 was established. All of these past planning efforts were taken into consideration during the development
2 of this plan/EIS.

3 **General Management Plan**

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

9 **Resource Management Plan**

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

15 **Commercial Services Plan**

16 The Seashore is developing a commercial services plan to identify necessary and/or appropriate
17 commercial services in the Seashore and the best way for NPS to manage them. An EA for the
18 commercial services plan is being prepared; the expected completion date is unknown.

19 **Government Performance Result Act Surveys**

20 From 1998 to 2008, Cape Hatteras National Seashore distributed a survey to visitors as part of
21 compliance with the *Government Performance Results Act (GPRA) Surveys*. These surveys focus on
22 measurable goals for visitor satisfaction, and visitor understanding and appreciation, which assist the
23 Seashore in its planning efforts to achieve its goals.

24 **Visitor Services Project Report**

25 The visitor services project report, or the *Outer Banks Group Parks Visitor Study Cape Hatteras National*
26 *Seashore Visitors* report, resulted from a visitor study conducted at the Seashore July 12 through 18,
27 2002. The study found that the most popular activities for current and past visitors were
28 sunbathing/swimming and visiting historic sites. The three most important reasons for visiting the
29 Seashore were the lighthouses, swimming, and uncrowded/solitude/low population. Also, when asked

? ? ?
(no change here!
in just ignorant
of any "development"!

1 Cape Hatteras National Seashore is currently preparing a transportation study on Ocracoke Island, which
2 includes the evaluation of a high-speed passenger ferry to Ocracoke. The transportation study was
3 scheduled to be completed by late 2005, but is still currently under development. The high speed ferry,
4 which would be a private sector passenger shuttle, is still in discussion and not yet confirmed.

may want from
update
Mike M.
Dorend G.
I think this is
done in water

5 **RELATIONSHIP TO OTHER FEDERAL PLANNING DOCUMENTS AND ACTIONS**

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

9 **Piping Plover Atlantic Coast Population Recovery Plan**

10 ORV management activities described in this plan/EIS considered the 1996 USFWS *Piping Plover*
11 *Atlantic Coast Population Recovery Plan*. This population of piping plovers was listed as threatened in
12 1986 and has increased from approximately 800 pairs to almost 1,350 pairs in 1995. However, pressure
13 on Atlantic Coast beach habitat from development and human disturbance is pervasive and unrelenting,
14 and the species is sparsely distributed. Increased human activity in Atlantic coast parks, which includes
15 increased ORV use, is cited as one of the many reasons the piping plover was listed.

16 **Recovery Plan for the Great Lakes Piping Plover**

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

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

26 The USFWS and the National Marine Fisheries Service recovery plans for the U.S. population of Atlantic
27 green, hawksbill, leatherback, Kemp’s ridley, and loggerhead sea turtles were considered when
28 developing this plan/EIS. Each of these species is federally listed and the Seashore considered the
29 individual recovery plans (NMFS 1991a, 1991b, 1992; USFWS 1991a, 1991b, 1992a, 1992b, 1993,
30 2008).

J. HAYES

WORKUP
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Chapter 2 Alternatives

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- 1 • Provide information to the public about nesting birds and sea turtles and measures taken by the
2 Seashore to protect nests and hatchlings.
- 3 • Post information about protected species (including seabeach amaranth) at all ORV ramp bulletin
4 boards.
- 5 • Publish annual protected species reports regarding the previous breeding season on the Seashore
6 website.
- 7 • Enforce proper trash disposal (pack in/pack out) and anti-wildlife feeding regulations throughout
8 the Seashore, including proper disposal of fishing bait and filleted fish carcasses. Provide
9 education and outreach materials regarding the impacts of trash disposal, wildlife feeding,
10 fireworks, and pets on sensitive Seashore species. Solicit from interested parties how to convey
11 information about the species management program.
- 12 • Notify the public of species management closures that would temporarily limit ORV traffic. Send
13 a press release to local and regional newspapers and contact local tackle shops and ORV
14 organizations when species closures established or reopened.

15

16 **NO-ACTION ALTERNATIVES**

17 The “no action” alternatives were developed for two reasons. A no-action alternative may be a viable
18 choice in the range of reasonable alternatives, and the no-action alternatives set a baseline of existing
19 impacts continued into the future against which to compare the impacts of action alternatives. For this
20 EIS, the range of alternatives includes two no-action alternatives. Alternative A represents continuing
21 management as described in the *Interim Protected Species Management Strategy/EA*. This management
22 was challenged in court and subsequently modified by the Consent Decree that was signed on April 30,
23 2008. Alternative B represents continuing management as described in the Consent Decree. Two no-
24 action alternatives are analyzed to capture the full range of management actions that occurred and are
25 currently occurring.

26 Tables 1 and 2 compare the actions that would be taken under each alternative and figure 1 contains the
27 maps of all alternatives.

1 complete a written or on-line exam demonstrating their understanding of the rules and regulations
 2 governing ORV use at the Seashore, beach driving safety, and resource closure requirements. After
 3 completing the exam, the owner would be required to sign for the permit in acknowledgement that the
 4 signer understands the rules and that all drivers of the permitted vehicle will abide by the rules and
 5 regulations governing ORV use at the seashore. A violation of the rules and regulations by the owner or
 6 driver of the ORV could result in revocation of the vehicle permit, and the owner/permittee would not be
 7 allowed to obtain another permit for any ORV for a specified period of time. Designated routes and areas
 8 under alternative C are shown on figure 1 and details of the management actions under this alternative are
 9 described on table 1.

10 **ALTERNATIVE D: INCREASED PREDICTABILITY AND SIMPLIFIED MANAGEMENT**

11 This alternative would provide visitors to the seashore with the maximum amount of predictability
 12 regarding areas available for ORV use and vehicle-free areas for pedestrian use, which means restrictions
 13 would be applied to larger areas and for longer periods of time to avoid changes in approved use patterns
 14 over the course of the year. Under this alternative, ORV management would be achieved by identifying
 15 areas that historically do not support sensitive resources and areas of lower visitor use. These areas would
 16 be designated as ORV use areas year-round. Areas of historically high resource sensitivity or high ^{visitor}
 17 use would not be designated ORV routes or areas. Establishing ORV routes and use areas and vehicle-
 18 free areas on a year-round basis (rather seasonally) would be a simplified management approach that
 19 would reduce confusion about which areas are available for ORV use during a specified time, and would
 20 reduce the need for staff resources on the beach. Because of the relative simplicity of the elements of this
 21 alternative, implementation would require a reduced level of park staff and resources and would maximize
 22 the efficiency of park operations.

non-ORV?

23 Table 2 indicates the proposed year-round use areas under alternative D. Year-round vehicle-free areas
 24 would include the area in front of villages, campgrounds, and lifeguarded beaches. Frisco Campground
 25 would be an exception, because closing this area would close off a larger area of the beach than necessary
 26 based on the existing ramp system.

27 Vehicle-free areas would enhance visitor safety during periods of high visitation, particularly in the
 28 summer months, and would also provide a vehicle-free experience for visitors during the off-season. The
 29 soundside would be established as a vehicle-free area to protect sensitive vegetation. Parking would be
 30 available at the existing soundside ramps and access paths would be at designated boat launches. Vehicle-
 31 free areas would be established year-round at Cape Point and the spits to provide a simplified approach to
 32 sensitive species management for Seashore operations, maximizing contiguous protected areas and

1 **HOW ALTERNATIVES MEET OBJECTIVES**

2 As stated in the “Purpose of and Need for Action” chapter, all action alternatives selected for analysis
 3 must meet all objectives to a large degree. The action alternatives must also address the stated purpose of
 4 taking action and resolve the need for action; therefore, the alternatives were individually assessed in light
 5 of how well they would meet the objectives for this plan and environmental impact statement, which are
 6 stated in chapter 1. Alternatives that did not meet the objectives were not analyzed further (see the
 7 “Alternatives Eliminated from Further Consideration” section in this chapter).

8 Table 3 compares how each of the alternatives described in this chapter would meet the plan objectives.
 9 “Chapter 4: Environmental Consequences” describes the effects of each alternative on each impact topic.
 10 These impacts are summarized in table 4.

11 **ALTERNATIVE ELEMENTS CONSIDERED BUT DISMISSED FROM FURTHER** 12 **CONSIDERATION**

13 **USE AREAS, ORV MANAGEMENT, AND VISITOR USE**

14 **Consider Pea Island National Wildlife Refuge When Considering Use Areas**

15 Many commenters suggested that Pea Island National Wildlife Refuge should be considered when
 16 developing this plan/EIS. Suggestions included considering Pea Island as a vehicle-free area, and
 17 conversely, as a potential area where ORVs could be used where there is not a resource conflict.
 18 Commenters felt that Pea Island National Wildlife Refuge should be considered as part of the baseline for
 19 analysis, and should be considered when providing appropriate visitor use. Although the 5,880-acre Pea
 20 Island National Wildlife Refuge is located at the northern end of Hatteras Island, and is part of the
 21 Seashore, the refuge is administered by the USFWS. Because it is not administered by the Seashore, the
 22 Seashore cannot direct the visitor uses at Pea Island National Wildlife Refuge. USFWS is responsible for
 23 making decisions about ORV and pedestrian access. Currently, the USFWS has determined that ORV use
 24 would not be appropriate or compatible with the mission of the refuge.

25 **Require Other Jurisdictions Change Their Infrastructures and Regulations**

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

- 27 • Provide NPS parking and beach access points through Dare County villages.
- 28 • Lower the speed limit on NC-12 between villages to 45 miles per hour during peak use times to
 29 reduce the danger from vehicles with “aired-down” tires.

1 North Carolina Wildlife Resources Commission, habitat creation projects tend to be short-lived
 2 and labor intensive. Based on experience with hand pulling, herbicides, fires, and bulldozing, it
 3 was found that most of these techniques are effective for only one season before the vegetation
 4 returns. Covering areas with new dredge material has been shown to last longer, with vegetation
 5 returning after four to seven years (Cameron 2007). Although the NPS recognizes that creation
 6 of habitat may be viable, at this time more research needed to determine the most effective
 7 method for this process. If this method is employed, it would occur outside the scope of the
 8 plan/EIS and therefore was not included in the alternatives.

9 **Fence Chicks Away from the ORV Corridor**

10 Commenters suggested using fencing to keep chicks away from the ORV corridors. Unfledged chicks of
 11 any species need access to the intertidal zone and moist substrate habitat for foraging. Fencing chicks
 12 away from these areas would essentially prevent them from eating; therefore, this was not considered a
 13 reasonable alternative.

*Also, could use ~~mandate~~ mandate to preserve
 ecosystem, as in p. 21, line 32 et seq.*

14 **Do Not Provide Protection to the Seabeach Amaranth**

15 Commenters suggested not providing protection to the seabeach amaranth because it is a farmed plant.
 16 However, the seabeach amaranth is protected as a federally listed threatened plant species. Under the
 17 *Endangered Species Act*, federal agencies are required to use their authorities in furtherance of the
 18 purposes of the *Endangered Species Act* by carrying out programs for the conservation of endangered and
 19 threatened species and to ensure that any agency action authorized, funded, or carried out by the agency is
 20 not likely to jeopardize the continued existence of any endangered species or threatened species or result
 21 in the destruction or adverse modification of designated critical habitat. Further, *NPS Management*
 22 *Policies 2006* state that, "The Service will survey for, protect, and strive to recover all species native to
 23 national park system units that are listed under the Endangered Species Act" (NPS 2006: 45). Not
 24 providing protection to a federally listed threatened species would be out of compliance with the
 25 *Endangered Species Act* and contrary to the *NPS Management Policies 2006*, and was therefore not
 26 included in the alternatives of this plan/EIS.

27 **Give Special Consideration Only to Flora and Fauna Listed as Threatened and Endangered**

28 Commenters suggested that only those species listed as threatened or endangered under the federal
 29 *Endangered Species Act* should be considered in this plan. As stated above, the NPS has legal
 30 responsibilities under the *Endangered Species Act* and its own policies to protect threatened and
 31 endangered species. Further, a number of laws, regulations, and policies, in addition to the *Endangered*

1 **CONSISTENCY WITH THE PURPOSES OF THE NATIONAL ENVIRONMENTAL**
2 **POLICY ACT**

3 Section to be completed after second draft comments

4 The National Environmental Policy Act requires an analysis of how each alternative meets or achieves the
5 purposes of the act, as stated in Section 101(b). Each alternative analyzed in a NEPA document must be
6 assessed as to how it meets the following purposes:

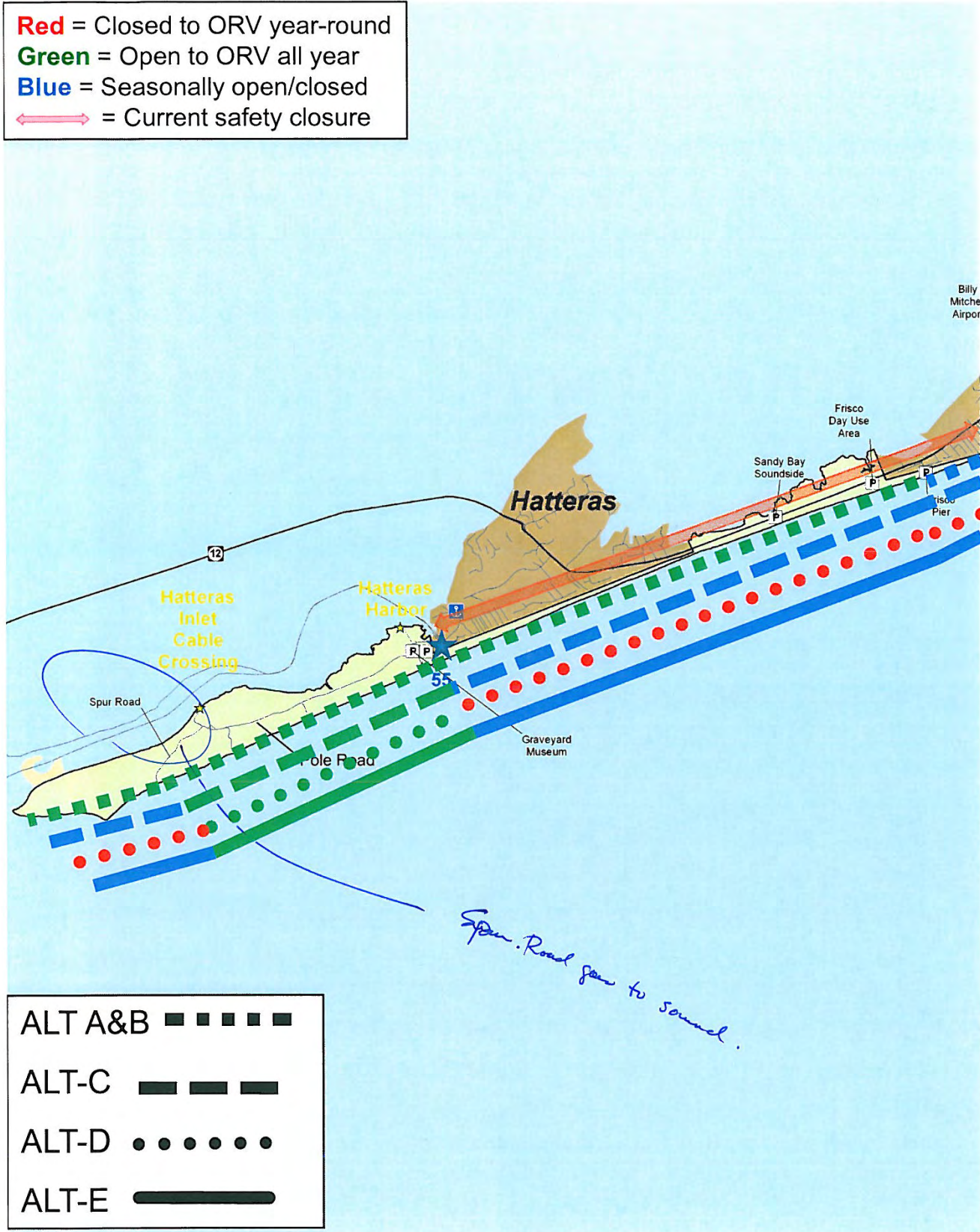
- 7 (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding
8 generations;
- 9 (2) assure for all Americans safe, healthful, productive, and esthetically and culturally
10 pleasing surroundings;
- 11 (3) attain the widest range of beneficial uses of the environment without degradation, risk of
12 health or safety, or other undesirable and unintended consequences;
- 13 (4) preserve important historic, cultural, and natural aspects of our national heritage and
14 maintain, wherever possible, an environment that supports diversity and variety of
15 individual choice;
- 16 (5) achieve a balance between population and resource use that will permit high standards of
17 living and a wide sharing of life's amenities; and
- 18 (6) enhance the quality of renewable resources and approach the maximum attainable
19 recycling of depletable resources.

20 CEQ has promulgated regulations for federal agencies' implementation of NEPA (40 CFR Parts 1500–
21 1508). Section 1500.2 states that federal agencies shall, to the fullest extent possible, interpret and
22 administer the policies, regulations, and public laws of the United States in accordance with the policies
23 set forth in the act [sections 101(b) and 102(1)]; therefore, other acts and NPS policies are referenced as
24 applicable in the following discussion. ?

- 25 • Alternative A: No Action – Continuation of Management Under the Interim Protected Species
26 Management Strategy
- 27 • Alternative B: No Action – Continuation of Terms of Consent Decree Signed April 30, 2008
- 28 • Alternative C: Seasonal Management
- 29 • Alternative D: Increased Predictability and Simplified Management
- 30 • Alternative E: Variable Access and Maximum Management
- 31 • Alternative F: Negotiated Rulemaking Consensus

0022791

Red = Closed to ORV year-round
Green = Open to ORV all year
Blue = Seasonally open/closed
↔ = Current safety closure



Thompson
1/30/09
markup

CHAPTER 3: AFFECTED ENVIRONMENT

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1 **Nonbreeding and Migratory Habitat**

2 Harrington (1996, 34; 2001, 9) describes how, during the winter, the red knot frequents intertidal habitats,
3 notably along ocean coasts and large bays. Both areas usually display high waves or strong currents while
4 supplying a sandy habitat. These areas are selectively chosen in South America, with the most abundant
5 population on the island of Tierra del Fuego in Argentina and Chile (Morrison and Ross 1989, 223, 226,
6 249, 252).

7 On migration, the red knot principally uses marine habitats in both North and South America. Coastal
8 habitats along the mouths of bays and estuaries are preferred, providing sandy beaches to forage
9 (Harrington 1996, 70; 2001, 8). High wave energy is associated with these areas (Harrington 2001, 9;
10 Vooren and Chiaradia 1990, 20; Blanco et al. 1992, 203). Red knots are also known to use tidal flats in
11 more sheltered bays or lagoons in search of benthic invertebrates or horseshoe crab eggs (Harrington
12 1996, 47-78; 2001, 9; Tsipoura and Burger 1999, 635). In some cases, beach habitats are preferred
13 because of high densities of benthic bivalves (Harrington 1996). Red knots also use tidal flats in more
14 sheltered bays or lagoons, where they hunt for benthic invertebrates (Harrington 2001, 9) or for special
15 foods, such as horseshoe crab eggs (Harrington 1996, 70; Tsipoura and Burger 1999, 635). Delaware Bay
16 hosts the largest number of spawning horseshoe crabs in the United States, a primary food source for the
17 red knot. At Delaware Bay, the red knot feed and put on weight needed for winter migration. The
18 increasing human harvest of the horseshoe crab has reduced this food source for red knots, and this dearth
19 is believed to be contributing to the red knot's failure to reach its needed threshold departure weight of
20 6.3 to 7.0 ounces. Hence, there has been a systematic reduction in the body weight of red knots leaving
21 Delaware Bay for the Arctic, which negatively impacts their ability to survive and breed (Baker et al.
22 2004, 875).

23 **Risks**

24 Red knots are highly vulnerable to degradation of the resources on which they depend to accomplish their
25 migrations. Morrison et al. (2004, 61) have identified four factors that cause this vulnerability: (1) a
26 tendency to concentrate in a limited number of locations during migration and on the wintering grounds
27 so that deleterious changes can affect a large proportion of the population at once; (2) a limited
28 reproductive output, subject to vagaries of weather and predator cycles in the Arctic, which, in
29 conjunction with a long lifespan, suggests slow recovery from population declines; (3) a migration
30 schedule closely timed to seasonally abundant food resources, such as horseshoe crab eggs during spring
31 migration in Delaware Bay (Tsipoura and Burger 1999, 635), suggesting that there may be limited

1 **Recreational Fishing**

2 The waters off the Seashore are known throughout the world as highly productive fishing areas. The fish
3 that congregate in the waters off the Outer Banks attract anglers from throughout the region, but largely
4 from North Carolina and Virginia. In the spring and fall, when bluefish (*Pomatomus saltatrix*), spotted
5 sea trout (*Cynoscion nebulosus*), red drum, ^(genus/species?) and other species are present in offshore waters, surf
6 fishermen line the beaches to cast their baits and lures over the incoming breakers and into the schooling
7 fish. Most of the beach and sound is open to fishing as are the fishing piers in the villages of Rodanthe,
8 Frisco and Avon. NPS boat ramps are located at the Oregon Inlet Marina and near the ferry office in
9 Ocracoke village. Charters and head-boat services (boats that carry a large number of anglers that pay by
10 the person) are available at local marinas.

11 Particularly productive and high demand fishing areas include Ocracoke, Hatteras and Oregon Inlets, and
12 Cape Point, which are often accessed via ORVs. ORV counts at ramps accessing these inlets exceeded
13 those of other beach access ramps. This use is discussed in the “Off-Road Vehicle Use and Access”
14 section that follows below.

15 Typically, fishing tournaments occur in the spring and fall in locations throughout the Seashore as shown
16 in table 15. Tournament data from 2001 to 2008 indicate that, normally, about eight to nine fishing
17 tournaments occur annually (S. Thompson, NPS, pers. comm, 2008). While data are not available for
18 actual attendance, the fall events are well-attended. For 2005, estimates indicate that more than 720
19 people participated in one event that lasted for two days. Some tournaments may only have 25
20 participants, depending on the availability of fish and weather. Restrictions are placed upon the events as
21 to location and times to ensure the availability of recreational areas for other Seashore visitors. These
22 restrictions change from time to time depending on the time of the year, seasonal visitation figures, past
23 experience with the sponsors, and how the proposed event is structured. Typically, Seashore beaches 0.5
24 mile on either side of Cape Point and 0.5 mile on either side of an inlet are closed to tournament fishing.

25 Like other Seashore visitors, tournament participants are not allowed in any resource closure areas.
26 Tournaments take place in the designated ORV corridor, which has presented conflict with recreational
27 anglers during the tournaments on a few occasions (NPS 2006e, 153).

28

29

30

1 become too narrow. About half (approximately 26 miles) of the beaches are open to ORV use during the
2 summer months. On the soundside, 17 access points are available to ORVs. However, only approximately
3 four miles of soundside areas are open for ORV use because the Seashore prohibits ORV use on
4 vegetated areas, and most of the soundside areas have vegetation. Closures vary from year to year
5 depending on a range of management considerations.

6 Following Hurricane Isabel, ORV use areas were put in place in March 2004 to protect sensitive habitat
7 that opened up as a result of dune destruction and to provide for more consistent management of breeding
8 and nesting bird closures. These closures did not decrease the sum total of shoreline miles open to ORV
9 access and public recreation nor did it impact the number of ramps open to allow ORV access to Seashore
10 beaches. White posts were placed 150 feet landward from the average, normal high tide line, or if
11 existing, at the vegetation or remnant dune line. Beach areas landward of the post line, although not open
12 to ORV use, are open to pedestrian use (NPS 2004b, 1).

13 Temporary wildlife closures take place throughout the Seashore, including within areas of ORV and
14 pedestrian use, to comply with protection measures afforded protected nesting sea turtles and shorebirds,
15 particularly the piping plover. These closures are implemented at crucial periods during the life of these
16 species. During these closures, the NPS routes ORV beach traffic around the temporary wildlife closure
17 when possible. Some of these temporary closures necessitate short-term rerouting of traffic around the
18 landward side of the closure area, to provide continued beach access for ORVs. Temporary wildlife
19 closures are closed to both ORV and pedestrian use.

20 **Bird Closures.** The open sand flats near the three inlets in the Seashore (Oregon, Hatteras, and Ocracoke)
21 are used by protected bird species and are also favorite fishing areas that visitors access in ORVs. Piping
22 plover and American oystercatcher breeding activity has been documented on and near the ocean beach in
23 all of these locations.

24 In 2005, a 0.1-mile “pass-through only” section of the ORV corridor was enforced at Bodie Island Spit, to
25 reduce disturbance to plovers foraging at ephemeral pools close to the original corridor boundary.
26 Pedestrians were not allowed in the pass-through zone. At Cape Point, a resource closure was created
27 around a complex of ephemeral pools to protect an oystercatcher brood (the closure extended to
28 approximately 50 feet from the edge of the pools). This closure was later used by a plover brood that
29 hatched to the west. Cape Point was closed to ORVs after the plover brood moved to the ephemeral pool
30 area. At South Ocracoke, the ORV corridor was narrowed in one place to protect a section of ocean
31 intertidal zone where a pair of adult plovers was observed foraging on several occasions. ORVs were

Why the use of 2005 situation to describe. It is a historical "Snapshot", but since 2005 doesn't involve any of the alternatives, seems a more recent year would be more pertinent. Don't feel strongly about this.

*Thayer's markup
2/2/09*

CUMULATIVE IMPACTS

The CEQ regulations to implement the National Environmental Policy Act require the assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts are considered for all alternatives, including the no-action alternative.

Cumulative impacts were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects and plans at Cape Hatteras and, if applicable, the surrounding region. Table 25 summarizes these actions that could affect the various resources at the seashore. These actions are described in more detail in the “Related Policies, Laws, Plans, and Actions” section of this document (see the “Purpose of and Need for Action” chapter).

The analysis of cumulative effects was accomplished using four steps:

- Step 1—Resources Affected. Fully identify resources affected by any of the alternatives.
- Step 2—Boundaries. Identify an appropriate spatial and temporal boundary for each resource.
- Step 3—Cumulative Action Scenario. Determine which actions to include with each resource.
- Step 4—Cumulative Impact Analysis. Summarize x + y statements, proposed action plus cumulative action, defining context, intensity, duration and timing; defining thresholds, methodology, etc.

TABLE 25: CUMULATIVE IMPACT SCENARIO

| Impact Topic | Study Area | Past Actions | Present Actions | Future Actions (life of plan/EIS) |
|--|---|---|--|---|
| Federally Listed Threatened & Endangered Species | Specific to species as identified in Recovery Plans | Oregon Inlet Dredging Commercial Fishing Storms and Other Weather Events County Land Use Development Plan for Dare and Hyde Counties Hurricane Recovery Continued Maintenance of NC-12 and Berms Berm Maintenance for Private Property in Front of Villages (NPS Authorized) Resource Management Plan Long-Range Interpretive Plan Previous ORV plans Special Use Permits/Activities Concession Permits/Operations | Same as past, plus Predator Management Plan (under development) Commercial Services Plan (under development) | Same as present, plus Development of Cape Lookout National Seashore long-term ORV Management Plan/EIS Revision of the General Management Plan Replacement of Bonner Bridge |

action? are we talking response actions?

general AND plans; will be case-by-case

TABLE 25: CUMULATIVE IMPACT SCENARIO

| Impact Topic | Study Area | Past Actions | Present Actions | Future Actions (life of plan/EIS) |
|--------------|-------------------|---|--|--|
| Soundscapes | Seashore Boundary | Oregon Inlet Dredging Storms and Other Weather Events Continued Maintenance of NC-12 and Berms Berm Maintenance for Private Property in Front of Villages (NPS Authorized) | Same as past, plus Increased vehicle traffic and village events | Same as Present, plus: Bonner Bridge Replacement <i>- potential military training operations (OK w/ Meghan Corfioli)</i> |

The past, present, and future actions outlined in Table 25 are described in the Related, Laws, Policies, Plans, and Actions section in the "Purpose of and Need for Action." Recreational use, past, present, and future, is considered as an integral part of the action alternatives and is, therefore, not addressed within the cumulative impact scenario.

2121-1
Thayer -
No comments.

**Overview of Off-Road Vehicle Management
Cape Hatteras National Seashore**

- 1937 **July.** Cape Hatteras becomes nation's first national seashore.
- 1940 **June.** Cape Hatteras is redesignated as a National Seashore Recreation Area. Enabling legislation allows hunting in certain areas of the park unit.
- 1954 North Carolina State Highway 12 (NC-12) was paved, providing a formal transportation route for local residents
- 1963 Completion of Bonner Bridge, connecting Bodie and Hatteras Islands
- 1972 **February.** Executive Order No. 11644, *Use of Off-Road Vehicles on the Public Lands.*
December. Report of Jackson S. Price, Special Assistant to the Director of the National Park Service on the use of over-sand vehicles at national seashores (Fire Island, Cape Cod, Assateague Island, Cape Hatteras.)
- 1973 **March.** Cape Hatteras NS Superintendent Barbee transmits draft regulations to Southeast Regional Office.
- 1977 **May.** Executive Order No. 11989, *Off-Road Vehicles on Public Lands.*
In response to E.O. 11989, Cape Hatteras initiates the development of an ORV management plan
- 1978 **January.** CAHA issues draft of *A Proposed New Plan for Management of Off-Road Recreational Vehicle Use in Cape Hatteras National Seashore.*
North Carolina Beach Buggy Association issues their initial analysis of a proposed plan (released January 5, 1978) for management of off-road vehicles at CAHA.
February. Outer Banks Preservation Association issues *Proposed Alternate Plan for Management of Off-Road Recreational Vehicles in the Cape Hatteras National Seashore.*
May. USFWS releases *Public and Wildlife Use on Beaches of Pea Island National Wildlife Refuge.*
November. CAHA issues draft of *Interim Management Plan: Off-Road Vehicle Use, Cape Hatteras National Seashore.*
- 1979 **August.** *Cape Hatteras National Seashore: Environmental Analysis of Off-Road Vehicle Use with Alternatives* by Tony Barnes, Landscape Architect.
- 1980 **October.** North District Ranger prepares *ORV Plan: North District, Cape Hatteras National Seashore*
- 1981 **July.** *Environmental Assessment* (for General Management Plan), Cape Hatteras National Seashore. Page 72-74, Offroad Vehicle Use. "There was general public support for the [1978] interim plan ; therefore, park management has determined the plan will be adopted. Those portions of the plan that can be implemented under existing regulations are being initiated..."
- 1984 **January.** *General Management Plan*, Cape Hatteras National Seashore. Page iii states that "The plan [GMP] proposes . . . controlling offroad vehicles." However, the GMP does not specifically address the issue. For example, on page 21, it states: "Selected beaches will continue to be open for ORV recreational driving and in conjunction with surf fishing in accordance with the existing use restrictions."
May. U.S. District Court (Massachusetts) issues summary of rulings in *Conservation Law Foundation vs. William Clark* (Civil Action No. 81-1004-N. [Question for court was whether or not ORV use is generally an appropriate recreational activity without regard to history of such use or economic considerations.]
- 1985 **December.** Fish and Wildlife published final rule listing the piping plover as endangered in the Great Lakes watershed and threatened along the Atlantic Coast and in the Great Plains region.
- 1986 **September.** Southeast Regional Off-Road Vehicle Task Force issues report following meeting in Charleston, July 8-9, 1986.
- 1988 **June.** U.S. District Court (Massachusetts) issues Memorandum and Order in *Conservation Law Foundation vs. Donald Hodel* (Civil Action No. 81-1004-N. [Judgement for the defendants.]
- 1990 **January.** CAHA sends *Proposed Special Regulations – Oversand Vehicle Use, Cape Hatteras National Seashore* to the Southeast Regional Office for processing.

Mike's
comments
2/1/09
mm

1 **PIPING PLOVER**

2 The piping plover is a small (6 to 7 inches long, weighing 1.5 to 2.2 ounces), highly camouflaged, sand-
3 colored shorebird endemic to North America. Two genetic races and three geographic subpopulations are
4 recognized: (1) the Atlantic Coast (from the Maritime Provinces of Canada to the Outer Banks of North
5 Carolina), (2) the Great Lakes (along Lake Superior and Lake Michigan), and (3) the Great Plains (from
6 southern, prairie Canada to Iowa). Wintering populations are found on the Atlantic Coast, from North
7 Carolina to Florida, and on the Gulf Coast, from Florida to Mexico, and in the Caribbean, with the
8 greatest number of wintering birds found in Texas. Fewer than 3,000 breeding pairs of piping plovers
9 were detected in the U.S. and Canada in 2001. Habitat loss caused by human development and recreation,
10 and low reproductive rates caused by disturbance and predation, are considered to be the primary causes
11 of the decline (Elliot-Smith and Haig 2004, 1).

12 Piping plovers were common along the Atlantic Coast during much of the 19th century, but nearly
13 disappeared due to excessive hunting for decorative feathers. Following passage of the Migratory Bird
14 Treaty Act in 1918, plover numbers recovered to a 20th century peak which occurred during the 1940s.
15 Increased development and beach recreation after World War II caused the population decline that led to
16 federal protection for the plover (USFWS 2007b, 1). The Atlantic Coast population was federally listed in
17 1986 as threatened (Federal Register 1985). At the time of listing, there were approximately 790 Atlantic
18 Coast pairs, and the species was in decline. Therefore, a recovery target of 2,000 pairs was established in
19 the 1996 Revised Recovery Plan for the Atlantic Coast population (USFWS 1996a, *iii*). Disturbance and
20 predation were intensively managed after the listing, and the Atlantic Coast population rose to 1,890 pairs
21 by 2007 (USFWS 2007, 1), but was still short of the recovery goal of 2,000 pairs (USFWS 1996a, *iii*;
22 USFWS, Hecht, pers. comm. 2008).

23 Piping plover population density is less south of New Jersey than in the north and was estimated at 333
24 pairs in 2007, short of the regional goal for the southern Atlantic Coast of 400 pairs (table 2). North
25 Carolina experienced more than a 50% decline in breeding pairs from 1989 (55 pairs) to 2003 (24 pairs)
26 (USFWS 2004b, 4) for reasons discussed in the "Risk Factors" section later in this document; however,
27 the number of breeding pairs has since climbed to a 22 year high of an estimated 64 pairs in 2008
28 (NCWRC 2008, 2).

**TABLE 2. SOUTHERN REGION (INCLUDING NORTH CAROLINA) PIPING PLOVER
POPULATION TRENDS, NUMBER OF BREEDING PAIRS**

| | Delaware | Maryland | Virginia | North Carolina | South Carolina | Southern Region |
|------|----------|----------|----------|-------------------|-------------------|--------------------|
| 1986 | 8 | 17 | 100 | 30 ^b | 3 | 158 |

**TABLE 2. SOUTHERN REGION (INCLUDING NORTH CAROLINA) PIPING PLOVER
POPULATION TRENDS, NUMBER OF BREEDING PAIRS**

| | Delaware | Maryland | Virginia | North Carolina | South Carolina | Southern Region |
|-------------------|----------|----------|----------|-------------------|-------------------|--------------------|
| 1987 | 7 | 23 | 100 | 30 ^b | — | 160 |
| 1988 | 3 | 25 | 103 | 40 ^b | — | 171 |
| 1989 | 3 | 20 | 121 | 55 | — | 199 |
| 1990 | 6 | 14 | 125 | 55 | — | 200 |
| 1991 | 5 | 17 | 131 | 40 | — | 193 |
| 1992 | 2 | 24 | 97 | 49 | — | 172 |
| 1993 | 2 | 19 | 106 | 53 | — | 180 |
| 1994 | 4 | 32 | 96 | 54 | — | 186 |
| 1995 | 5 | 44 | 118 | 50 | — | 217 |
| 1996 | 6 | 61 | 87 | 35 | — | 189 |
| 1997 | 4 | 60 | 88 | 52 | — | 204 |
| 1998 | 6 | 56 | 95 | 46 | — | 203 |
| 1999 | 4 | 58 | 89 | 31 | — | 182 |
| 2000 | 3 | 60 | 96 | 24 | — | 183 |
| 2001 | 6 | 60 | 119 | 23 | — | 208 |
| 2002 | 6 | 60 | 120 | 23 | — | 209 |
| 2003 | 6 | 59 | 114 | 24 | — | 203 |
| 2004 ^a | 7 | 66 | 152 | 20 | — | 245 |
| 2005 ^c | 8 | 63 | 193 | 37 | — | 301 |
| 2006 ^d | 9 | 64 | 202 | 46 | — | 321 |
| 2007 ^e | 9 | 64 | 199 | 61 ^f | — | 333 |

^aSource: USFWS 2004, figures are preliminary estimates

^bThe recovery team believes that the apparent 1986–1989 increase in the North Carolina population is because of an intensified survey effort.

^cUSFWS 2005. Preliminary 2005 Atlantic Coast Piping Plover Abundance and Productivity Estimates

^dUSFWS 2006a. 2006 Atlantic Coast Piping Plover Abundance and Productivity Estimates

^eUSFWS 2007. 2007 Atlantic Coast Piping Plover Abundance and Productivity Estimates

^f For 2008, the end-of-season best estimate is 64 pairs. This represents a 5% increase from the 2007 best estimate of 61 pairs and is the highest number recorded along North Carolina in the years that complete surveys have been conducted (1989–2008).

Source of 1986–2001 data is USFWS 2002

Source of 2002–2003 data is USFWS 2004b

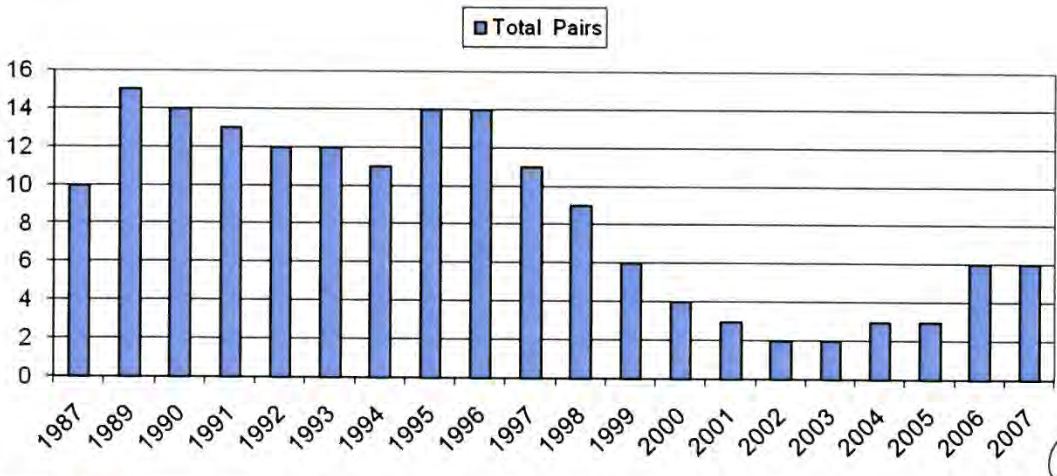
— = No data available.

1 Piping Plover in North Carolina

- 2 North Carolina is presently the only state on the Atlantic Coast that hosts piping plovers during all phases
- 3 of the annual cycle (Cohen 2005a, 6), including the establishment and holding of territories, courtship and

1 copulation, nest scraping and nest building, egg laying and incubation, chick rearing and fledging and ~~on~~
 2 migration and during the winter. Band sightings indicate that plovers from all three North American
 3 breeding populations depend on Cape Hatteras during migration and/or the winter. Plovers from the
 4 endangered Great Lakes population have been observed in fall and spring migration and ^{during} the wintering
 5 period (Cohen 2005a, 6). Early nesting records indicate that plovers were nesting at Pea Island in 1901
 6 and 1902 (Golder 1986, 51). The first published account of breeding piping plovers in North Carolina is
 7 from 1960, when a young bird was photographed in early June on Ocracoke Island (Golder 1985, 69).

8 At the Seashore, four nests and one brood were observed in 1984, and five chicks were confirmed to have
 9 fledged that year. All four nests were located adjacent to least tern colonies on wide, open sandy flats
 10 (Golder 1985, 70). Nine pairs were counted in 1985 (Golder 1986, 52), and 10 pairs in the summer of
 11 1987 (Cooper 1990, 2). The piping plover population reached a high of 15 pairs at the Seashore in 1989,
 12 and subsequently varied between 11 and 14 pairs through 1996, after which a sharp decline began (See
 13 figure xx). The population at the Seashore reached a low of 2 breeding pairs in 2002 and 2003, with only
 14 three breeding pairs reported in 2004 (NPS 2007a, 3), and two in 2005 (Cohen 2005a, 1). The population
 15 increased to six pairs in 2006 and 2007 (NPS 2007a, 3) and to an estimated 11 pairs by 2008 (NCWRC
 16 2008, 2).



Add
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 (11 Pairs)

17
 18 **FIGURE XX. NUMBER OF PIPING PLOVER BREEDING PAIRS, CAPE HATTERAS NATIONAL SEASHORE, 1987-2007**
 19

20 North Carolina Wildlife Resources Commission staff conducted a 2008 piping plover breeding census
 21 along the coast of North Carolina. The census included all suitable habitat on ocean and inlet beaches
 22 with the exception of Browns Island, which lies within a military live-fire training range. The census
 23 estimated a total of 64 pairs and five individuals, which is a 5% increase from the 2007 estimate of 61

1 pairs and is the highest number recorded in North Carolina in the years that complete surveys have been
2 conducted (1989–2008). Statewide, the distribution of piping plovers was similar to previous years, with
3 the majority of nesting pairs found at Cape Lookout National Seashore (NCWRC 2008, 1).

4 **Habitat Description**

5 On the Atlantic Coast, piping plovers nest in sand, gravel, or cobble substrates in backshore, dune,
6 interdune blowout, overwash fan, and barrier flat zones of open or sparsely-vegetated beaches. Nest sites
7 may have little or no slope (Cairns 1982, 539; Burger 1987, 813) although nesting does occur on lower
8 elevation dunes (Cairns 1982, 539). On wide beaches, piping plovers nest in the open to maintain a wide
9 field of view, but on narrower beaches eggs can be laid in clumps of vegetation (Cairns 1982, 539).

10 Where beaches are wide, piping plovers tend to nest far from the tide line to reduce risk of nest overwash,
11 but this can place nests closer to vegetated dunes where risk of predation is higher (Burger 1987, 817). In
12 1989, piping plovers were observed laying 50% of their nest attempts on the ocean beach, 37% on the
13 dune toe, and 5% (1 nest) in an overwash (██████████). Piping plovers have also been observed
14 nesting within least tern colonies, which could provide an added defense against predators due to
15 antipredator behavior of least terns (Burger 1987, 817). (sidebar: photo of nest site, plover incubating)

16 All piping plover breeding sites at the Seashore were designated as critical habitat for wintering birds, as
17 defined by the Endangered Species Act (ESA) (Federal Register 2001) until 2004, when a court decision
18 vacated the designation for Oregon Inlet, Cape Point, Hatteras Inlet, and Ocracoke Island (*Cape Hatteras*
19 *National Seashore Access Preservation Alliance versus U.S. Dept. of the Interior*, 344 F. Supp. 2d 108
20 [D.D.C. 2004]). A rule to revise designated critical habitat for the wintering population of the piping
21 plover in North Carolina was proposed in 2006 (71 FR 33703). That proposed rule described four coastal
22 areas (named Units NC-1, NC-2, NC-4, and NC-5), totaling approximately 739.4 hectares (ha) (1,827.2
23 acres (ac)) entirely within the Seashore, as critical habitat for the wintering population of the piping
24 plover. The USFWS also proposed to add 87 ha (215 ac) of critical habitat to two previously proposed
25 units. As a result, the proposed revised critical habitat designation for the species now includes four
26 revised critical habitat units totaling approximately 827 ha (2,043 ac). The final rule for the revised
27 critical habitat designation became effective on November 20, 2008 (Federal Register 2008).

28 In the winter and on migration, piping plovers tend to be found in areas with wide beaches and inlet
29 habitats, foraging in moist, substrate habitat that includes both low- and high-wave energy intertidal
30 zones, mud flats, moist sand flats, ephemeral pools, shores, and brackish ponds (Cohen 2005a, 9; Elliot-
31 Smith and Haig 2004, 1; Nicholls and Baldassarre 1990, 581; Wilkinson and Spinks 1994, 36). During
32 winter distribution surveys on the Atlantic Coast from 1986 to 1987, piping plovers were almost always

1 found associated with other species of shorebirds and other piping plovers (Nicholls and Baldassarre,
2 1990, 585)([sidebar: photo of foraging habitat](#))

3 **Diet**

4 Piping plovers feed primarily on freshwater, marine, terrestrial, and benthic invertebrates (Elliot-Smith
5 and Haig 2004, 1). Adults forage both day and night (Staine and Burger 1994, 579), but young chicks are
6 brooded during the night, and therefore, feed by day (Wolcott and Wolcott 1999, 323). During territory
7 establishment, foraging adults exhibit a preference for a moist substrate habitat that particularly includes
8 mud flats, sand flats, ephemeral pools, and shores of brackish ponds and excludes the high-wave energy
9 intertidal zone (Cohen 2005a, 9). Broods forage primarily on damp sand flats or moist substrate habitat ,
10 where their prey abundance is much higher than in other habitats ([Kuklinski et al. 1996, 12](#)). ([sidebar:](#)
11 [brooding](#))

12 Broods spend more time foraging in the wrack, sparse vegetation, wet-sand flat, and overwash areas than
13 expected based on the percent availability of those habitats ([Kuklinski et al. 1996, 12](#)). Chicks with access
14 to moist substrate habitat survived better than chicks without such access in Virginia (LoeGERing and
15 Fraser 1995, 646), Rhode Island (Goldin and Regosin 1998, 228), and in some years, in New York (Elias
16 et al. 2000, 346). Burger (1994, 695) found that when broods had access to a diversity of foraging habitat
17 zones, the impact of human disturbance was reduced because chicks had opportunities to escape
18 disturbances and still forage.

19 **Breeding Biology**

20 On the Atlantic Coast, breeding territory establishment and courtship generally begin in late March, the
21 first nests are initiated in late April, and the brood-rearing period extends from late May to mid-August
22 (Cohen 2005b, 136). On beaches with more birds in the northern end of the Atlantic Coast breeding
23 range, most pairs establish within a day or two of the birds' arrival in early spring, whereas pairs on sites
24 with fewer birds can take several days or weeks longer to become established (Elliot-Smith and Haig
25 2004, 1).

26 Piping plovers are primarily monogamous during the breeding season but often change mates between
27 seasons. The nest is built by the male and consists of a shallow scrape in sandy substrate that may or may
28 not be lined with pebbles and shell fragments. Four is the normal clutch size (USFWS 2007b, 1), and one
29 egg is laid every other day until the clutch is complete. Replacement of lost or destroyed eggs has not
30 been reported. If one or more eggs are lost, the pair continues to incubate the remaining eggs. Incubation

1 is shared by males and females and typically commences the day of clutch completion, but sometimes
2 occurs when the next-to-last egg is laid (Elliott-Smith and Haig 2004, 1).

3 The length of incubation ranges from 25 to 29 days, and a pair will re-nest multiple times if successive
4 clutches are destroyed, but re-nesting after the chicks hatch is rare (Elliott-Smith and Haig 2004, 1).

5 Chicks leave the nest scrape within a few hours of hatching and never return except when a nest hatches
6 at night (Wolcott and Wolcott 1999, 321). Chicks are vulnerable soon after hatching and survival rates are
7 lower if the brood is forced to move. Members of a breeding pair share brood-rearing duties, though some
8 females desert broods within 5 to 17 days (Elliott-Smith and Haig 2004, 1). Although chicks follow adults
9 to a foraging habitat, chicks forage for themselves. Fledging time ranges from 21 to 35 days (Cohen
10 2005a, 5). Adults and young depart the breeding grounds from mid-July to early September.

11 **Breeding Chronology and Performance at Cape Hatteras National Seashore**

12 Locally breeding piping plovers arrive at the Seashore in mid-March, begin courting and pairing in April,
13 and begin to scrape and build nests in the third week of April. Bodie Island Spit, Cape Point, South
14 Beach, Hatteras Inlet Spit, and Ocracoke Inlet Spit (South Point) all contain potential nesting habitat.

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15 Nesting has occurred in all of these areas in the last 10 years. Although there hasn't been a breeding pair
16 on the north end of Ocracoke Island since 1996, resource management staff also monitor this area for
17 potential plover activity. Seashore personnel generally begin monitoring for piping plover arrival and pre-
18 nesting behavior in late March and early April. Monitoring and surveys of these sites are conducted a
19 minimum of three times per week. Once a nest is located, nests are briefly approached once a week to
20 inspect the enclosure, count eggs and search for predator tracks. Morning and evening observations begin
21 when nests were expected to hatch. Monitors would observe from a distance for evidence of hatching, or
22 chicks. All known nests were protected by predator exclosures, which have been in use at the Seashore
23 since 1994. After hatching, the broods are monitored from dawn to dusk until the chicks fledged or are
24 lost. Monitoring staff document brood status, behavior, individual bird and/or brood movements, human
25 disturbance, predator interactions, or other significant environmental events.

26 Table 3 shows the number of breeding pairs of piping plovers at the six primary nesting sites from 1987
27 to 2007. Table 4 provides data on piping plover hatching and fledging success at the Seashore from 1992
28 through 2007. While site-specific data for 2008 are not available, eleven nesting pairs were identified
29 within the Seashore. This marks an 83% increase from the six pairs identified in 2007 (NCWRC 2008, 1).

}
}

use 2008 data

30

TABLE 3. NUMBER OF PIPING PLOVER BREEDING PAIRS BY SITE, CAPE HATTERAS NATIONAL SEASHORE, 1987–2007

| Year | Total Pairs | Bodie Island Spit | Cape Point | South Beach | Hatteras Island Spit | Ocracoke (North) | Ocracoke (South) |
|------------------------|-------------|-------------------|------------|-------------|----------------------|------------------|------------------|
| 1987 | 10 | 0 | 4 | 0 | 4 | 1 | 1 |
| 1989 | 15 | — | — | — | — | — | — |
| 1990 | 14 | 0 | 8 | 0 | 4 | 2 | 0 |
| 1991 | 13 | 0 | 5 | 0 | 3 | 5 | 0 |
| 1992 | 12 | 0 | 4 | 0 | 4 | 4 | 0 |
| 1993 | 12 | 0 | 5 | 1 | 3 | 3 | 0 |
| 1994 | 11 | 0 | 5 | 1 | 3 | 2 | 0 |
| 1995 | 14 | 0 | 6 | 1 | 4 | 2 | 1 |
| 1996 | 14 | 1 | 5 | 1 | 5 | 1 | 1 |
| 1997 | 11 | 1 | 4 | 1 | 3 | 0 | 2 |
| 1998 | 9 | 0 | 4 | 1 | 3 | 0 | 1 |
| 1999 | 6 | 0 | 3 | 1 | 1 | 0 | 1 |
| 2000 | 4 | 0 | 2 | 0 | 2 | 0 | 0 |
| 2001 | 3 | 1 | 1 | 0 | 1 | 0 | 0 |
| 2002 | 2 | 1 | 0 | 0 | 1 | 0 | 0 |
| 2003 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| 2004 | 3 | 1 | 0 | 0 | 1 | 0 | 1 |
| 2005 | 3 | 0 | 0 | 1 | 1 | 0 | 1 |
| 2006 | 6 | 1 | 2 | 1 | 1 | 0 | 1 |
| 2007 | 6 | 1 | 4 | 0 | 0 | 0 | 1 |
| Total (% of total*) | 170 (100) | 7 (4.5) | 62 (40.0) | 9 (5.8) | 45 (29.0) | 20 (12.9) | 12 (7.7) |

Source: 2007 Annual Piping Plover Monitoring Report (NPS 2007a,3)

* - Total pairs was 170, but locations were not available in 1989. Therefore, percentages are based on the 155 nests that were recorded at one of the six specific nesting areas.

— = No data available

use 2008 table

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TABLE 4. HATCHING AND FLEDGING SUCCESS AT CAPE HATTERAS NATIONAL SEASHORE, 1992–2007

| Year | # Nests | # Eggs | Nests Hatched | | Eggs Hatched | | Chicks Fledged | | Fledge Rate (Chicks/ pair) |
|------|---------|-----------------|---------------|-----|-----------------|-----|----------------|-----|----------------------------------|
| | | | | | | | | | |
| 1992 | 14 | 49 ^b | 8 | 57% | 17 | 35% | 8 | 47% | 0.67 |
| 1993 | 21 | 69 | 9 | 43% | 27 | 39% | 8 | 30% | 0.67 |
| 1994 | 18 | 65 ^c | 10 | 56% | 32 ^d | 49% | 9 | 30% | 0.82 |
| 1995 | 19 | 63 | 13 | 68% | 30 | 48% | 7 | 23% | 0.50 |

TABLE 4. HATCHING AND FLEDGING SUCCESS AT CAPE HATTERAS NATIONAL SEASHORE, 1992–2007

| Year | # Nests | # eggs | Nests Hatched | | Eggs Hatched | | Chicks Fledged | | Fledge Rate |
|------|---------|-----------------|---------------|------|----------------|------|----------------|-----|-------------|
| 1996 | 16 | 56 ^e | 10 | 63% | 30 | 53% | 3 | 10% | 0.21 |
| 1997 | 16 | 47 ^e | 10 | 63% | 32 | 68% | 3 | 9% | 0.27 |
| 1998 | 8 | 31 | 6 | 75% | 20 | 65% | 12 | 60% | 1.33 |
| 1999 | 6 | 23 | 3 | 50% | 11 | 48% | 7 | 64% | 1.20 |
| 2000 | 6 | 23 | 3 | 50% | 10 | 44% | 3 | 30% | 0.75 |
| 2001 | 3 | 10 | 1 | 33% | 3 | 30% | 2 | 67% | 0.67 |
| 2002 | 3 | 8 | 1 | 33% | 1 | 13% | 0 | 0% | 0.00 |
| 2003 | 2 | 5 ^e | 2 | 100% | 4 ^e | 100% | 1 | 20% | 0.50 |
| 2004 | 2 | 6 | 1 | 50% | 4 | 66% | 0 | 0% | 0.00 |
| 2005 | 2 | 8 | 2 | 100% | 8 | 100% | 6 | 75% | 2.00 |
| 2006 | 4 | 15 | 3 | 75% | 9 | 60% | 3 | 33% | 0.50 |
| 2007 | 11 | 29 | 6 | 55% | 17 | 59% | 4 | 23% | 0.67 |

Source: 2007 Annual Piping Plover Monitoring Report (NPS 2007a,5, 6)

a – of all known eggs

b - assumes 3 eggs from a brood whose nest was not found (see 1992 PIPL report)

c – assumes 2 eggs from a brood whose nest was not found (see 1992 PIPL report)

d – includes those presumed hatched (see 1994 PIPL report)

e – assumes 1 egg from a brood whose nest was not found (see 2003 PIPL report)

1

2 Since 1989, reproductive rates at the Seashore have ranged from 0.0 to 2.0 chicks per pair (NPS 2007a,
3 4), with an average rate over the 16 years from 1992 to 2007 of 0.67 chicks per breeding pair (NPS
4 2007a, 6), the highest in the state (NPS 2007a, 4). During 2008, a total of 11 pairs fledged seven chicks (a
5 rate of 0.64 chicks per pair) (NCWRC 2008, 1). However, a rate of 1.2 fledged chicks per breeding pair
6 annually would be needed to sustain the population (USFWS 1996a, 24), and the recovery goal set by the
7 USFWS is 1.5 fledglings per breeding pair. Hence, the actual fledged chicks per pair has averaged less
8 than half the recovery goal since 1989.

9 The decline in the local breeding population (table 3) from 1995 to 2003 is likely a reflection of the low
10 reproductive rate and resultant lack of recruitment (Lyons 2001; Lyons 2002a; ; Lyons 2004, 2).

11 However, the increase in the number of breeding pairs since 2003 is encouraging.

12 Hatching and Fledging Success at Primary Nesting Sites

13 The following tables provide a summary of hatching and fledging success at each of the individual
14 primary breeding sites from the early to mid 1990s through 2007. Average fledge rates across the six

1 breeding sites ranged from 0.14 at Bodie Island Spit to 1.00 at South Beach and each site has a fledge rate
 2 below the 1.5 goal set by the 1996 revised recovery plan. However, there were eight instances of years
 3 when one or more sites did meet or exceed this goal, indicating that in spite of poor Seashore-wide
 4 recruitment, some primary nesting sites performed at or above this expectation in some years.

TABLE XX. HATCHING AND FLEDGING SUCCESS AT BODIE ISLAND SPIT, CAPE HATTERAS NATIONAL SEASHORE, 1996-2007 *2008*

| Year | # Nests | # Eggs | Nests Hatched | | Eggs Hatched | | Chicks Fledged | | Fledge Rate (Chicks/pair) |
|----------------------------|---------|--------|---------------|-------|--------------|-------|----------------|------|---------------------------|
| | | | # | % | # | % | # | % | |
| 1996 | 1 | 4 | 1 | 100.0 | 3 | 75.0 | 0 | 0.0 | 0.00 |
| 1997 | 2 | 6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 1998 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 1999 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2000 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2001 | 1 | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2002 | 1 | 3 | 1 | 100.0 | 1 | 33.3 | 0 | 0.0 | 0.00 |
| 2003 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2004 | 1 | 2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2005 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2006 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2007 | 1 | 3 | 1 | 100.0 | 3 | 100.0 | 1 | 33.3 | 1.00 |
| Average Fledge Rate = 0.14 | | | | | | | | | |

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TABLE XX. HATCHING AND FLEDGING SUCCESS AT CAPE POINT, CAPE HATTERAS NATIONAL SEASHORE, 1992-2007 *2008*

| Year | # Nests | # Eggs | Nests Hatched | | Eggs Hatched | | Chicks Fledged | | Fledge Rate (Chicks/pair) |
|------|---------|--------|---------------|------|---------------|------|----------------|------|---------------------------|
| | | | # | % | # | % | # | % | |
| 1992 | 5 | 19 | 4 | 80.0 | 11 | 57.9 | 4 | 36.4 | 1.00 |
| 1993 | 6 | 23 | 5 | 83.3 | 15 | 65.2 | 3 | 20.0 | 0.60 |
| 1994 | 6 | 24 | 5 | 83.3 | 16 | 66.7 | 5 | 31.3 | 1.00 |
| 1995 | 9 | 33 | 5 | 55.6 | 15 | 45.5 | 2 | 13.3 | 0.33 |
| 1996 | 5 | 16 | 3 | 60.0 | 7 | 43.8 | 3 | 42.9 | 0.60 |
| 1997 | 6 | 18 | 5 | 83.3 | 15 | 83.3 | 3 | 20.0 | 0.75 |
| 1998 | 5 | 19 | 3 | 60.0 | 10 | 52.6 | 6 | 60.0 | 1.50 |
| 1999 | 3 | 12 | 2 | 66.7 | 7 | 58.3 | 5 | 71.4 | 1.67 |



TABLE XX. HATCHING AND FLEDGING SUCCESS AT CAPE POINT, CAPE HATTERAS NATIONAL SEASHORE, 1992-2007

| Year | # Nests | # Eggs | Nests Hatched | | Eggs Hatched | | Chicks Fledged | | Fledge Rate |
|-----------------------------------|---------|--------|---------------|-------|--------------|------|----------------|------|-------------|
| | | | # | % | # | % | # | % | |
| 2000 | 3 | 11 | 2 | 66.7 | 6 | 54.5 | 2 | 33.3 | 1.00 |
| 2001 | 1 | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2002 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2003 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2004 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2005 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2006 | 2 | 7 | 2 | 100.0 | 6 | 85.7 | 3 | 50.0 | 1.50 |
| 2007 | 9 | 22 | 4 | 44.4 | 10 | 45.5 | 3 | 30.0 | 0.75 |
| Average Fledge Rate = 0.87 | | | | | | | | | |

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TABLE XX. HATCHING AND FLEDGING SUCCESS AT SOUTH BEACH, CAPE HATTERAS NATIONAL SEASHORE, 1992-2007

| Year | # Nests | # Eggs | Nests Hatched | | Eggs Hatched | | Chicks Fledged | | Fledge Rate (Chicks/pair) |
|-----------------------------------|---------|--------|---------------|-------|--------------|-------|----------------|-------|---------------------------|
| | | | # | % | # | % | # | % | |
| 1992 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 1993 | 2 | 7 | 1 | 50.0 | 4 | 57.1 | 0 | 0.0 | 0.00 |
| 1994 | 1 | 2 | 1 | 100.0 | 2 | 100.0 | 1 | 50.0 | 1.00 |
| 1995 | 1 | 3 | 1 | 100.0 | 1 | 33.3 | 1 | 100.0 | 1.00 |
| 1996 | 1 | 3 | 1 | 100.0 | 2 | 66.7 | 0 | 0.0 | 0.00 |
| 1997 | 2 | 8 | 2 | 100.0 | 7 | 87.5 | 0 | 0.0 | 0.00 |
| 1998 | 1 | 4 | 1 | 100.0 | 4 | 100.0 | 2 | 50.0 | 2.00 |
| 1999 | 1 | 4 | 1 | 100.0 | 4 | 100.0 | 2 | 50.0 | 2.00 |
| 2000 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2001 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2002 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2003 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2004 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2005 | 1 | 4 | 1 | 100.0 | 4 | 100.0 | 3 | 75.0 | 3.00 |
| 2006 | 1 | 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2007 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| Average Fledge Rate = 1.00 | | | | | | | | | |

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TABLE XX. HATCHING AND FLEDGING SUCCESS AT SOUTH BEACH, CAPE HATTERAS NATIONAL SEASHORE, 1992-2007

| | | |
|---------------|--------------|----------------|
| Nests Hatched | Eggs Hatched | Chicks Fledged |
|---------------|--------------|----------------|

TABLE XX. HATCHING AND FLEDGING SUCCESS AT HATTERAS ISLAND SPIT, CAPE HATTERAS NATIONAL SEASHORE, 1992-2007

| Year | # Nests | # Eggs | Nests Hatched | | Eggs Hatched | | Chicks Fledged | | Fledge Rate (Chicks/pair) |
|-----------------------------------|---------|--------|---------------|-------|--------------|-------|----------------|------|---------------------------|
| | | | # | % | # | % | # | % | |
| 1992 | 5 | 16 | 2 | 40.0 | 5 | 31.3 | 2 | 40.0 | 0.50 |
| 1993 | 4 | 16 | 2 | 50.0 | 7 | 43.8 | 4 | 57.1 | 1.33 |
| 1994 | 6 | 24 | 3 | 50.0 | 10 | 41.7 | 3 | 30.0 | 1.00 |
| 1995 | 6 | 17 | 5 | 83.3 | 11 | 64.7 | 3 | 27.3 | 0.75 |
| 1996 | 7 | 26 | 4 | 57.1 | 14 | 53.8 | 0 | 0.0 | 0.00 |
| 1997 | 4 | 8 | 1 | 25.0 | 4 | 50.0 | 0 | 0.0 | 0.00 |
| 1998 | 1 | 4 | 1 | 100.0 | 2 | 50.0 | 0 | 0.0 | 0.00 |
| 1999 | 1 | 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2000 | 3 | 12 | 1 | 33.3 | 4 | 33.3 | 1 | 25.0 | 0.50 |
| 2001 | 1 | 4 | 1 | 100.0 | 3 | 75.0 | 2 | 66.7 | 2.00 |
| 2002 | 2 | 5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2003 | 1 | 4 | 1 | 100.0 | 4 | 100.0 | 0 | 0.0 | 0.00 |
| 2004 | 1 | 4 | 1 | 100.0 | 4 | 100.0 | 0 | 0.0 | 0.00 |
| 2005 | 1 | 4 | 1 | 100.0 | 4 | 100.0 | 3 | 75.0 | 3.00 |
| 2006 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2007 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| Average Fledge Rate = 0.51 | | | | | | | | | |

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TABLE XX. HATCHING AND FLEDGING SUCCESS AT OCRACOKE (NORTH), CAPE HATTERAS NATIONAL SEASHORE, 1992-2007

| Year | # Nests | # Eggs | Nests Hatched | | Eggs Hatched | | Chicks Fledged | | Fledge Rate (Chicks/pair) |
|------|---------|--------|---------------|-------|--------------|------|----------------|-------|---------------------------|
| | | | # | % | # | % | # | % | |
| 1992 | 4 | 14 | 2 | 50.0 | 5 | 35.7 | 2 | 40.0 | 0.50 |
| 1993 | 9 | 23 | 1 | 11.1 | 1 | 4.3 | 1 | 100.0 | 0.33 |
| 1994 | 5 | 15 | 1 | 20.0 | 4 | 26.7 | 0 | 0.0 | 0.00 |
| 1995 | 2 | 6 | 2 | 100.0 | 3 | 50.0 | 1 | 33.3 | 0.50 |
| 1996 | 1 | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |

TABLE XX. HATCHING AND FLEDGING SUCCESS AT OCRACOKE (NORTH), CAPE HATTERAS NATIONAL SEASHORE, 1992-2007

| Year | # Nests | # Eggs | Nests Hatched | | Eggs Hatched | | Chicks Fledged | | Fledge Rate (Chicks/pair) |
|-----------------------------------|---------|--------|---------------|-----|--------------|-----|----------------|-----|---------------------------|
| | | | # | % | # | % | # | % | |
| 1997 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 1998 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 1999 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2000 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2001 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2002 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2003 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2004 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2005 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2006 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2007 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| Average Fledge Rate = 0.33 | | | | | | | | | |

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TABLE XX. HATCHING AND FLEDGING SUCCESS AT OCRACOKE (SOUTH), CAPE HATTERAS NATIONAL SEASHORE, 1995-2007

| Year | # Nests | # Eggs | Nests Hatched | | Eggs Hatched | | Chicks Fledged | | Fledge Rate (Chicks/pair) |
|-----------------------------------|---------|--------|---------------|-------|--------------|-------|----------------|-------|---------------------------|
| | | | # | % | # | % | # | % | |
| 1995 | 1 | 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 1996 | 1 | 4 | 1 | 100.0 | 4 | 100.0 | 0 | 0.0 | 0.00 |
| 1997 | 2 | 7 | 2 | 100.0 | 6 | 85.7 | 0 | 0.0 | 0.00 |
| 1998 | 1 | 4 | 1 | 100.0 | 4 | 100.0 | 4 | 100.0 | 4.00 |
| 1999 | 1 | 3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2000 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2001 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2002 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2003 | 1 | 1 | 1 | 100.0 | 1 | 100.0 | 1 | 100.0 | 1.00 |
| 2004 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2005 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.00 |
| 2006 | 1 | 4 | 1 | 100.0 | 3 | 75.0 | 0 | 0.0 | 0.00 |
| 2007 | 1 | 4 | 1 | 100.0 | 4 | 100.0 | 0 | 0.0 | 0.00 |
| Average Fledge Rate = 0.45 | | | | | | | | | |

1

2 **Nest Loss/Abandonment**

3 Nest loss and abandonment has been a significant impact on piping plover reproduction at the Seashore.
 4 In the 16 years from 1992 to 2007, 42% of nests (of 151 discovered) were lost or abandoned (table 5).
 5 Factors contributing to nest loss and abandonment include weather, predation, and human disturbance,
 6 which are discussed in detail under the “Risk Factors” section later on in this document.

**TABLE 5. PIPING PLOVER NEST LOST/ ABANDONMENT AT
 CAPE HATTERAS NATIONAL SEASHORE, 1992–2007**

| Year | # Nests | Nests Lost/Abandoned | |
|------|---------|----------------------|-----|
| | | # | % |
| 1992 | 14 | 6 | 43% |
| 1993 | 21 | 12 | 57% |
| 1994 | 18 | 8 | 44% |
| 1995 | 19 | 6 | 32% |
| 1996 | 16 | 6 | 38% |
| 1997 | 16 | 6 | 38% |
| 1998 | 8 | 2 | 25% |
| 1999 | 6 | 3 | 50% |
| 2000 | 6 | 3 | 50% |
| 2001 | 3 | 2 | 67% |
| 2002 | 3 | 2 | 67% |
| 2003 | 2 | 0 | 0% |
| 2004 | 2 | 1 | 50% |
| 2005 | 2 | 0 | 0% |
| 2006 | 4 | 1 | 25% |
| 2007 | 11 | 5 | 45% |

Source: 2007 Annual Piping Plover Monitoring Report (NPS 2007a, 5)

7 **Nonbreeding and Wintering**

8 In addition to supporting a local breeding population, the Seashore also hosts migrating and overwintering
 9 piping plovers from all three of the North American breeding populations (the threatened Atlantic Coast
 10 and Great Plains populations and the endangered Great Lakes population); however, the local breeding
 11 population departs in the winter (Dinsmore et al. 1998, 175; NPS 2006a, 9). The distribution and
 12 abundance of nonbreeding and wintering populations at the Seashore are less well-documented than the
 13 local breeding population. Documenting and protecting nonbreeding, wintering piping plovers and their

terminology? Migrating + Wintering are both Nonbreeding

- 1 habitats are priorities articulated in the recovery plans for all three North American breeding populations
 2 (USFWS 1988; USFWS 1996a, iii; USFWS 2003, iii).

TABLE 6. MONTHLY MEDIAN AND MAXIMUM NONBREEDING BIRDS SEEN DURING DAILY SURVEY DURING FALL, WINTER, AND SPRING, SELECTED SITES AT CAPE HATTERAS NATIONAL SEASHORE, 2000–2005

| | Month | Oregon Inlet | Cape Point/ South Beach | Hatteras Inlet | Ocracoke inlet | All Sites |
|---------|-------|--------------|----------------------------|----------------|----------------|-----------|
| Median | Jul | 0.49 | 0.18 | 0.45 | 2.21 | 5.7 |
| | Aug | 0.68 | 0.31 | 0.13 | 3.76 | 6.4 |
| | Sept | 0.66 | 0.07 | 0.38 | 4.22 | 5.7 |
| | Oct | 0.36 | 0.00 | 0.86 | 1.81 | 3.3 |
| | Nov | 0.82 | 0.00 | 0.07 | 1.00 | 4.2 |
| | Dec | 0.77 | 0.00 | 0.00 | 2.07 | 2.9 |
| | Jan | 0.25 | 0.00 | 0.00 | 1.00 | 1.2 |
| | Feb | 3.33 | 0.00 | 0.00 | 1.00 | 4.3 |
| | Mar | 1.25 | 0.00 | 0.00 | 0.75 | 2.8 |
| | Apr | 1.89 | 0.00 | 0.62 | 1.31 | 3.6 |
| Maximum | Jul | 32 | 5 | 21 | 56 | 56 |
| | Aug | 34 | 6 | 14 | 72 | 72 |
| | Sept | 16 | 5 | 4 | 37 | 37 |
| | Oct | 12 | 1 | 28 | 31 | 31 |
| | Nov | 15 | 0 | 8 | 12 | 15 |
| | Dec | 17 | 0 | 7 | 15 | 17 |
| | Jan | 18 | 0 | 1 | 11 | 18 |
| | Feb | 14 | 0 | 0 | 18 | 18 |
| | Mar | 12 | 3 | 4 | 8 | 12 |
| | Apr | 25 | 3 | 7 | 11 | 25 |

Source: Cohen 2005a, 56

NOTE: Not all sites were surveyed each day (typically, only one or two were surveyed), so the numbers in the table provide only a rough idea of the total size of the nonbreeding population (Cohen 2005a, 56).

- 3
- 4 Wintering piping plovers on the Atlantic Coast select wide beaches in the vicinity of inlets that are
 5 associated with a high-percent area of moist substrate habitat (Nicholls and Baldassarre 1990, 587;
 6 Wilkinson and Spinks 1994, 36). Because tide regimes and fall-and-winter storm patterns often cause
 7 piping plovers to move among habitat patches, a diversity of habitat patches may be important to over-
 8 wintering populations (Burger 1994, 698; Nicholls and Baldassarre 1990, 583).

1 From 2000 to 2005, the greatest number of nonbreeding piping plovers at the Seashore occurred during
 2 the fall migration, which begins in July and peaks between July and September (table 6). The fall
 3 migration counts were highest at South Ocracoke, followed by Oregon Inlet (Bodie Island Spit, Pea Island
 4 National Wildlife Refuge, and, formerly, Green Island, which is now largely unusable for plovers because
 5 of vegetation growth), then Hatteras Spit and Cape Point. Fall migration may last until November (Cohen
 6 2005a, 7).

7 The first banded winter residents appeared in August; however, other wintering birds may arrive in July.
 8 The nonbreeding population from December to January probably consists entirely of winter residents. The
 9 size of the resident wintering population at the Seashore is not precisely known, but it may be on the order
 10 of 20 to 35 birds (table 6) (Cohen 2005a, 7). In the winter of 2004 – 2005, the maximum numbers seen
 11 were about 50% of the recent norm; however, whether this observed difference was because of a
 12 difference in survey methodology is unknown. The highest counts of wintering residents were at Oregon
 13 and Ocracoke Inlets. Based on a sample of banded birds, winter residents can be present until April
 14 (Cohen 2005a, 7). Spring piping plover migrants first appear in February or early March, and their
 15 numbers peak in late March or April (table 6). Sites at Oregon Inlet have had the highest abundance of
 16 spring migrants, followed by ~~Ocracoke Inlet~~ ^{South Ocracoke}, with fewer at Hatteras Spit and Cape Point (Cohen 2005a,
 17 7).

18 Park staff documented piping plover use of the Seashore throughout 2006. Migratory birds appeared to
 19 peak in August and September with a high count of 93 birds at ~~Ocracoke Inlet Spit~~ ^{South Ocracoke} on August 10 (tables 6
 20 and 7). ~~Ocracoke Inlet Spit~~ ^{South Ocracoke} revealed the highest counts during fall migration. Three surveys at ~~Ocracoke~~ ^{South Point}
 21 ~~Inlet Spit~~ were coordinated with Seashore surveys on North Core Banks to investigate bird abundance
 22 around Ocracoke Inlet (table 7).
 23 ~~Ocracoke Inlet Spit~~ ^{South Ocracoke} ~~South Ocracoke~~ ~~South Ocracoke + Hatteras Spit~~

TABLE 7. COUNTS OF PIPING PLOVER ON BOTH SIDES OF OCRACOKE INLET DURING FALL MIGRATION, 2006

| Date | Ocracoke Inlet | North Core Banks | Total | Tide |
|-----------------|----------------|------------------|-------|------|
| August 10, 2006 | 93 | 7 | 100 | Mid |
| August 14, 2006 | 69 | 16 | 85 | Low |
| October 2, 2006 | 15 | 16 | 31 | Low |

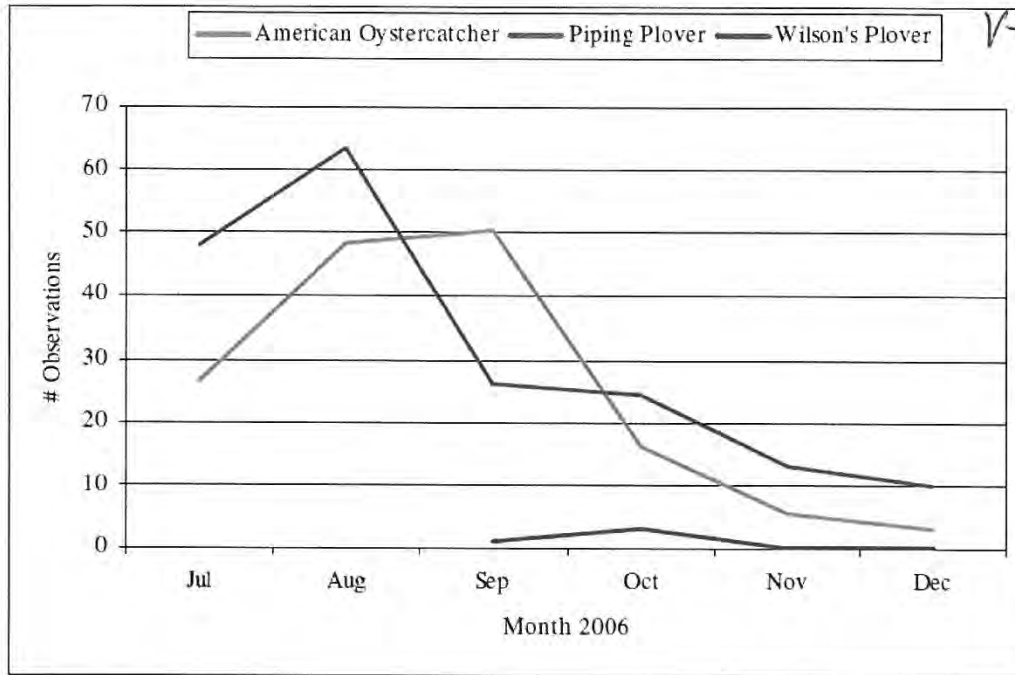
24 Source: 2006 NPS Piping Plover Monitoring Report (NPS 2006a, 9)

25
 26 In addition to the monitoring being conducted by park staff, the Southeast Coast Inventory and
 27 Monitoring Network (SECN) is conducting a more comprehensive study on wintering shorebirds. Pilot
 28 implementation of the SECN Migratory, Wintering, and Beached Shorebird Monitoring Protocol at the
 29 Seashore began in mid-July 2006. The primary objective was to determine areas of consistent use by

and red knots.

1 target or focal species, such as piping plover, American oystercatcher, ~~and~~ Wilson's plover. Results for
2 piping plover are shown in figure 1, and figure 2 provides information for all focal species.

3 The number of piping plover observed decreased from 50 during August–September to approximately 5
4 in late November (figure 1). Approximately 60% of the shorebird observations occurred in mud flats /
5 tidal flats during late summer (figure 2). From September to early December, most observations occurred
6 in the surf zone (NPS 2006a, 10).



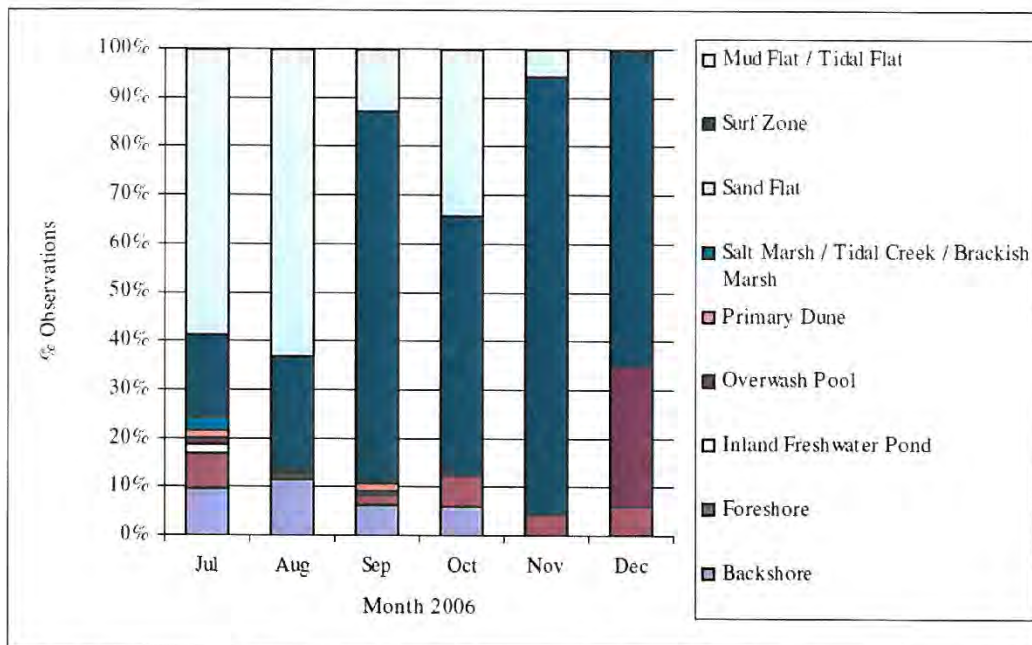
red knots?

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Source: 2006 NPS Piping Plover Monitoring Report (NPS 2006a, 10)

Red knots?

FIGURE 1. NUMBER OF PIPING PLOVER, WILSON'S PLOVER, AND AMERICAN OYSTERCATCHER OBSERVATIONS AT CAPE HATTERAS NATIONAL SEASHORE, JULY 23, 2006 – DECEMBER 6, 2006



Source: 2006 NPS Piping Plover Monitoring Report (NPS 2006a, 11)

FIGURE 2. PERCENTAGE OF FOCAL SHOREBIRDS (AMERICAN OYSTERCATCHER, PIPING PLOVER, WILSON'S PLOVER) OBSERVATIONS IN SELECT HABITATS AT CAPE HATTERAS NATIONAL SEASHORE, JULY 23, 2006 – DECEMBER 6, 2006

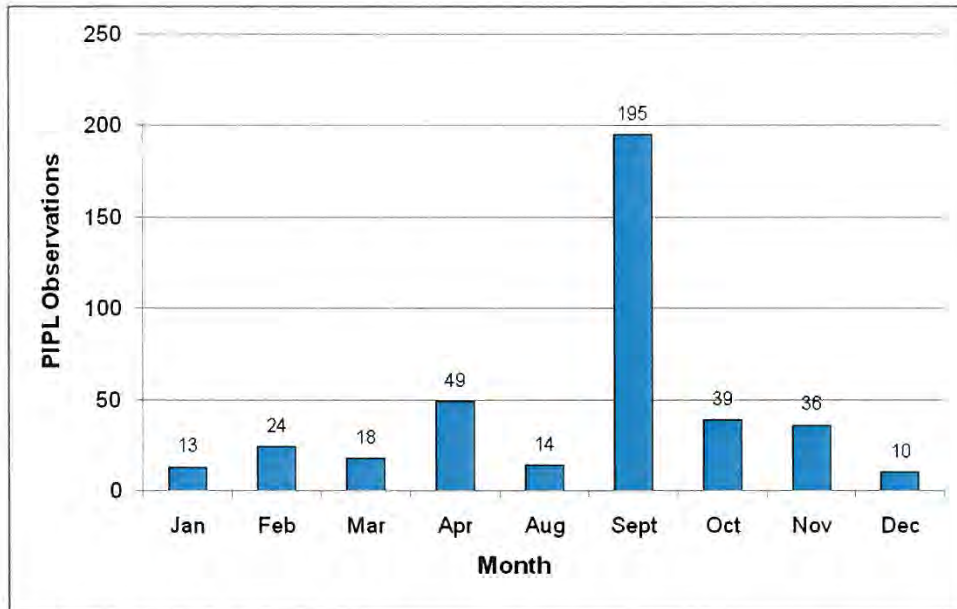
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No target shorebirds were detected as part of the beached shorebird component of this protocol. Monitoring and protocol refinement continued through the remainder of the 2006/2007 wintering period and spring 2007 migratory period.

In 2007 and 2008, the Seashore continued to consult with the USFWS regarding changes to the winter monitoring protocol. Because of the continuing consultation and changes to the protocol during the 2007 monitoring season, the methodology used to survey and document wintering piping plover changed several times during the season, making analysis of these data difficult.

Park staff documented migratory piping plover use of the Seashore beginning at the end of the piping plover breeding season, and staff began regularly scheduled observations in August 2007. Migratory (nonbreeding) birds appeared to peak in September, with a total of 195 plovers observed (figure 3). At *South* Ocracoke ~~Inlet~~ in September, 104 birds were observed on September 28, 2007 (NPS 2007a, 10). Both Cape Point (no piping plover observed) and Hatteras Inlet (three piping plover observed) had little to no documented wintering activity during surveys. Bodie Island Spit also had a high of three observations in October with few to no observations in the other months. There was a consistent presence of piping

- 1 plovers on North Ocracoke, September through December, with a high of seven observations in October.
 2 South Ocracoke had the highest activity for the entire park, with more than 175 observations in
 3 September in the three surveys.

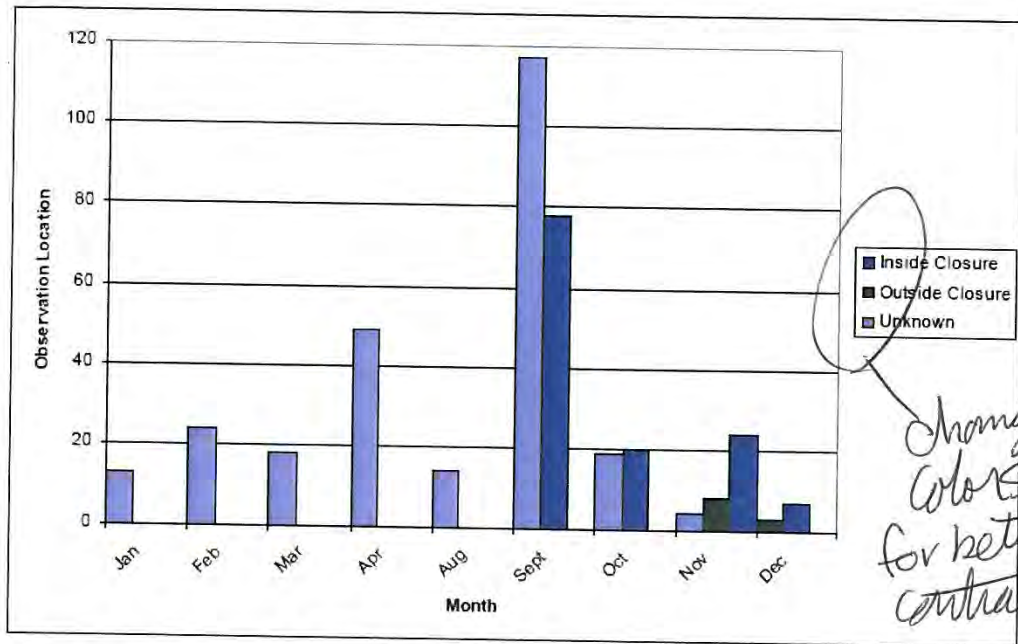


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 5 Source: 2007 NPS Piping Plover Monitoring Report (NPS 2007a, 10)
 6

7 **FIGURE 3. NONBREEDING PIPING PLOVER OBSERVATIONS, 2007**
 8

- 9 The database has recently been modified so that staff can plot the number of observations that occurred
 10 inside and outside a resource closure or inside an ORV-free zone. Due to differing monitoring efforts in
 11 2007, this inside versus outside distinction was not made in all surveys; therefore, some observations are
 12 recorded as “unknown.” (figure 4). The database used in the pilot study emphasized habitat types and did
 13 not document piping plover locations in reference to closures. It has now been revised to better suit the
 14 Seashore management needs, and data compiled in future years should be much easier to analyze.

CAHA# 2028b



Source: 2007 NPS Piping Plover Monitoring Report (NPS 2007a, 11)

FIGURE 4. PIPING PLOVER OBSERVATIONS INSIDE AND OUTSIDE OF RESOURCE CLOSURES

Risk Factors

Small populations such as the Atlantic Coast piping plover populations face a heightened risk of extinction compared to large populations because they are more vulnerable to the following: (1) random environmental variations, such as storms; (2) reduction in genetic variations that limit a species' ability to adapt to local conditions; (3) sudden, random drops in birth and death rates; and (4) an impaired ability to find suitable mates (Lande 1988, 241).

Given the vulnerability of the small piping plover populations in North America to random events, the persistence of the populations will depend increasingly on controlling sources of mortality to adults, eggs, and chicks throughout their range. Predators, human disturbance, and limited or blocked access to foraging habitat have been identified in past research as contributing to impaired reproductive success for those plovers that use the Seashore (Couti et al. 1990, 14; Kuklinski et al. 1996, 17). There may be evidence that piping plovers are finding it increasingly difficult to attract mates (known as the "Allee effect"), because surveying reports from 2001 to 2003 and 2005 indicate that unpaired birds displaying territorial behavior were observed in the prelaying period at several sites (Lyons 2001; Lyons 2002a;

1 Lyons 2003, 15). Thus, providing a disturbance-free environment early in the season may help piping
2 plovers to establish territories and attract mates (Cohen 2005b, 37).

3 Recent resource management reports state that most illegal entries into resource closures are not
4 witnessed but are documented based on vehicle, pedestrian, or dog tracks left behind (NPS 2007a, 9). For
5 example, between April 1 and August 31, 2006, resource staff recorded 255 pedestrian, 47 ORV, 22 dog,
6 and five horse violations of bird closures. During the period of April 1 to August 31, 2007, resource staff
7 recorded 249 pedestrian, 25 ORV, 17 dog, and 1 horse violation of bird closures. Enforcement levels have
8 not been adequate to keep pedestrians, pets, and ORVs out of restricted piping plover breeding areas
9 (NPS 2006d, 9; NPS 2007a, 9). Human pedestrians and joggers occasionally destroy nests or kill chicks,
10 either by intentional vandalism or by accident (Patterson et al. 1991, 528; Houghton 2005, 94). ORVs can
11 run over adults, nests, and chicks — some of which may run or crouch in vehicle tracks in response to
12 danger (Cohen 2006, 12). Piping plover chicks are difficult to see in this situation because of their
13 camouflaging (Melvin et al. 1994, 412). Human development and recreation can result in loss and/or
14 degradation of breeding habitats (██████████ ORV use has been demonstrated to degrade the wrack
15 line (Goldin 1993, 27), thereby adversely affecting an important foraging habitat. Breeding and
16 nonbreeding piping plovers are subject to disturbance (disruption of normal activities) by ORVs,
17 pedestrians, and unleashed pets.

18 Rates and sources of mortality and disturbance, and the responses of piping plovers to disturbance in the
19 nonbreeding season, have not been specifically assessed at the Seashore. However, it is known that piping
20 plover foraging and roosting habitats are used by pedestrians and ORVs outside of the breeding season
21 (Cohen 2006, 15). Therefore, the potential exists for piping plovers to be killed by being run over by
22 ORVs (Melvin et al. 1994, 409), as well as by domestic pets. Furthermore, disturbance to roosting and
23 foraging birds from ORVs, unleashed pets, and pedestrians may reduce foraging efficiency or alter habitat
24 use, thereby increasing the risk of nutritional or thermal stress (Zonick 2000, 136–137).

25 **Weather and Tides.** There were 11 named hurricanes on the Outer Banks between 1993 and 2007 (NPS
26 2006, 126; NPS 2006a, 8; NPS 2007a, 6). Hurricane Isabel, which hit the coast in September of 2003,
27 renewed piping plover habitat on portions of the Seashore and may have resulted in a reduction in
28 predator populations (NCWRC 2008, 1). In the years immediately following the storm, piping plover
29 numbers and productivity increased in response to the changes. However, there have been no significant
30 storms since that time, and much of the created habitat is now deteriorating due to revegetation (NCWRC
31 2008, 1). No significant weather events, such as hurricanes or tropical storms, occurred during the 2006
32 breeding season. However, smaller localized events may have affected nesting. Nest #4 on Ocracoke Inlet
33 Spit was partially buried by high wind and blowing sand. One egg was buried by sand, and the nest was a

1 deep cup rather than a scrape (June 29). One adult remained hunkered down on the nest during the strong
2 winds, and the buried egg was visible again during the nest check. A strong thunderstorm was noted on
3 the night before Nest #2 on South Beach was discovered lost; however, the loss is characterized as
4 “unknown” because it cannot be shown conclusively that weather was the cause. Five nests were either
5 lost to weather, predation, or abandonment during the 2007 breeding season. Nest #1, a two-egg nest on
6 Cape Point, was lost during a Nor’easter storm. It is unknown if the eggs were blown out of the nest
7 scrape in the 50–60 mph winds, buried under the sand, or taken by a predator. In 2008, poor weather early
8 in the season may have delayed nesting in some areas, and ill-timed heavy rains later in the season
9 resulted in some nest/chick loss.

10 Hurricanes and other ocean storms can lead to unusually high tides, and subsequent flooding can
11 overwash piping plover nests (Cohen 2005a, 10). Wave action and erosion caused the abandonment of a
12 nest in 2002 when waves undermined a protective dune resulting in the nest being flooded by ocean
13 overwash. The eggs were scattered from the nest and the adults did not return to them (Lyons 2003, 3).
14 Indeed, some piping plovers that nest too close to mean high tide may lose their nests on normal high
15 tides (Cohen 2006, 10). Storms can also result in widespread mortality of chicks (Houghton 2005, 43).

16 Besides these direct effects of storms on piping plover nests, flooding because of extraordinarily high
17 tides or storm surges may alter habitat enough to render it unsuitable for nesting. This may lead to the
18 abandonment of habitat within or between breeding seasons (Haig and Oring 1988, 636).

19 **Predation.** Predation, especially by mammalian predators, continues to be a major factor affecting the
20 reproductive success of the piping plover (Elliot-Smith and Haig 2004, 1). Predators of eggs, chicks,
21 and/or adults include mink, nutria (*Myocastor coypus*), muskrat (*Ondatra zibethicus*), otter (*Lutriane*
22 *spp.*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), striped skunk (*Mephitis mephitis*),
23 opossum (*Didelphus virginiana*), raccoon (*Procyon lotor*), domestic dogs (*Canis lupus familiaris*), feral
24 and domestic cats (*Felis catus*), crows, and gulls (NPS 2007a, 9), and birds-of-prey (Murphy et al. 2003a,
25 151). In 2001, red fox tracks were found around the predator exclosure at one abandoned nest site on
26 Bodie Island for several days prior to nest abandonment, and crows were sighted at, and on top of, this
27 exclosure on the day the nest was abandoned though it is not known if the crows caused the plovers to
28 abandon the nest (Lyons 2002a). The other 2001 nest site at Cape Point was abandoned the day after a fox
29 tried to dig around the predator exclosure. Fox tracks were frequently observed at the site before and after
30 the nest was found. (Lyons 2002a). In 2006, the presence or tracks of crows, grackles, gulls, ghost crabs,
31 opossum, mink, raccoon, red fox, grey fox, and domestic cats and dogs were documented within many
32 plover breeding territories. A fox den was discovered within the Bodie Island Spit bird closure in June
33 2006 (NPS 2006a, 8). During the 2007 season, eggs were missing from nest at Cape Point and staff

1 observed both raccoon and opossum tracks in the area of the next scrape (NPS 2007a, 6, 7). Predators or
2 high winds generated from a Nor'easter storm are thought to be responsible for missing eggs and eggs
3 observed eight feet from scrapes (NPS 2007a, 6). Predators in piping plover habitat can also lead to
4 piping plovers' abandoning territories within and between breeding seasons (Cohen 2005b, 40).

5 Ghost crabs have occasionally been implicated in the loss of nests (Watts and Bradshaw 1995, 767) and
6 chicks (Loegering et al. 1995, 768). Research on ghost crabs conducted in the lab and at a breeding site at
7 Assateague Island in Virginia suggests that crab predation is generally uncommon. However, this study
8 indicated that the presence of ghost crabs could have more of an indirect effect on plover survival. For
9 example, adult plovers may shepherd their broods away from the foreshore, where the best forage
10 normally exists, due to the abundance of ghost crabs at that location (Wolcott and Wolcott 1999, 327).
11 Poor forage was found to be a more likely contributor to chick mortality than predation by ghost crabs
12 (Wolcott and Wolcott 1999, 328). However, anecdotal records indicate that ghost crabs may be more of a
13 problem in North Carolina than at sites farther north (Cohen 2005a, 11).

14 **Human Activity.** The impact of predation has been postulated to be greater on beaches with high human
15 use because the presence of pets and trash (that may attract wild predators) is correlated with the presence
16 of humans (USFWS 1996a, 41). In some studies, beaches with high levels of human disturbance had
17 lower reproductive rates than less-disturbed beaches (Flemming et al. 1988, 321). At other sites, human
18 disturbance did not affect reproductive rate (Patterson et al. 1991, 528; ██████████) although
19 pedestrians, kites, and ORVs caused a decrease in brood-foraging behavior in Massachusetts (██████████
20 ██████████) and New Jersey (Burger 1994, 695).

21 Pedestrian and nonmotorized recreational activities can be a source of both direct mortality and
22 harassment of piping plovers. Potential pedestrians on the beach include those individuals driving and
23 subsequently parking on the beach, those originating from off-beach parking areas (hotels, motels,
24 commercial facilities, beachside parks, etc.), and those from beachfront and nearby residences. Vehicles'
25 impacts can extend to remote stretches of beach where human disturbance would be very slight if access
26 were limited to pedestrians only (USFWS 1996a, 12).

27 Documented violations of protected areas at the Seashore by pedestrians began to increase sharply after
28 2000, but this may have been because of increasing vigilance in the recording of such incidents (Lyons
29 2002a, 2003, 2004). Approximately 50 to 60 incidents of ORVs entering protected areas were recorded
30 each year from 2000 to 2002, and in 2003, the symbolic fence was vandalized by an ORV, and several
31 instances of ORVs within the protected area were observed (Lyons 2002a, 2003, 2004). A total of 105
32 incidents of ORVs entering posted bird closures were recorded in 2003. This number represents a
33 substantial increase compared to 52 recorded in 2001 and 63 in 2002 (NPS 2003c, 5). In 2004, 227

1 pedestrians and 65 vehicle tracks were reported within posted bird resource closures, including those for
 2 piping plovers. However, no plover nests were known to be disturbed, and no plover chicks were known
 3 to be lost (NPS 2004, 5, 6). In 2005, there were 135 pedestrian, 57 ORV, and 13 illegal dog entries
 4 recorded into posted bird closures (NPS 2005a, 9). In 2006 resource staff recorded 255 pedestrian, 47
 5 ORV, 22 dog, and five horse violations of bird closures (NPS 2006d, 9). In 2007, resource staff recorded
 6 249 pedestrian, 25 ORV, 17 dog, and one horse violations of bird closures (NPS 2007a, 9). Until July 23
 7 during the 2008 breeding season, resource staff recorded 70 pedestrian, two ORV, eight dog, and one
 8 bicycle violations of bird closures (NPS 2008g, 4). Most illegal entries are not witnessed but documented
 9 based on vehicle or pedestrian tracks left behind. (sidebar: symbolic fence definition)

*update
w/ 2008 data*

10 In New York, the response of incubating adults to the presence of humans near the nest was found to be
 11 highly variable, and average nest success was unrelated to the number of disturbance sources observed
 12 within 100 meters (328 feet) of nests (Houghton 2005, 94). However, piping plovers may be more
 13 sensitive to disturbance in the Atlantic Coast southern recovery unit, as evidenced by longer flush
 14 distances in response to disturbance sources at Assateague Island National Seashore (Loegering 1992,
 15 29). In Texas, piping plovers avoided foraging on sandflats close to areas of high human use (Drake et al.
 16 2001, 265). Zonick (2000, 156–161) found that the number of piping plovers was lower on disturbed
 17 bayside flats than on undisturbed flats, and piping plovers experienced lower foraging efficiency when
 18 disturbed. Other unpublished data support the assertion that winter habitat selection is negatively
 19 correlated with human activities and development (Houghton 2005, 4). (sidebar: flush distance)

20 Unleashed pets have the potential to flush piping plovers, and these flushing events may be more
 21 prolonged than those associated with pedestrians or pedestrians with dogs on leash. For example, a study
 22 conducted on Cape Cod, Massachusetts found that the average distance at which piping plovers were
 23 disturbed by pets was 150 feet, compared with 75 feet for pedestrians. Birds flushed by pets moved
 24 farther (average of 187 feet) than plovers reacting to pedestrians (average of 82 feet). Duration of
 25 observed disturbance behaviors stimulated by pets was significantly greater than that caused by
 26 pedestrians (USFWS 1996a, 72).

27 ORV use may also affect the beach through sand displacement and compaction, which may lead to
 28 steeper dune profiles (Anders and Leatherman 1987). This, in turn, may prove less suitable for piping
 29 plover nesting. Degradation of the wrack line by ORVs may negatively impact reproductive success
 30 because of loss of important habitat used for foraging and cover (Goldin 1993, 31).

31 Beach and dune renourishment projects can alter the profile of beaches, causing increased erosion and
 32 habitat loss (Leatherman 1985, 173). Important dune-creation projects have been carried out along most
 33 of the Seashore, beginning in the 1930s. These may be affecting the ability of the Seashore to support

1 piping plovers (NPS 2006e, 127). Furthermore, beach stabilization prevents normal storm processes, such
 2 as overwash fan formation, thereby leading to long-term loss of moist substrate habitat and to accelerated
 3 vegetative succession in potential nesting habitat (Dolan et al. 1973, 160). Construction of human
 4 structures on beaches eliminates breeding territories and may result in an increased level of human
 5 disturbance of, and predation on, remaining pairs (Houghton 2005, 4).

6 Research, surveying, and even protective management activities can sometimes expose piping plovers to
 7 a risk of disturbance at breeding sites (Mabee and Estelle 2000, 16). For example, adult birds may be
 8 more vulnerable to predation within exclosures (Murphy et al. 2003a, 150) depending on the local
 9 predator pool and the type of exclosure used. Adults may also abandon exclosed nests more frequently
 10 (Haig and Elliot-Smith 2004, 1, section 12).

11

12

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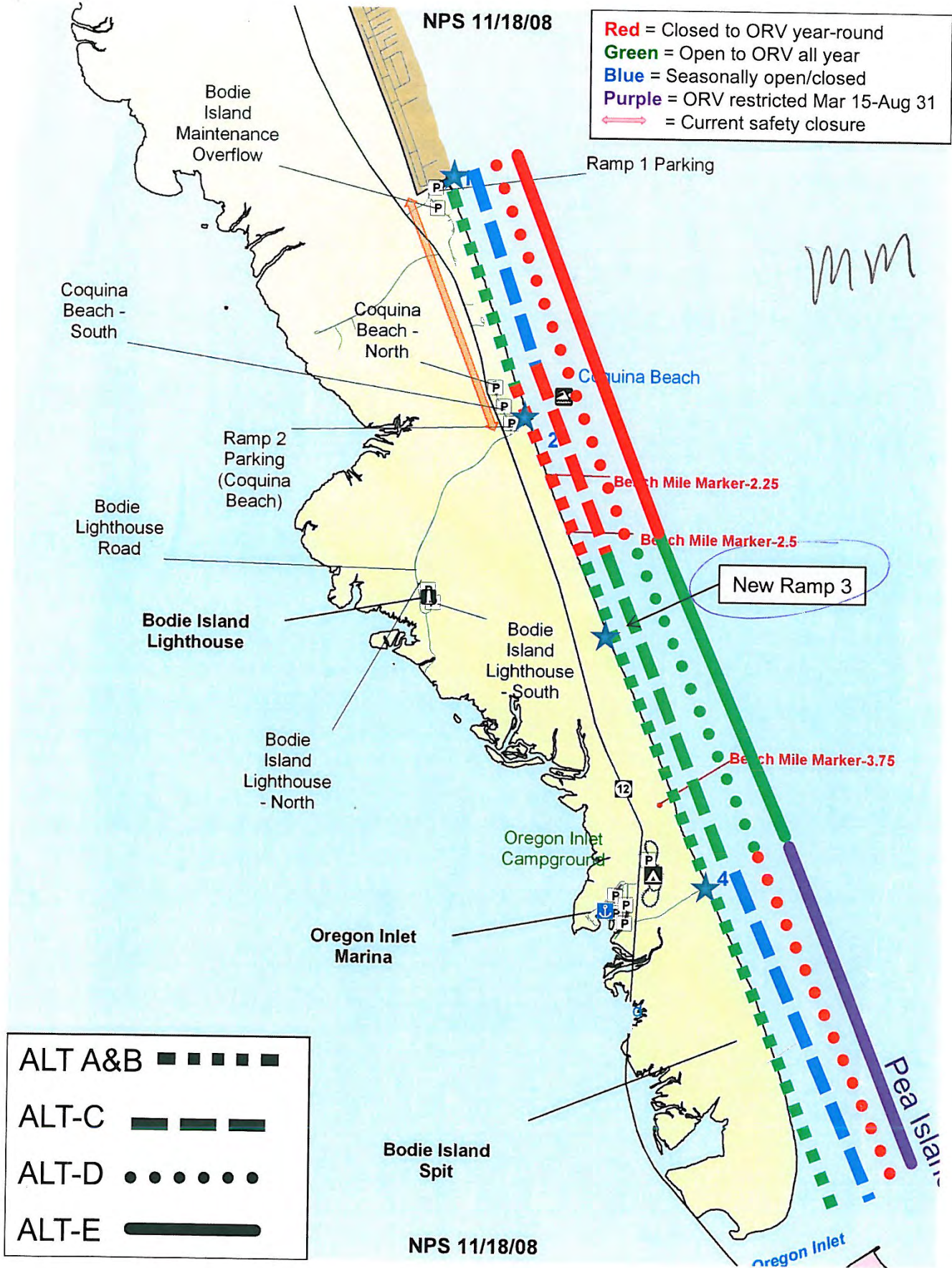
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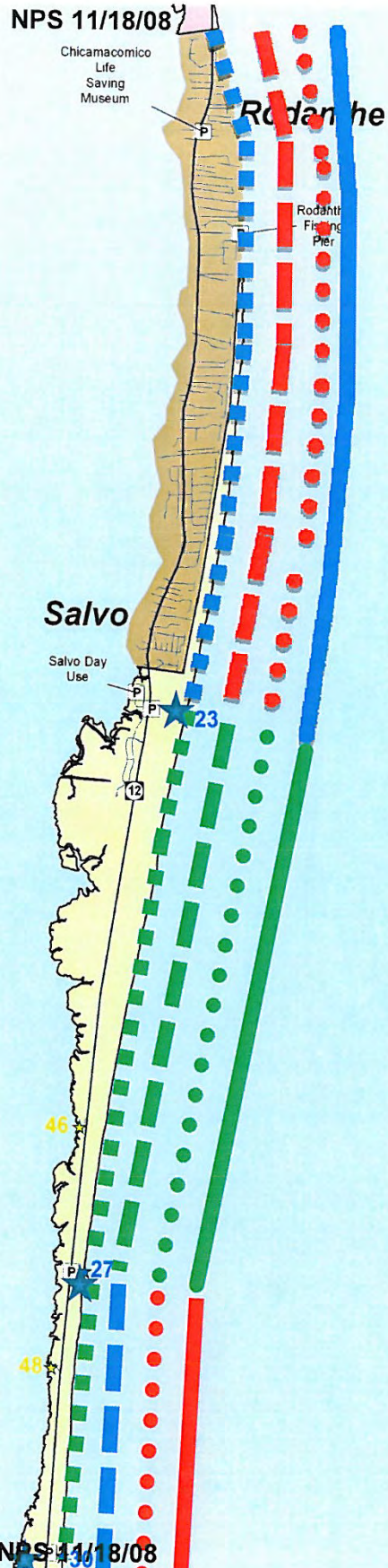
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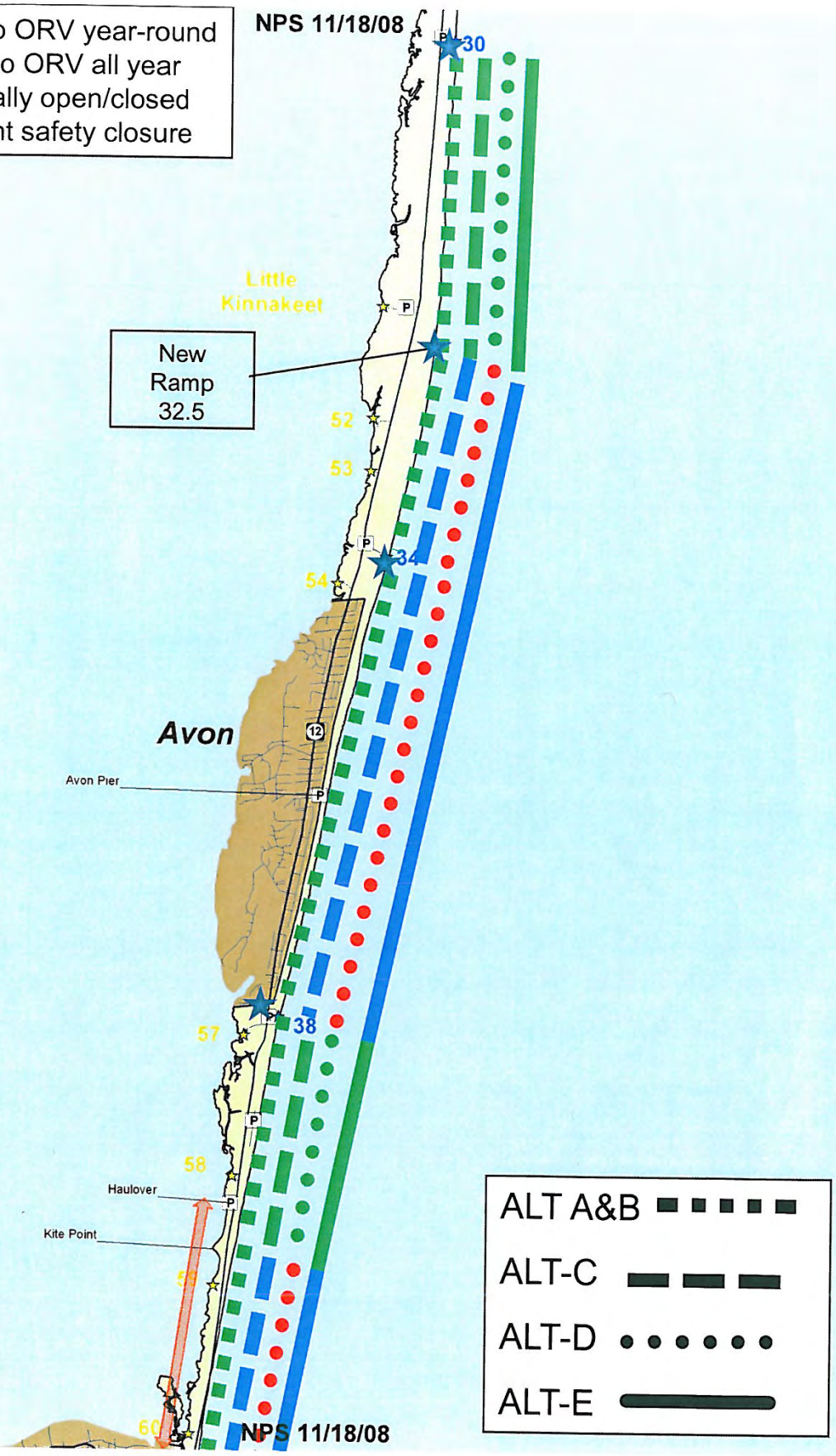


Red = Closed to ORV year-round
Green = Open to ORV all year
Blue = Seasonally open/closed
↔ = Current safety closure



ALT A&B ■ ■ ■ ■ ■
ALT-C — — — — —
ALT-D ● ● ● ● ●
ALT-E —————

Red = Closed to ORV year-round
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↔ = Current safety closure



New Ramp
32.5


Avon

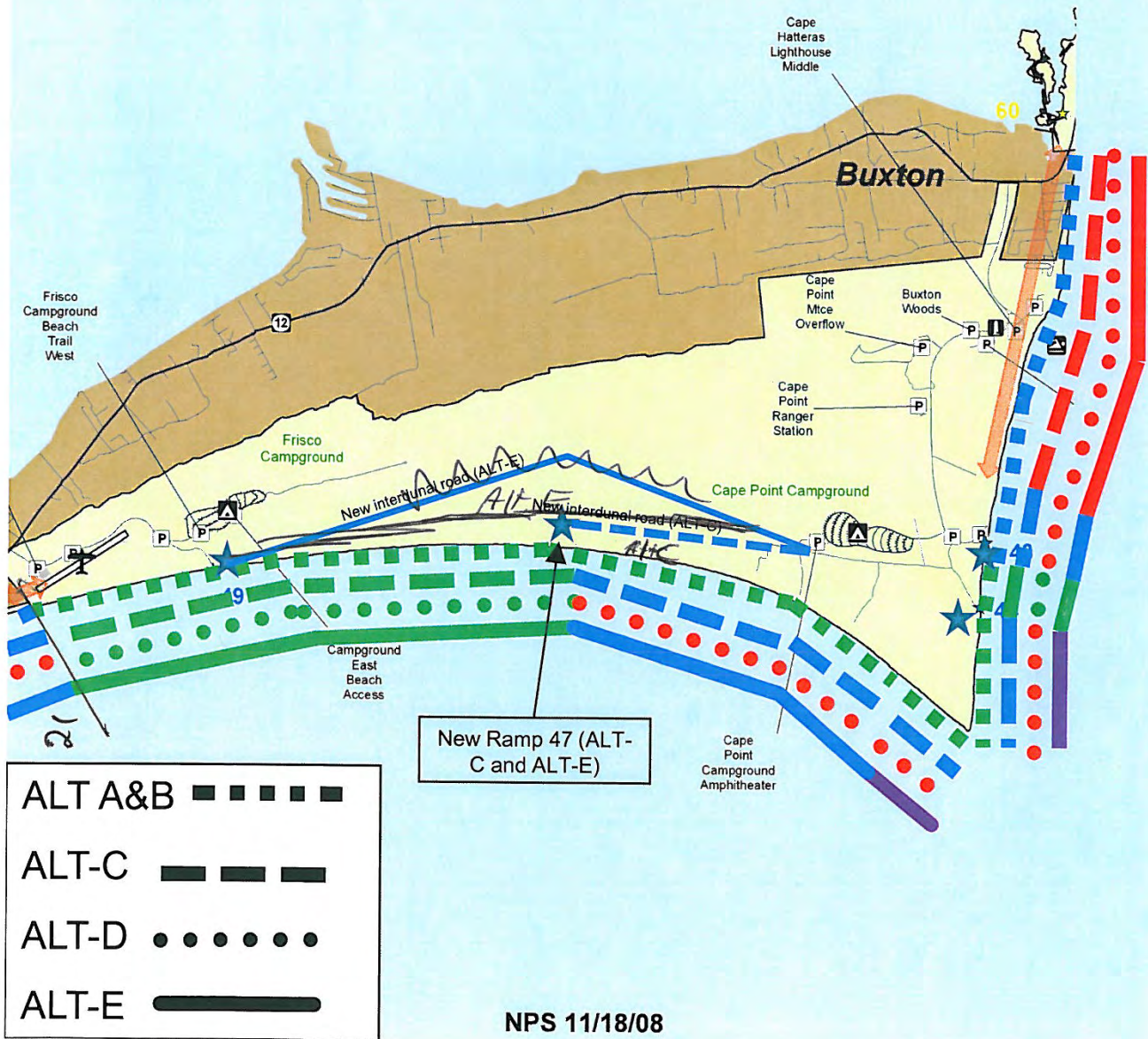
Avon Pier

Haulover

Kite Point

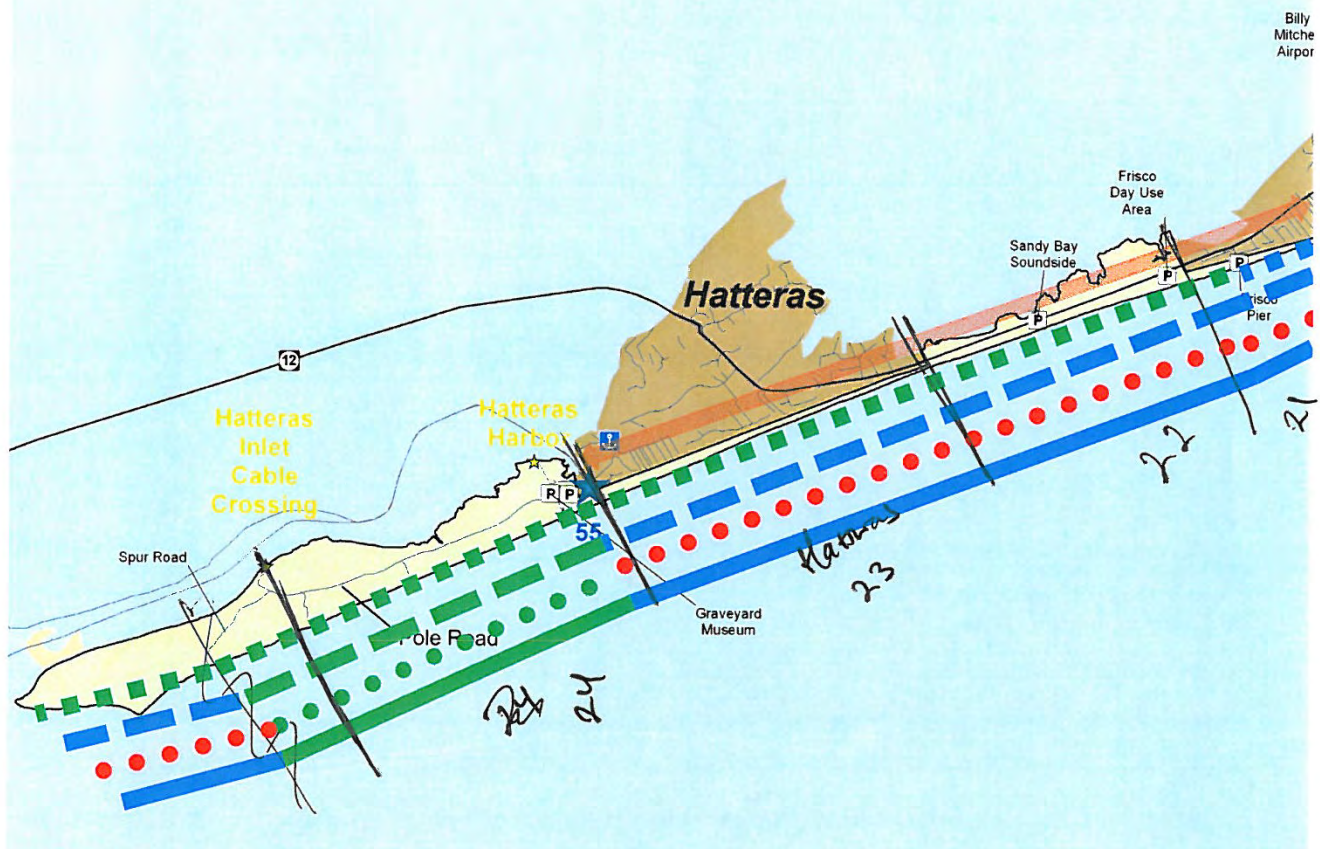
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ALT-E —————

Red = Closed to ORV year-round
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Blue = Seasonally open/closed
Purple = ORV restricted Mar 15-Aug 31
 = Current safety closure



NPS 11/18/08

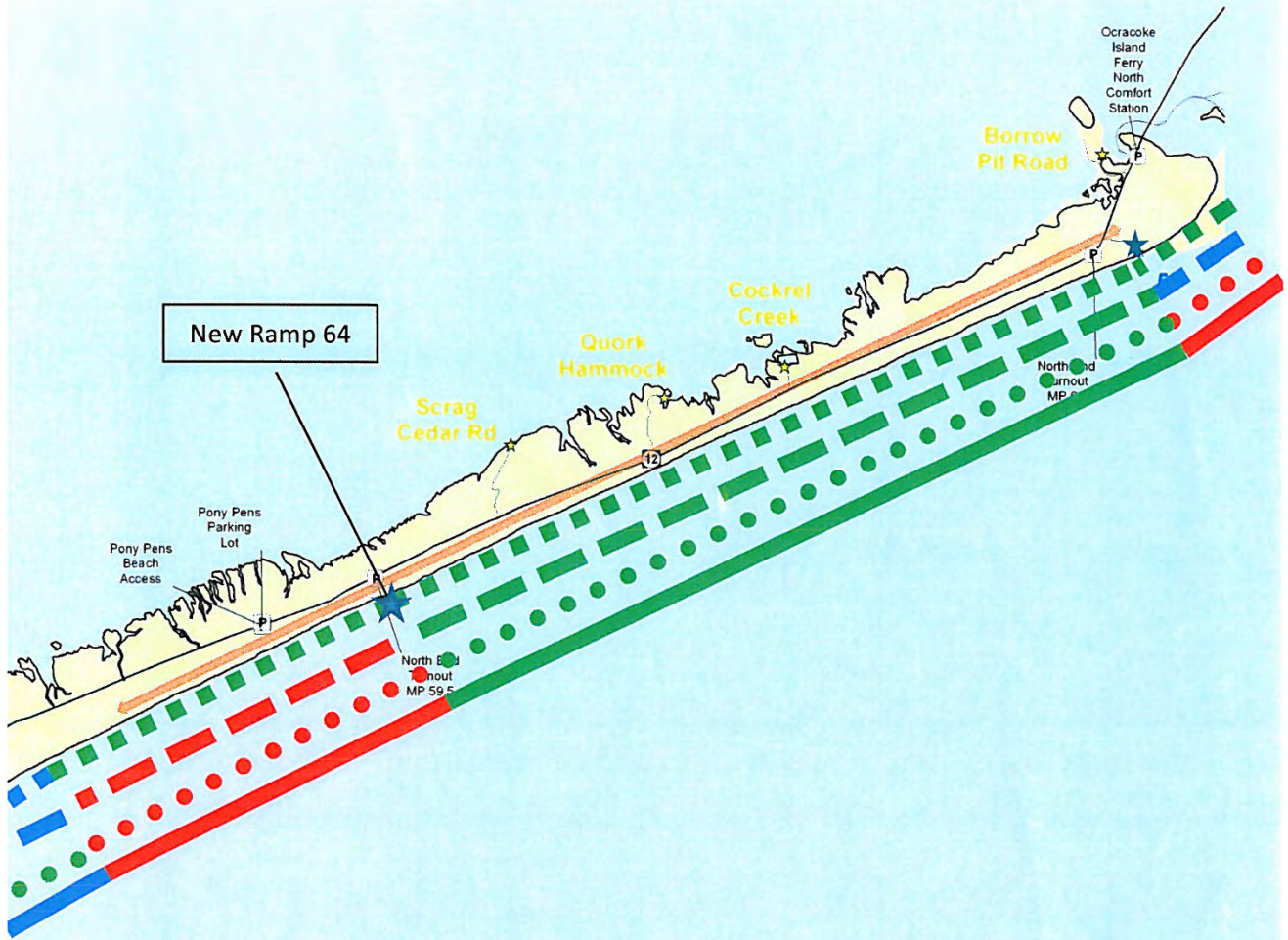
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ALT A&B ■ ■ ■ ■ ■
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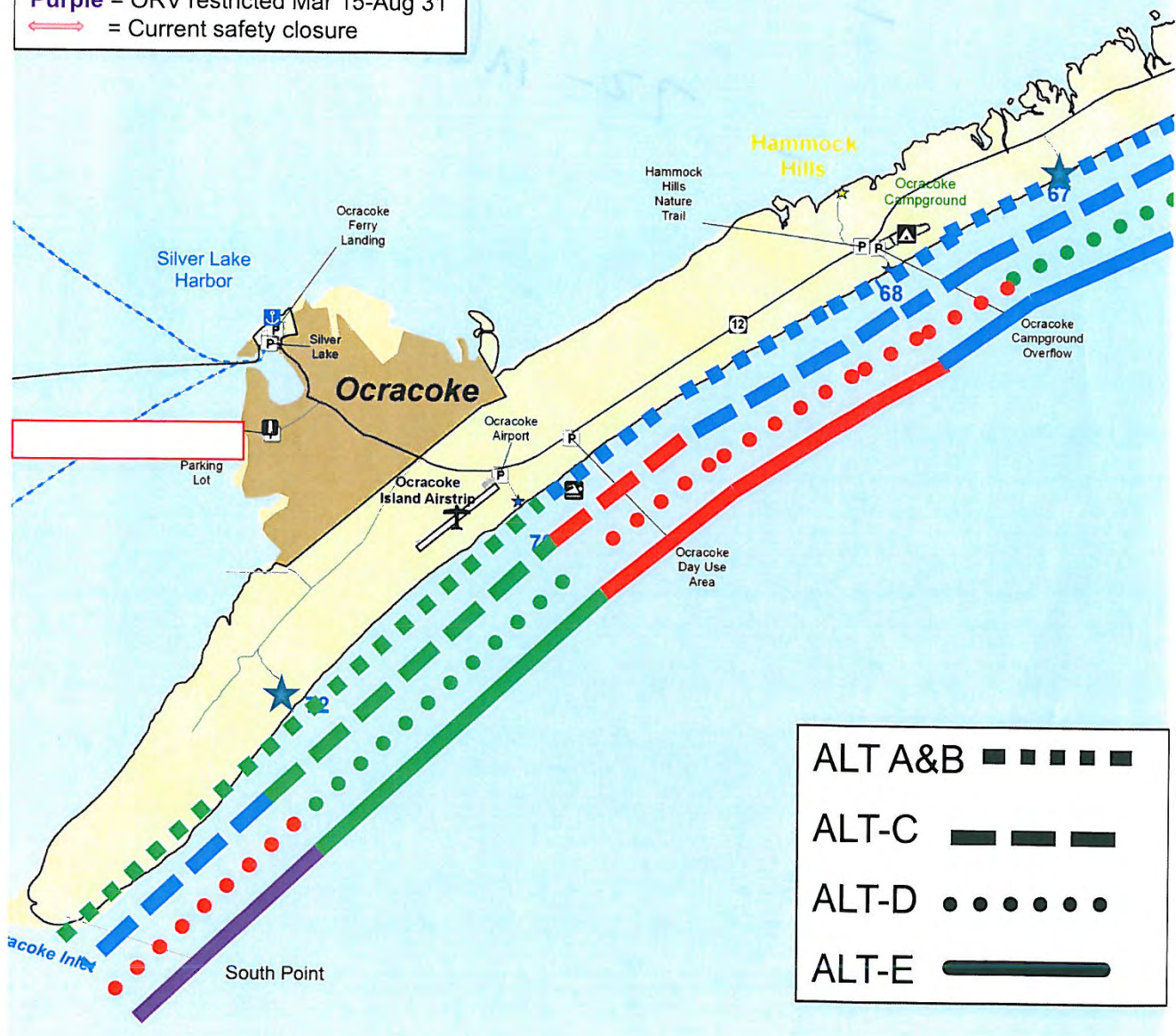
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Blue = Seasonally open/closed
Purple = ORV restricted Mar 15-Aug 31
↔ = Current safety closure



ALT A&B ■ ■ ■ ■ ■
ALT-C — — — — —
ALT-D ● ● ● ● ●
ALT-E —————

Mary Doll 1/30/09

Education and Outreach

Under all alternatives, the Seashore would continue to:

- Post signage in the Seashore so information on beach closures and Seashore resources is readily available and presented in a clear manner to the public.
- Post signage at ORV access ramps and routes on the beach and soundside. Signs at ramps include applicable ORV regulations.
- Notify the public of species management closures through weekly resource and beach access reports, press releases, email updates, and postings at the Seashore visitor centers and other NPS visitor facilities and on the park Seashore's website.
- Notify the public of species management closures that would temporarily limit ORV traffic. Send a press release to local and regional newspapers and contact local tackle shops and ORV organizations when species closures are established or reopened.
- Provide information to the public about nesting birds and sea turtles and measures taken by the Seashore to protect nests and hatchlings.
- Provide education and outreach materials regarding ~~Post information about~~ protected species (including seabeach amaranth) and measures taken by the Seashore to protect nesting birds and sea turtles at Seashore visitor centers and other NPS visitor facilities, at all ORV access ramp bulletin boards, in the park newspaper and on the park website. This includes regulations regarding trash disposal, wildlife feeding, fireworks, and pets; and the impacts of such on sensitive Seashore species.
- Provide education and outreach materials regarding ~~note~~ visitor safety ~~at~~ in the Seashore's visitor centers and other NPS visitor facilities, ORV access ramp bulletin boards, in the park newspaper and Seashore site bulletins and on the park website.
- Provide education and outreach materials regarding ~~trash disposal, endangered species, wildlife feeding, fireworks, pets, and ORV driving requirements at Seashore~~ the visitor centers and ~~at~~ other NPS visitor facilities, ORV access ramp bulletin boards, in the park newspaper and on the park website ~~at the Seashore.~~
- Solicit from interested parties how to convey information about the species management program.
- Conduct educational programs during the bird and sea turtle hatching season, during which public school students could learn about sea turtles by participating in post-hatching nest examinations. ~~(Comment: Without knowing what kind of programs we are doing or plan to do, I would edit the last part of the sentence as follows: ,during which~~ such as having public school students participate in post-hatching sea turtle nest examinations in order to learn about sea turtles ~~by participating in post-hatching nest examinations.~~
- Publish annual protected species reports regarding the previous breeding season on the Seashore website.

Comment [MSOffice1]: Would signs at the soundside routes also include applicable ORV regulations?

Comment [MSOffice2]: I took out the sentence about enforcement of these regulations, as that sentence should be in the Enforcement section of the matrix and not in the Education section of the matrix.

Formatted: Not Strikethrough

BUXTON 2/5/09

Chapter 1-Purpose and Need for Action

P17, L28-29: "Seabeach amaranth, a federally listed plant species, has been found in limited numbers at the Seashore" **add** "in the recent past. However, no plants have been documented since 2005."

P 17, L31-32: **replace** "and Kemp's ridley turtles are occasional visitors" **with** "Kemp's ridley and hawksbill, are known to occur only on the beaches of the Seashore through strandings."

P 40, L 11-12: **replace** "The Seashore is developing a predator management plan to address native and non-native predators that prey on protected species of shorebirds and on sea turtle hatchlings. The plan/Environmental Assessment..." **with** "The Seashore is developing a Predator Control Program for Protected Species Management (i.e. Environmental Assessment) to address native and non-native predators that prey on protected species of shorebirds and on sea turtle eggs and hatchlings. The Environmental Assessment..."

Chapter 2-Alternatives

P 3, L9: **delete** "in traditionally higher use pedestrian areas". The pass through ORV corridors are not necessarily in areas of higher pedestrian use.

P 9, L 11: Frisbee should not be capitalized.

P 9, L 26: **replace** "Improve signage related to beach closures and Seashore resources so that it is more readily available and presented in a clear manner to the public." **with** "Improve signage wording related to beach closures and Seashore resources and make beach closure information more readily available." The original statement appears to confuse closures (and the public's disregard for signs) and the weekly beach access reports.

P 13, L 31-32-P14, L 1: **replace** "Vehicle-free areas would be established year-round at Cape Point and the spits to provide a simplified approach to sensitive species management for Seashore operations, maximizing contiguous protected areas and eliminating seasonal changes in designated ORV use areas and the associated demands on enforcing those changes." **with** "Vehicle-free areas would be established year-round at Cape Point and the spits. The winter closures will be modified to provide ocean shoreline access to the Cape Point and the spits."

P 15, L4: **delete** "through traditionally higher use pedestrian areas".

P 23, L15: This comment is probably referring to the Amaranth study conducted by Claudia Jolls from 2001-2003 at CAHA, CALO and ASIS where there were outplantings of seabeach amaranth. I'm not sure if the outplanting would be considered a non-essential experimental population the same as reintroductions with animals or if plants

are treated differently. We have a draft final report for this study but to my knowledge it has not been finalized.

Chapter 3- Comments on draft **with PIPL** information

P8, Table 4. There is a mistake in the 2007 annual report that was partially corrected in the 2008 report. Unfortunately, the 2008 report is not completely correct either. The total # of nests in 2007 should be 10 resulting in additional changes to that row for 6 nests hatched and 60% (not 55%).

P10, Top Table (Hatching and Fledging Success at Cape Point, Cape Hatteras National Seashore, 1992-2007): After submitting the 2007 report to USFWS they felt that Nest 1 and Nest 2 should be considered 1 nest since it was a continuation of the same clutch in a new location. In 2007 there were 8 nests (not 9) and 50% hatched (not 44.4%) at Cape Point.

P 13, Table 5: The total number of nests should be changed to 10 (not 11) and 4 nests were lost or abandoned for a total of 40%

Chapter 3-Sea Turtle Comments (Page numbers correspond to draft **with no PIPL information**)

P10, L4: **add** NMFS and FWS are currently considering petitions to reclassify loggerheads in the NW Atlantic as Endangered.

P10, L9-10: **replace** “The Seashore has been consistently monitored for sea turtle nests since 1987... with only 11 nests recorded in 1987 and 99 nests recorded in 2002” **with** “The Seashore has been consistently monitoring for sea turtle nests from 2000-2008... with only 43 nests recorded in 2004 and 112 nests recorded in 2008.” We are not confident in the number recorded prior to 2000.

P10, L15: Not sure “rare” is appropriate

P10, L23: See the new 2009 NW Atlantic Loggerhead Sea Turtle Recovery Plan for more up to date references and information.

http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_loggerhead_atlantic.pdf

P10, L25: **replace** “the majority of loggerhead nesting” **with** “the two largest nesting rookeries occur..”

P10, L27-29: See http://www.floridamarine.org/features/view_article.asp?id=27537

P11, L3 Graph: This graph does not show what the title indicates that it should. This graph should be for total North Carolina nests, not CAHA nests. If the intent was to show CAHA nest totals, it is wrong as well. See the 2008 Annual Report for accurate data.

P11, L8: We should exclude nest totals prior to 2000, as we have changed both monitoring and management techniques. We don't have any confidence in data prior to 2000.

P11, L11: **replace** #49 **with** 43

P12, L1 Graph: Delete years prior to 2000, and change years after 2000 to reflect numbers in the 2008 Sea Turtle Annual Report

P13, L4: **add** sentence: "The practice of relocating nests for recreation or lighting issues is not encouraged by FWS, and therefore beginning in 2006 nests were no longer relocated for these purposes."

P13, L13: **replace** "Below 84 °F" **with** "84.6 °F". Citation is Pivotal temperature for NC from: Mrosovsky N (1988) Pivotal temperatures for loggerhead turtles (*Caretta caretta*) from northern and southern nesting beaches. Canadian Journal of Zoology 66:661-669

P14, L3-4: **replace** "From 1999 to 2007, there was an annual average of two green turtle nests at the Seashore, with a peak of four nests in 2000." **with** "From 2000 to 2008, there was an annual average of 5 green turtle nests at the Seashore, with a peak of 12 nests in 2000."

P14, L13: **replace** "as a nesting ground" **with** "potential nesting beach."

P17, L6: **add** "In 2008 several hatchlings were found entering a fire and were recovered and released. It was unknown how many died prior to the hatchlings being noticed."

P17, L7: **replace** "Several cases of hatchlings being misdirected by lights from villages and other human structures were documented in 1999, 2000, 2002, and 2004." **with** "Hatchlings being misdirected by lights from villages and other human structures is a common occurrence on the Seashore."

P17, L8: **add** "2008"

P17, L12: Insert a space between "staff" and "have"

Chapter 2

*MBM
Comments*

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Jan 2-2009

ALTERNATIVES

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

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

The NPS explored and objectively evaluated six alternatives in this EIS, including:

- Alternative A: No Action – Continuation of Management Under the Interim Protected Species Management Strategy.** Under this no-action alternative, management of ORV use and access at the Seashore would be a continuation of management based on the 2006 *Cape Hatteras National Seashore Interim Protected Species Management Strategy/EA* and the Superintendent’s Compendium 2007, as well as elements from the 1978 draft interim ORV management plan that were incorporated in Superintendent’s Order #7.
- Alternative B: No Action – Continuation of Terms of Consent Decree Signed April 30, 2008.** Under alternative B, management of ORV use would follow the terms described under alternative A, except as modified by the provisions of the Consent Decree. Modifications in the Consent Decree include changes to the buffers for various species at the Seashore and added restrictions related to night driving.
- Alternative C: Seasonal Management.** Alternative C would provide visitors to the Seashore with a degree of predictability regarding areas available for ORV use, as well as vehicle-free areas, based largely on the seasonal resource and visitor use characteristics of various areas in the Seashore.

~~2007~~
2007 (when FONSI was signed)?

1 • **Alternative D: Increased Predictability and Simplified Management.** Under alternative D,
2 visitors to the Seashore would have the maximum amount of predictability regarding areas
3 available for ORV use and vehicle-free areas for pedestrian use, which means restrictions would
4 be applied to larger areas and for longer periods of time to ^{minimize} ~~avoid~~ changes in ^{designated ORV and non-ORV} ~~approved use patterns~~
5 ^{cycles} over the course of a year.

6 • **Alternative E: Variable Access and Maximum Management.** Alternative E would provide use
7 areas for all types of visitors to the Seashore, including ORV users, with the highest level of
8 access resulting in more areas open to ORVs year-round, partially by providing ^{differentiating between} ~~pass through~~
9 ORV corridors in traditionally higher use pedestrian areas and by improving interdunal road and ^{the dates for seasonal non-area status of Sibroirel beach areas and} ~~ORV corridors~~ ^{village}
10 ^{site specific management at Br} ~~ORV corridors~~ ^{beaches}
11 ramp access, in addition to increased parking capacity at key locations that lend themselves well
to walking on the beach. ^{See p.15 language}

12 • **Alternative F: Negotiated Rulemaking Consensus.** To be inserted when available.

13 **ELEMENTS COMMON TO ALL ALTERNATIVES**

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

16 **OPERATOR/VEHICLE REQUIREMENTS**

- 17 • Vehicle Requirements. All vehicles operating in area of the Seashore must:
 - 18 ▪ Meet all requirements to operate legally on state highways where the vehicle is
 - 19 registered, including all vehicle equipment, licenses, and registration.
 - 20 ▪ Have a valid vehicle registration, insurance, and license plate.
- 21 • Operator Requirements. Any person operating a vehicle in any area of the Seashore must:
 - 22 ▪ Observe any law applicable to vehicle use on a paved road in the State of North Carolina.
 - 23 ▪ Hold a current driver’s license (Superintendent’s Compendium Section 4.2(a)).
 - 24 ▪ Use seatbelts.
- 25 • Operator and Passenger Requirements. Any person operating a vehicle and/or passenger in a
26 vehicle operating in any area of the Seashore must comply with the following:
 - 27 ▪ Open containers of any type of alcoholic beverage are prohibited in vehicles.

- 1 ▪ ORV drivers and/or passengers are prohibited from sitting on the tailgate or roof or
- 2 hanging outside of moving vehicles. Those in truck beds must be seated on the floor with
- 3 the tailgate closed; children in truck beds must be accompanied by an adult.
- 4 • Right of Way Requirements.
- 5 ▪ Vehicle right-of-way is not defined by Seashore, and the standard driving rules must be
- 6 followed. On ramps, the vehicle exiting the Seashore has the right-of-way.

7 **NATIONAL PARK SERVICE REGULATIONS**

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

15 **SUPERINTENDENT’S COMPENDIUM 2008**

16 The provisions detailed in Superintendent’s Compendium 2008 define Seashore-specific regulations
 17 imposed under the discretionary authority of the Superintendent of the Outer Banks Group. These
 18 provisions, as described below, are common to all alternatives.

19 **ENFORCEMENT**

20 Violations would be fined or a mandatory court appearance would be required as defined in the *Collateral*
 21 *Schedule, Eastern District of North Carolina, National Park Service.*

22 **AREAS OF VEHICLE OPERATION**

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

- 25 • Driving or parking on vegetation is prohibited.
- 26 • Driving on or between the dunes unless marked as an ORV route is prohibited.
- 27 • Operating a vehicle of any type within safety or resource closures is prohibited.

- 1 • Use only designated beach access ramps and soundside access roads to enter designated ORV
2 routes. Reckless driving, for example, cutting circles or defacing the beach, is prohibited.
- 3 • Observe pedestrian right-of-way.

4 **PERMITTED USES / COMMERCIAL FISHING**

- 5 • Commercial fishing permit holders with ORVs would be allowed to enter safety closures, but not
6 resource closures or the currently established administrative closures. Two designated
7 commercial fishing areas exist on the soundside of Ocracoke Island where only commercial
8 fishing is allowed.
- 9 • Kite flying, kite boards, and ball and Frisbee tossing prohibited within or above all bird closures.

10 **PROTECTED SPECIES MANAGEMENT**

- 11 • In general, because of the dynamic nature of the Seashore beaches and inlets, protected species
12 management could change by location and time, and new sites (bars, islands) could require
13 additional management, or management actions may become inapplicable for certain sites (e.g.,
14 habitat changes with vegetation growth, new wash over areas).
- 15 • Areas with symbolic fencing (string between posts) would be closed to recreational access.
- 16 • Data collection using a geographic positioning system (GPS) and incorporating data into a
17 geographic information system (GIS) would continue to document breeding and nest locations.
18 The Seashore has submitted a request for funding to update the GIS and develop standardized
19 protocols for collecting data for the GIS.
- 20 • Essential ~~use~~ vehicles could enter restricted areas subject to the guidelines in the Essential
21 Vehicles section of the *U.S. Fish and Wildlife Service Piping Plover (Charadrius melodus),*
22 *Atlantic Coast Population, Revised Recovery Plan (USFWS 1996).* Due to the soft sand
23 conditions of the Seashore, essential vehicles would ~~not~~ be allowed to ~~exceed~~ ^{to travel up to} 10 miles per hour.

24 **ACCESSIBILITY FOR THE DISABLED**

25 The Seashore would provide access to disabled visitors as follows:

- 26 • Beach access points and boardwalks compliant with the American with Disabilities Act (ADA)
27 requirements at the Frisco Boathouse and the Ocracoke Pony Pen.

- 1 • Beach access through the issuance of special use permits for areas in front of the villages to allow
- 2 ORVs to transport disabled visitors to the beach and then return the vehicle back to the street.
- 3 • Beach wheelchairs could be checked out at each Ranger District on a first come/first served basis.

4 **INFRASTRUCTURE**

- 5 • The Bodie Island, Hatteras Island, and Ocracoke Island Visitor Centers would be open daily
- 6 excluding Christmas.
- 7 • The park has four campgrounds at Oregon Inlet, Frisco, Cape Point, and Ocracoke. The
- 8 campgrounds would be open seasonally. Dates the campgrounds open or close would be subject
- 9 to change.
- 10 • Designated day use ^{beach} areas would be located at ^{Coguinia Beach,} Frisco, and Ocracoke.
- 11 • Fishing piers are located near Frisco and at Avon and Rodanthe on Cape Hatteras Island, and a
- 12 marina is located at Oregon Inlet on Bodie Island. These would continue to be available to the
- 13 public.

14 **EDUCATION AND OUTREACH**

15 Under all alternatives, the Seashore would continue to:

- 16 • Promote visitor safety in the Seashore's newspaper and Seashore site bulletins.
- 17 • Provide educational materials regarding trash disposal, ^{protected} endangered species, wildlife feeding,
- 18 fireworks, pets, and driving requirements at the visitor centers and at other NPS facilities at the
- 19 Seashore.
- 20 • Notify the public of species management closures through weekly resource and beach access
- 21 reports, press releases, email updates, and on the Seashore's website.
- 22 • Post signage at ORV access ramps and routes on the beach and soundside. Signs at ramps include
- 23 applicable ORV regulations.
- 24 • Post signage in the Seashore so information on beach closures and Seashore resources is readily
- 25 available and presented in a clear manner to the public.
- 26 • Conduct educational programs during the bird and sea turtle hatching season, during which public
- 27 school students could learn about sea turtles by participating in post-hatching nest examinations. ?

→ have many fix wording

See edited version on next page

edits

Education and Outreach

Under all alternatives, the Seashore would continue to:

- Post signage in the Seashore so information on beach closures and Seashore resources is readily available and presented in a clear manner to the public.
- Post signage at ORV access ramps and routes on the beach and soundside. Signs at ramps include applicable ORV regulations.
- Notify the public of species management closures through weekly updates, and via press releases, email updates, and postings at the Seashore visitor centers and other NPS visitor facilities and on the park website.
- Notify the public of species management closures that would temporarily limit ORV traffic. Send a press release to local and regional newspapers and contact local tackle shops and ORV organizations when species closures are established or reopened.
- Provide education and outreach materials regarding protected species (including seabeach amaranth) and measures taken by the Seashore to protect nesting birds and sea turtles at Seashore visitor centers and other NPS visitor facilities, ORV access ramp bulletin boards, in the park newspaper and on the park website. This includes regulations regarding trash disposal, wildlife feeding, fireworks, and pets; and the impacts of such on sensitive Seashore species.
- Provide education and outreach materials regarding ORV driving requirements and visitor safety at Seashore visitor centers and other NPS visitor facilities, ORV access ramp bulletin boards, in the park newspaper and on the park website.
- Solicit from interested parties how to convey information about the species management program.
- Conduct educational programs during the bird and sea turtle hatching season, such as having public school students participate in post hatching sea turtle nest examinations in order to learn about sea turtles.
- Publish annual protected species reports regarding the previous breeding season on the Seashore website.

see edits

- 1 • Provide information to the public about nesting birds and sea turtles and measures taken by the Seashore to protect nests and hatchlings.
- 2
- 3 • Post information about protected species (including seabeach amaranth) at all ORV ramp bulletin
- 4 boards.
- 5 • Publish annual protected species reports regarding the previous breeding season on the Seashore
- 6 website.
- 7 • Enforce proper trash disposal (pack in/pack out) and ~~anti-wildlife feeding regulations~~ ^{regulations prohibiting the feeding of wildlife.} throughout
- 8 the Seashore, [[] including proper disposal of fishing bait and filleted fish carcasses. []] Provide
- 9 education and outreach materials regarding the impacts of trash disposal, wildlife feeding,
- 10 fireworks, and pets on sensitive Seashore species. Solicit from interested parties how to convey
- 11 information about the species management program.
- 12 • Notify the public of species management closures that would temporarily limit ORV traffic. ^{Send}
- 13 ^{Via weekly beach access reports, press releases, and by} a press release to local and regional newspapers and contact local tackle shops and ORV
- 14 ^{organizations when species closures established or reopened.}

Google Earth maps posted on the park website

16 **NO-ACTION ALTERNATIVES**

17 The “no action” alternatives were developed for two reasons. A no-action alternative may be a viable

18 choice in the range of reasonable alternatives, and ^{it} ~~the no action alternatives~~ set a baseline of existing

19 impacts continued into the future against which to compare the impacts of action alternatives. For this

20 EIS, the range of alternatives includes two no-action alternatives. Alternative A represents continuing

21 management as described in the *Interim Protected Species Management Strategy/EA*. This management

22 was challenged in court and subsequently modified by the Consent Decree that was signed on April 30,

23 2008. Alternative B represents continuing management as described in the Consent Decree. Two no-

24 action alternatives are analyzed to capture the full range of management actions that occurred and are

25 currently occurring.

26 Tables 1 and 2 compare the actions that would be taken under each alternative and figure 1 contains the

27 maps of all alternatives.

1 **ALTERNATIVE A: NO ACTION – CONTINUATION OF MANAGEMENT UNDER THE INTERIM**

2 **PROTECTED SPECIES MANAGEMENT STRATEGY**

3 Under this no-action alternative, management of ORV use and access at the Seashore would be a
 4 continuation of management based on the ^{identified in the} 2006 ^{July 2007 FOI/ESI for the} ~~Interim Protected Species Management Strategy/EA~~ ^{2007 selected alternative C} and the 2007
 5 Superintendent's Compendium ~~2006~~, as well as elements from the 1978 draft interim ORV management
 6 plan that were incorporated in Superintendent's Order #7²⁰⁰⁶. These actions would include providing access
 7 throughout the Seashore, except in areas of temporary resource, safety, or administrative closures. Under
 8 the no-action alternative, the entire Seashore would be a designed route or area and open 24 hours a day
 9 year round, but subject to temporary resource closures, ^{seasonal closures in front of the villages, and} Vehicles would be allowed on the beach overnight ^{temporarily}
 10 only if someone associated with the vehicle was actively fishing. The ORV corridor would be marked by ^{ORV safety} posts placed approximately 150 feet landward from the average, normal high tide line, or if less than 150 ^{closures}
 11 feet of space is available, at the vegetation or the toe of the remnant dune line; except during breeding
 12 season in protected species areas. Existing ORV safety closures would be maintained and new closures
 13 established as needed to address safety conditions such as debris on the beach or narrow beaches. Narrow
 14 beaches would be reopened as the beach widens. The beach in front of Cape Hatteras Lighthouse and
 15 Buxton Woods road would remain closed to ORV access for administrative purposes.

17 This no-action alternative would not require vehicles to have permits and would not involve any carrying
 18 capacity restrictions. Under this alternative, vehicles operating in the Seashore must be "street legal,"
 19 have a valid vehicle registration, insurance, and license plate. The speed limit would be 25 mph (unless
 20 otherwise posted) on park beaches for public and private vehicles, although the speed limit in front of
 21 villages from September 16 to May 14) would be 10 mph. There would be no increase in parking
 22 facilities associated with this alternative. Details of the management actions under this alternative are
 23 described in Table 1.

24 **ALTERNATIVE B: NO ACTION – CONTINUATION OF TERMS OF CONSENT DECREE SIGNED**

25 **APRIL 30, 2008**

26 A consent decree was signed on April 30, 2008, in U.S. District Court, whereby the parties involved in
 27 the lawsuit to regulate beach driving along Cape Hatteras National Seashore agreed to a settlement of the
 28 case. Terms of the Consent Decree required the NPS to complete an ORV Management Plan for the
 29 Seashore by December 31, 2010, complete and promulgate the final Special Regulation by April 11,
 30 2011, and provide details of specific species protection measures to take place until the plan was
 31 completed. Under alternative B, management of ORV use and access at the Seashore would be a
 32 continuation of management based on the terms of the Consent Decree. Under the Consent Decree,

1 management of ORV use would follow the terms described under alternative A, except as modified by the
 2 provisions of the Consent Decree. Modifications in the Consent Decree include changes to the buffers for
 3 various species at the Seashore and added restrictions related to night driving. Under alternative B,
 4 beaches would be closed to ORV use between the hours of 10:00 p.m. and 6:00 a.m. from May 1 to
 5 November 15. However, from September 16 to November 15, ORV use from 10:00 p.m. to 6:00 a.m.
 6 would be subject to the terms and conditions of a permit that can be obtained on-line or at NPS offices.
 7 From March 15 to November, an ORV-free zone of at least 10 m wide would be located in the ocean
 8 backshore wherever there is sufficient beach width to allow an ORV corridor of at least 20 m wide above
 9 the mean high tide line. Under alternative B, buffers for protected species would be ~~very similar to~~ *larger than those*
 10 *identified in alternative A, with the exception of the* required 1000-meter buffer for unfledged piping plover chicks. In
 11 addition to ORV use, this 1000-meter buffer would also apply to pets, kite flying, Frisbee throwing and
 12 similar activities. If there is a conflict between the interim strategy/EA and the measures described in the
 13 Consent Decree, the Consent Decree would prevail. Details of the management actions under this
 14 alternative are described on ~~Table~~ *T*able 1.

15 ACTION ALTERNATIVES

16 The action alternatives would establish areas that allow ORV use and vehicle-free areas where ORV use
 17 is prohibited. Although ORV ~~use~~ *both and non-ORV* areas are specifically identified, these areas do not prohibit other uses,
 18 in effect making ORV ~~use~~ *use* areas multi-use recreation areas. *and non-ORV areas (or non-ORV)*

19 ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

20 The action alternatives, alternatives C, D, E, and F, *[verify F when available]* provide a range of
 21 reasonable alternatives. The following describes elements of the management actions common to all the
 22 action alternatives.

23 Education and Outreach

24 The Seashore would:

- 25 • Distribute educational information at local real estate rental agencies and hotels/motels.
- 26 • Improve signage related to beach closures and Seashore resources so that it is more readily
 27 available and presented in a clear manner to the public.
- 28 • Work with local organizations and businesses to ensure wider distribution of ORV and resource
 29 protection information.

- 1 • Encourage the Visitors Bureau and local tackle shops to link their websites to the Seashore's
- 2 website to ensure different segments of the visiting public have up-to-date information on beach
- 3 closures and, if an ORV permitting system is developed, ORV permitting information.
- 4 • Develop a user-friendly ORV educational program (e.g., video, DVD, or on-line) that could be
- 5 self-administered at a variety of outlets such as tackle shops, welcome centers, and NPS offices.
- 6 • Implement more educational programs in local schools and expand the Junior Ranger program to
- 7 include more web-based options to interest youth in Seashore resources and stewardship.

8 **Vehicle Requirements**

- 9 • Four-wheel drive required.
- 10 • Vehicle tires may not be inflated more than 20 psi while driving on beach.

11 **Equipment Requirements**

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

13 **Accessibility for the Disabled**

- 14 • Retrofit existing boardwalks with accessible ramps to allow for more opportunities for disabled
- 15 persons to access or view the beach.

16 **ADAPTIVE MANAGEMENT APPROACHES INCLUDED IN THE ALTERNATIVES**

17 The Department of the Interior requires that its agencies "use adaptive management to fully comply" with
 18 CEQ guidance that requires "a monitoring and enforcement program to be adopted....where applicable,
 19 for any mitigation" (516 DM 1.3 D (7); 40 CFR 1505.2). Adaptive management is based on the
 20 assumption that current resources and scientific knowledge are limited. Nevertheless, adaptive
 21 management attempts to apply available resources and knowledge and adjusts management techniques as
 22 new information becomes available (NPS n.d.:71).

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

- 26 • applying management actions,
- 27 • monitoring consequences,

1' ORV routes and ~~use~~ areas" terminology
awkward,
use E.O. language
Use "routes and areas"

- 1 • evaluating monitoring results against plan objectives,
- 2 • adjusting management, and
- 3 • using feedback to make future management decisions (appendix XX).

4 All action alternatives incorporate adaptive management techniques designed to aid in meeting plan
 5 objectives. Each action alternative includes a specific management action and a period of monitoring to
 6 evaluate the success of the action. Integrating these issues into decision-making for future actions would
 7 allow the park to change timing, intensity, or type of management actions to better meet the goals of the
 8 plan.

9 The monitoring and adaptive management plan (appendix XX) describes the potential changes in ORV
 10 management strategies that could occur as a result of monitoring activities findings. Under this plan, key
 11 monitoring data that could influence management actions are those related to visitor experience and
 12 species protection. Based on impacts to these areas, ORV management actions would be adjusted based
 13 on the alternative selected, and additional or new management would be incorporated into plan
 14 implementation.

15 **DISCUSSION OF ACTION ALTERNATIVES**

16 **ALTERNATIVE C: SEASONAL MANAGEMENT**

17 This alternative would provide visitors to the Seashore with a degree of predictability regarding areas
 18 available for ORV use, as well as vehicle-free areas, based largely on the seasonal resource and visitor
 19 use characteristics of various areas in the Seashore. In this alternative, ORV use would be managed by
 20 identifying areas that (1) historically do not support sensitive resources, or (2) historically have lower
 21 visitor use. These areas would be designated as ORV use areas year-round. Areas of high resource
 22 sensitivity or high visitor use would be ^{seasonally} designated as ORV routes or areas based largely on seasonal
 23 resource sensitivity and visitor use patterns. ~~Areas historically having safety issues would be designated~~
 24 ~~as year-round closures for safety reasons if the beach is less than 100 feet wide.~~

25 Establishing ORV routes and ~~use~~ ^(or non-ORV) areas and vehicle-free areas based largely on seasonal resource
 26 requirements would provide the public and the Seashore with a structured management approach that
 27 clearly states which ^{routes and} areas are available for ORV use and when the ~~areas~~ ^{are} open. The public would have
 28 clear direction about ^{routes and} areas that would be open seasonally, but it would require the public to remain
 29 informed about closures. Implementation would require an increase in park staff and resources for public

1 education and enforcement, but the identification of defined use areas would provide for more efficient
2 park operations.

3 Table 2 indicates the proposed seasonal and year-round use areas under alternative C. Generally, most
4 areas would be open to ORVs from October 1 to March 31, primarily to protect certain areas during the
5 breeding season and minimize conflicts during high visitor use periods. Areas that would be seasonally
6 designated vehicle-free would include the area in front of villages, campgrounds, and lifeguarded
7 beaches. These seasonal vehicle-free areas would occur from April 1 to September 30, during periods of high visitation. ~~the summer~~
8 months. The spits and points would be open seasonally to provide resource protection. The soundside
9 would be established as a vehicle-free area to protect sensitive vegetation. Parking would be available at
10 the existing soundside ramps and access paths would be at designated boat launch areas to prevent damage
11 to vegetation and other soundside resources. Existing soundside ramps would remain open. Signage/post would be installed at the primitive parking areas and boat launch areas to prevent damage to vegetation and other soundside resources.

12 ORV routes and use areas under this alternative would be subject to temporary resource closures
13 established when protected species behavior warrants additional protection or if protected species habitat
14 is established.

15 Designated ORV routes and areas would be established year-round in all areas not designated as vehicle-
16 free, including year-round in areas without sensitive resources or high visitation and seasonally in areas with high visitation and/or sensitive resources. To ensure access to these
17 areas, existing ramps would be improved or reconfigured to provide access to designated routes and areas.
18 The interdunal road network would be maintained at its current level of access. Designated ORV routes
19 and areas would be open from 6:00 AM to 10:00 PM year-round to protect sea turtles at night (when
20 artificial light sources can impact the turtles) and allow law enforcement to concentrate their resources
21 during the daytime hours. plus the interdunal road would be extended west of Ramp 45 to a new Ramp 47. May 1 - November 15

22 Law enforcement would designate safety closures as conditions warrant and would evaluate closures for
23 reopening at least every two weeks.

24 Alternative C would include a Seashore-wide, seasonal carrying capacity element based on a physical
25 space requirement of one vehicle per 20 linear feet for Bodie and Hatteras Island Ranger Districts and one
26 vehicle per 30 linear feet for the Ocracoke Island Ranger District. This carrying capacity would be applicable
27 implemented if increased visitation over the life of the plan resulted in overcrowding that could cause
28 safety concerns. The allowable number of vehicles in each area subject to the carrying capacity would be
29 determined by the space requirements and the beachfront length of the area. applicable to May 15 - Oct 15

30 Alternative C would involve a vehicle permit system, with no limits on numbers of permits issued. Permit
31 fees would be determined based on cost recovery of costs subject to the administrator ORV management program. To obtain the permit, ORV
32 owners would be required to read the rules and regulations governing ORV use at the seashore and

1 complete a written or on-line exam demonstrating their understanding of the rules and regulations
 2 governing ORV use at the Seashore, beach driving safety, and resource closure requirements. After
 3 completing the exam, the owner would be required to sign for the permit in acknowledgement that the
 4 signer understands the rules and that all drivers of the permitted vehicle will abide by the rules and
 5 regulations governing ORV use at the seashore. A violation of the rules and regulations by the owner or
 6 driver of the ORV could result in revocation of the vehicle permit, and the owner/permittee would not be
 7 allowed to obtain another permit for any ORV for a specified period of time. Designated routes and areas
 8 under alternative C are shown on ^Ffigure 1 and details of the management actions under this alternative are
 9 described on ^Ttable 1.

where is it specified?

10 **ALTERNATIVE D: INCREASED PREDICTABILITY AND SIMPLIFIED MANAGEMENT**

11 This alternative would provide visitors to the seashore with the maximum amount of predictability
 12 regarding areas available for ORV use and vehicle-free areas for pedestrian use, which means restrictions
 13 would be applied to larger areas and for longer periods of time to ^{minimize} ~~avoid~~ changes in ^{designated ORV and non-ORV} ~~approved use patterns~~
 14 ^{areas} over the course of the year. Under this alternative, ORV management would be achieved by identifying
 15 areas that historically do not support sensitive resources and areas of lower visitor use. These areas would
 16 be designated as ORV use areas year-round. Areas of ^{with a history of seasonally} ~~historically~~ high resource sensitivity or high visitor ^{year-round}
 17 use would not be designated ORV routes or areas. Establishing ORV routes and use areas and vehicle-
 18 free areas on a year-round basis (rather ^{than} ~~seasonally~~) would be a simplified management approach that
 19 would reduce confusion about which areas are available for ORV use during a specified time, and would
 20 reduce the ^{level of} ~~need for~~ staff resources ^{needed} on the beach. Because of the relative simplicity of the elements of this
 21 alternative, implementation would require a reduced level of park staff and resources and would maximize
 22 the efficiency of park operations.

23 Table 2 indicates the proposed year-round ^{ORV routes and} ~~use~~ areas under alternative D. Year-round vehicle-free areas
 24 would include the areas in front of villages, ~~campgrounds, and~~ lifeguarded beaches, ^{and Ocracoke Campground,} ~~Frisco Campground~~
 25 ~~would be an exception, because closing this area would close off a larger area of the beach than necessary~~
 26 ~~based on the existing ramp system.~~

27 Vehicle-free areas would enhance visitor safety during periods of high visitation, particularly in the
 28 summer months, and would also provide a vehicle-free experience for visitors during the off-season. The
 29 ^{access would be limited to existing ramps and access points} ~~soundside would be established as a vehicle-free area~~ to protect sensitive vegetation. ~~Parking would be~~
 30 ~~available at the existing soundside ramps and access paths would be at designated boat launches.~~ Vehicle-
 31 free areas would be established year-round at Cape Point and the spits to provide a simplified approach to
 32 sensitive species management for Seashore operations, maximizing contiguous protected areas and

"ORV routes and use areas" terminology
use "ORV routes and areas"

1 eliminating seasonal changes in designated ORV use areas and the associated demands on enforcing those
2 changes. Other uses would continue to be allowed in these vehicle-free areas outside of identified
3 resource closures. *and areas* *what does this mean? "ORV routes and areas" (?) or "ORV routes and non-ORV areas" ?*
4 ORV routes and ~~use areas~~ under this alternative would be subject to temporary resource closures
5 established when warranted by protected species behavior or if habitat is established.

6 Designated ORV routes and ~~use areas~~ *implies* would be established year-round in all areas not designated vehicle-
7 free. To ensure access to these areas, existing ramps could be improved or reconfigured to allow access to
8 designated routes and ~~use areas~~.

9 Designated ORV routes and ~~use areas~~ would be open 6:00 AM to 10:00 PM *April - November 15* year-round to protect sea
10 turtles at night (when artificial light sources can impact the turtles) and allow enforcement to concentrate
11 their resources during the daytime hours.

12 Safety closures would not be designated; ORV users would drive at their own risk, including areas with a
13 history of safety issues due to narrow beach width. Drivers would rely on their knowledge of beach
14 driving to determine if an area is safe to access based on their assessment of current conditions and would
15 enter these traditionally closed areas at their own risk.

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

19 Alternative D would involve a simple vehicle permit system, with ~~no fees~~ *subject to recovery of costs to administer the program* and no limits on the numbers of
20 permits issued. To obtain the permit, ORV drivers would be required to read the rules and regulations
21 governing ORV use at the seashore including beach driving safety and resource closure requirements. The
22 owner would be required to sign for the permit in acknowledgement that the signer understands the rules
23 and that all drivers of the permitted vehicle will abide by the rules and regulations governing ORV use at
24 the seashore. Special consideration would be placed on providing information about beach safety and
25 personal responsibility for safety due to the lack of safety closures under this alternative. A violation of
26 the rules and regulations by the owner or driver of the ORV could result in revocation of the vehicle
27 permit, ~~and the owner would not be allowed to obtain another permit for any vehicle for a~~
28 ~~specified period of time.~~ Designated routes and areas under alternative D are shown on *F* figure 1 and details
29 of the management actions under this alternative are described in Table 1.

~~what is this paid?~~

1 **ALTERNATIVE E: VARIABLE ACCESS AND MAXIMUM MANAGEMENT**

2 This alternative would provide use areas for all types of visitors to the Seashore, including ORV users,
 3 with the highest level of access. ~~More areas may be open year-round to ORV users because ORV~~
 4 ~~corridors would be established through traditionally higher pedestrian use areas and~~ Interdunal road and
 5 ramp access would be improved. Vehicle-free areas would be designated for non-ORV users to
 6 experience the park without the presence of vehicles. Like the other action alternatives, this alternative
 7 would manage ORV use by identifying areas that historically do not support sensitive resources and areas
 8 of lower visitor use. These areas would be designated as ORV use areas year-round. Areas of high
 9 resource sensitivity or high visitor use would be designated as ^{seasonal} ORV use areas based on seasonal resource
 10 and visitor use patterns; however, ORV corridors would be designated ~~through a number of these areas as~~ ^{to provide access to Beebe Island spit}
 11 conditions permit. Establishing seasonal ORV routes, use areas, and vehicle-free areas, and designating ^{Cape Point and South Point}
 12 ~~ORV corridors for passing through some of these areas would provide ORV users access to a greater~~ ^{Ocracoke}
 13 number of areas within the Seashore. However, this alternative would afford the least amount of
 14 predictability regarding areas available for ORV ^{use} and vehicle-free areas. ^{The status of} Implementation would ^{change}
 15 perhaps be difficult to relay to the public ^{move frequently,} and would require a greater number of park staff and resources ^{to implement}
 16 than the other alternatives. ^{in a timely manner,}

17 Table 2 indicates proposed seasonal and year-round use areas under alternative E. Seasonally designated
 18 vehicle-free areas would include the areas in front of villages ~~campgrounds (with an ORV corridor)~~ and
 19 lifeguarded beaches. The ORV open season would be defined as ^{in these areas} ~~October 1 to March 31~~ ^{November} to allow an
 20 additional month of non-ORV use in ^{April and October} ~~March~~ when visitation can be high; therefore, the seasonal vehicle-
 21 free areas would occur in periods of high visitation during the spring ^{and fall} and summer months. ~~The soundside~~
 22 ~~would be established as a vehicle-free area to protect sensitive vegetation. Parking would be available at~~ ^{Use ATE}
 23 ~~the existing soundside ramps and access paths provided would be at designated boat launches. The~~ ^{established language}
 24 Seashore would maintain posts defining the location of the parking area and access paths. ORV corridors ^{from Matrix}
 25 would be designated at ^{Bodie Island Spit} ~~Cape Point~~ ^{and South Point} ~~and the spit~~ year-round; however, access would not be guaranteed
 26 because resource activity and capacity numbers would define access at any given time. ^{Ocracoke during the breeding season}

27 ORV routes and ~~use~~ areas under this alternative would be subject to temporary resource closures ^{access}
 28 established when warranted by protected species behavior or if habitat is established. ORV ~~corridors~~ ^{roads}
 29 would be established around areas of high resource sensitivity (dependent on resource activity in the area)
 30 via the interdunal road system, through improvements or reconfigurations of the existing ramp system, or
 31 by establishing a beach driving corridor. Existing ramps would be improved or reconfigured to provide
 32 access to designated routes and areas. Designated ORV routes and areas would be open 24 hours a day
 33 from November 1 through April 30; ~~designated ORV routes and areas would be open by permit only from~~

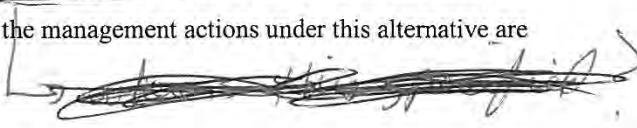
might driving would not be allowed between 10 p.m. to 6:00 a.m. from May 1 - September 15, 15 and

Party Worked

1 10:00 PM to 6:00 AM from September 15 to October 31, ~~and night driving would not be allowed from~~
2 ~~May 1 to September 15,~~ to protect sea turtles at night and allow enforcement to concentrate their
3 resources during the daytime hours. ~~Beach camping would be permitted in designated areas and a permit~~
4 ~~would be required.~~

5 Law enforcement would designate safety closures as conditions warrant and would evaluate closures for
6 reopening at least every two weeks.

7 Alternative E would include a carrying capacity requirement for certain heavily used areas based on a
8 physical space requirement of one vehicle per 20 linear feet for Bodie and Hatteras Island Ranger
9 Districts and one vehicle per 30 linear feet for the Ocracoke Island Ranger District. Areas of high ORV
10 use (~~Hatteras Island Spit, Cape Point, and Bodie Island Spit~~ ^{Such as Bodie Island Spit & South Point Ocracoke}) would be managed via the implementation of
11 a defined carrying capacity ^{no need for} during high-use weekends, such as major summer holidays. This carrying
12 capacity would be implemented in other areas if increased visitation over the life of the plan resulted in
13 overcrowding in other areas that could cause safety concerns. In all cases, the allowable number of
14 vehicles in each area would be determined by the space requirements and the beachfront length of the
15 area.

16 Alternative E would involve a vehicle permit system, with no limits on numbers of permits issued. Permit
17 fees would be determined based on cost recovery to ^{administer the program,} ~~implement the system.~~ To obtain the permit, ORV
18 owners would be required to read the rules and regulations governing ORV use at the seashore and
19 complete a written or on-line exam demonstrating understanding of the rules and regulations governing
20 ORV use at the seashore, beach driving safety, and resource closure requirements. After completing the
21 exam, the owner would be required to sign for the permit in acknowledgement that the signer understands
22 the rules and that all drivers of the permitted vehicle will abide by the rules and regulations governing
23 ORV use at the seashore. A violation of the rules and regulations by the owner or driver of the ORV
24 could result in revocation of the vehicle permit, ~~and the owner/permittee would not be allowed to obtain~~
25 ~~another permit for any vehicle for a specified period of time.~~ Designated routes and areas under
26 alternative D are shown on ^F figure 1 and details of the management actions under this alternative are
27 described in ^F Table 1. 

29 **ALTERNATIVE F: NEGOTIATED RULEMAKING CONSENSUS**

30 To be inserted when available.

1 HOW ALTERNATIVES MEET OBJECTIVES

2 As stated in the “Purpose of and Need for Action” chapter, all action alternatives selected for analysis
3 must meet all objectives to a large degree. The action alternatives must also address the stated purpose of
4 taking action and resolve the need for action; therefore, the alternatives were individually assessed in light
5 of how well they would meet the objectives for this plan and environmental impact statement, which are
6 stated in chapter 1. Alternatives that did not meet the objectives were not analyzed further (see the
7 “Alternatives Eliminated from Further Consideration” section in this chapter).

8 Table 3 compares how each of the alternatives described in this chapter would meet the plan objectives.
9 “Chapter 4: Environmental Consequences” describes the effects of each alternative on each impact topic.
10 These impacts are summarized in table 4.

11 ALTERNATIVE ELEMENTS CONSIDERED BUT DISMISSED FROM FURTHER 12 CONSIDERATION

13 USE AREAS, ORV MANAGEMENT, AND VISITOR USE

14 Consider Pea Island National Wildlife Refuge When Considering Use Areas

15 Many commenters suggested that Pea Island National Wildlife Refuge should be considered when
16 developing this plan/EIS. Suggestions included considering Pea Island as a vehicle-free area, and
17 conversely, as a potential area where ORVs could be used where there is not a resource conflict.

18 Commenters felt that Pea Island National Wildlife Refuge should be considered as part of the baseline for
19 analysis, and should be considered when providing appropriate visitor use. Although the 5,880-acre Pea
20 Island National Wildlife Refuge is located at the northern end of Hatteras Island, and is ~~part~~ ^{within the boundary} of the
21 Seashore, the refuge is administered by the USFWS. Because it is not administered by the Seashore, the
22 Seashore cannot direct the visitor uses ~~at~~ Pea Island National Wildlife Refuge. USFWS is responsible for
23 making decisions about ORV and pedestrian access. Currently, the USFWS has determined that ORV use
24 would not be appropriate or compatible with the mission of the refuge.

25 Require Other Jurisdictions Change Their Infrastructures and Regulations

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

- 27 • Provide NPS parking and beach access points through ^{out} Dare County villages.
- 28 • Lower the speed limit on NC-12 between villages to 45 miles per hour during peak use times to
29 reduce the danger from vehicles with “aired-down” tires.

- 1 • Limit the use of bright lighting in oceanfront houses.
- 2 • Create a sound ordinance.
- 3 • Create guidelines for oceanfront structures, such as setbacks from the high tide mark and
- 4 rebuilding guidelines, to address damage to existing oceanfront structures.

5 These suggestions would require action by the county, ~~villages~~, or state. Lowering the speed limit ~~and~~
 6 ~~removing the helmet law~~ would require a change in current state regulations. The county would be
 7 responsible for changing building codes or adding more parking and access points. Creating a sound
 8 ordinance or occupancy restrictions for rental homes would require action of the ~~individual villages~~ or the
 9 county. The NPS does not have the authority to require these jurisdictions to undertake such action.
 10 However, the NPS has worked with the communities within the Seashore on many issues, including those
 11 related to ORV management, and under all alternatives would continue to work cooperatively ~~towards~~ *to encourage*
 12 actions such as turtle friendly lighting and education. Although the NPS cannot require Dare County to
 13 provide more parking or beach access, some of the alternatives evaluated in this plan/EIS address
 14 additional parking areas. Creating a sound ordinance within the Seashore may be feasible. ?

15 **Provide All-Terrain Vehicle Access and Remove the Helmet Requirement**

16 Commenters suggested that all-terrain vehicles (ATVs) should be allowed on the beach and that ATV
 17 users should not be required to use helmets. The NPS only allows “street-legal” vehicles on the beach
 18 under the North Carolina Motor Vehicle Code, which does not include ATVs. Alternatives in this
 19 plan/EIS do not include changing the requirement for “street legal” vehicles. The Seashore considers
 20 ATV use at the Seashore to be incompatible with visitor use and resource protection goals and objectives
 21 due to the damage they could cause. Further, “street-legal” vehicles are used for transportation, but the
 22 majority of ATVs are used for ~~purely~~ *primarily* recreational purposes ~~and do not~~ *but ~~serve~~ may secondarily* serve a transportation function.
 23 Since ATVs would not be permitted, the issue of requiring helmets is not applicable.

24 **Issue Permits to Users ~~Instead of~~ ~~Vehicles~~**

25 For the alternatives that include a permit system, permits would be ~~issued to the vehicle, not the person.~~ *assigned to the registered owner of*
 26 ~~vehicle permit can be displayed~~ *affixed to* on the vehicle, where it would be easily visible by law enforcement.
 27 Verifying that people have permits *that are invariable between multiple vehicles* would require substantially more effort by law enforcement staff, who
 28 would have to stop each visitor and ask to see the permit. Therefore, to assist in enforcing the permit
 29 system, permits are ~~issued to~~ *assigned to the registered owner of ~~the~~ and affixed to the* vehicles under all alternatives.

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

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

6 **Provide Round-the-Clock Enforcement**

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

12 **Give Preferred Status to Human Visitors**

13 Commenters suggested that the NPS should give preferred status to human visitors, and not include
 14 restrictions on human use to benefit various natural resources. The NPS has a dual mission to protect park
 15 natural and cultural resources and to provide for visitor enjoyment. The courts have held that in the case
 16 of conflict, resource conservation must be predominant (refer to “Guiding Laws, Regulations, and
 17 Policies” in chapter 1). The Seashore believes that it can both conserve Seashore resources and provide
 18 for visitor enjoyment.

manage ORV use in a way
that

19 **Species Protection**

20 ***Implement an Escort Program***

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

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

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

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

9 Commenters suggested moving hatched bird chicks from the beach to other areas where they would be
 10 protected. This conflicts with NPS responsibilities under the *Endangered Species Act, Migratory Bird*
 11 *Treaty Act, NPS Organic Act* (as described in the “Turtle Hatcheries” section below), and the NPS
 12 *Management Policies 2006*. Further, moving chicks is not feasible because chicks must remain with their
 13 parents ~~until they fledge~~ ^{until they fledge} for foraging and protection. ~~Relocating~~ ^{Relocating} chicks would not meet the plan/EIS
 14 objective of minimizing adverse impacts to threatened, endangered, and other protected species.

15 ***Provide Captive Rearing of Piping Plovers and Turtles***

16 Commenters suggested rearing endangered species in captivity. Wildlife managers use captive
 17 breeding/rearing of threatened or endangered species to: (1) provide an opportunity to restore populations
 18 where direct translocation may risk the persistence of the donor population; or (2) as a last resort in cases
 19 where most or all of the entire remaining wild population are brought to a captive breeding facility with
 20 the goal of avoiding extinction and breeding enough individuals for eventual reintroduction into the wild
 21 (e.g., California condor) (Gilpin and Soule 1986). The Kemp’s ridley sea turtle hatchery at Padre Island
 22 National Seashore is an example of a last-resort captive rearing facility used to restore a population. None
 23 of these situations applies to piping plover or nesting loggerhead, leatherback, or green sea turtles at Cape
 24 Hatteras National Seashore, so this suggestion was not included in any of the alternatives.

25 ***Relocate Bird and Turtle Nests***

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

29 **Birds**

30 Some species of birds, such as the burrowing owl, adapt well to nest relocation, but others do not. Birds
 31 that do not relocate well typically are those that demonstrate higher levels of nest abandonment. Nest

1 abandonment by piping plovers and American oystercatchers are documented sources of nest failure on
2 Cape Hatteras. Therefore, relocating nests would likely result in increased nest abandonment and failure.
3 In addition, moving nests into one area would not be feasible. Plovers and oystercatchers are solitary
4 rather than colonial nesters (i.e., they nest away from others of their species.) Plovers sometimes nest near
5 tern colonies to benefit from the aggressive behavior of terns protecting their colonies; however, they
6 typically do not nest with other plovers. Since the purpose of the strategy is species protection, and
7 moving nests would reduce these species' ability to reproduce, moving nests was eliminated from further
8 analysis.

9 **Turtles**

10 **Individual Nest Relocation.** Turtles do not face the same nest abandonment issues as those described for
11 birds. Parental investment in the young ends with the laying and burying of eggs. However, the eggs,
12 subsequent hatchlings, and overall species may face additional problems related to nest relocation.
13 Studies indicate that the determination of the hatchling sex ratio depends on the temperature at which the
14 eggs incubate. Changes in these temperatures due to moving eggs may result in changes to the sex ratio,
15 having implications for the species as a whole. In addition, handling eggs can result in increased hatch
16 failure. When relocating nests, there is always a risk of disrupting the membranes inside the egg, which
17 can kill the embryo. Typically nest relocation is seen as part of an attempt to keep the species from going
18 extinct, whereas allowing for natural breeding and nesting is the ideal option whenever available.
19 Currently in North Carolina, the state permits sea turtle nest relocations for research or when there is an
20 imminent threat and potential loss of the nest due to erosion or frequent flooding, but not to accommodate
21 recreational uses. Nests in some states may be moved to avoid damage from beach nourishment or in
22 highly developed urban areas (e.g., along some urban areas of Florida's Atlantic coast). Consequently,
23 routine relocation of all nests to allow for recreational access is not considered in this plan/EIS. However,
24 the NPS would continue its current practice of coordinating with the State of North Carolina to consider
25 relocating an individual facing inundation or other adverse factors.

26 **Turtle Hatcheries.** Moving all nests or all relocated nests into one hatchery area is not fully analyzed as
27 part of any alternative. Sea turtle nests may be moved to a guarded hatchery to provide needed protection
28 from poaching in developing countries where participation in hatchery operations may be used as an eco-
29 tourism opportunity. Some county or privately owned beaches in Florida or Georgia may use hatcheries
30 for sea turtle eggs in some circumstances, such as to allow beach nourishment. However, county
31 responsibilities for endangered or threatened species differ from federal and particularly from NPS
32 responsibilities for these protected species. As a federal agency, the NPS has responsibilities under the
33 *Endangered Species Act* to protect the ecosystem as well as the species that depend on it. The purpose of

1 the *Endangered Species Act* is to “provide a means whereby the ecosystems upon which endangered
2 species and threatened species depend may be conserved...” (Sec. 2(b)). Protecting the ecosystem is also
3 necessary to meet the requirements of the *NPS Organic Act*, which mandates the NPS to conserve
4 Seashore wildlife (refer to “Guiding Laws, Regulations, and Policies” in chapter 1).

5 Loggerhead, leatherback, and green sea turtles are all currently listed pursuant to the *Endangered Species*
6 *Act*. Any actions that would ~~increase the likelihood of~~ ^{cause declines in the species} reduced productivity and ~~species decline~~ would not
7 be consistent with the purpose of the Act. Therefore, use of hatcheries was not considered in this
8 plan/EIS.

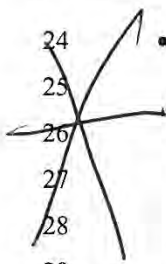
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9 **Open Closed Areas After Breeding Season Is Over**

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

18 **Create New Habitat**

19 Commenters suggested various ways that habitat could be created to provide alternative areas for bird
20 species at the Seashore. Some of these suggestions included letting ORVs drive on the vegetation to
21 create habitat or physically creating habitat using dredge material in the sound or by other means. These
22 suggestions were considered by the Seashore but are not carried forward in this plan/EIS for the following
23 reasons:



24 • **Allowing visitors in ORVs to ~~create~~ ^{enhance} habitat by driving over vegetated areas.** Studies on
25 habitat creation have been considered by the NPS, and the Seashore recognizes that this could be
26 a feasible management measure for species. However, such creation of habitat would need to
27 occur in a controlled manner and would only be carried out by professionals trained in such
28 projects. Therefore, allowing visitors in ORVs to create habitat was not considered in this
29 plan/EIS.

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30 • **Creation of habitat through physical alteration or the creation of dredge islands.** The NPS
31 considered creating habitat through various methods. Based on the experience of staff at the

1 North Carolina Wildlife Resources Commission, habitat creation projects tend to be short-lived
 2 and labor intensive. Based on experience with hand pulling, herbicides, fires, and bulldozing, it
 3 was found that most of these techniques are effective for only one season before the vegetation
 4 returns. Covering areas with new dredge material has been shown to last longer, with vegetation
 5 returning after four to seven years (Cameron 2007). Although the NPS recognizes that creation
 6 of habitat may be viable, at this time more research needed to determine the most effective
 7 method for this process. If this method is employed, it would occur outside the scope of the
 8 plan/EIS and therefore was not included in the alternatives.

9 **Fence Chicks Away from the ORV Corridor**

10 Commenters suggested using ~~fencing~~ ^{barrier fencing, rather symbolic fencing,} to keep chicks away from the ORV corridors. Unfledged chicks of
 11 any species need access to the intertidal zone and moist substrate habitat for foraging. Fencing chicks
 12 away from these areas would essentially prevent them from eating; therefore, this was not considered a
 13 reasonable alternative.

14 **Do Not Provide Protection to the Seabeach Amaranth**

15 Commenters suggested not providing protection to the seabeach amaranth because it is a farmed plant.
 16 However, the seabeach amaranth is protected as a federally listed threatened plant species. Under the
 17 *Endangered Species Act*, federal agencies are required to use their authorities in furtherance of the
 18 purposes of the *Endangered Species Act* by carrying out programs for the conservation of endangered and
 19 threatened species and to ensure that any agency action authorized, funded, or carried out by the agency is
 20 not likely to jeopardize the continued existence of any endangered species or threatened species or result
 21 in the destruction or adverse modification of designated critical habitat. Further, NPS *Management*
 22 *Policies 2006* state that, "The Service will survey for, protect, and strive to recover all species native to
 23 national park system units that are listed under the Endangered Species Act" (NPS 2006: 45). Not
 24 providing protection to a federally listed threatened species would be out of compliance with the
 25 *Endangered Species Act* and contrary to the NPS *Management Policies 2006*, and was therefore not
 26 included in the alternatives of this plan/EIS.

27 **Give Special Consideration Only to Flora and Fauna Listed as Threatened and Endangered**

28 Commenters suggested that only those species listed as threatened or endangered under the federal
 29 *Endangered Species Act* should be considered in this plan. As stated above, the NPS has legal
 30 responsibilities under the *Endangered Species Act* and its own policies to protect threatened and
 31 endangered species. Further, a number of laws, regulations, and policies, in addition to the *Endangered*

1 *Species Act*, guide species management at the Seashore, including the *NPS Organic Act*, the *Migratory*
 2 *Bird Treaty Act*, NPS regulations and policies, Executive Order 13186: *Responsibilities of Federal*
 3 *Agencies to Protect Migratory Birds*, and others (see chapter 1). The combination of laws, regulations,
 4 and policies included in this section of the plan/EIS create the framework in which the alternatives are
 5 developed, which includes the need to manage species that are considered to be of special concern, such
 6 as state-listed species, or those addressed by the *Migratory Bird Treaty Act*. Because of these
 7 responsibilities, only considering flora and fauna listed as federally threatened or endangered was not
 8 included in the plan/EIS alternatives.

↓ quote Mgt. Policy
Verbatim

9 **Other Issues**

10 ***Rebuild the Dunes***

11 One commenter suggested the NPS rebuild the dunes in front of NC-12. While the NPS had engaged in
 12 addressing dune rebuilding in the past, such as ~~around Ramp 1 and 2~~ to protect NPS structures, this ^{in Beaufort Island}
 13 activity is beyond the scope of this plan/EIS and could be addressed later in the *General Management*
 14 *Plan* process that the Seashore will undertake in the future.

15 ***Prohibit Gill Net Fishing***

16 Some commenters asked that the Seashore prohibit gill net fishing. Fishing activities, both commercial
 17 and recreational, at the Seashore are regulated by the State of North Carolina through the issuance of a
 18 Recreational Commercial Gear License. This license specifies the type of gear that commercial fishermen
 19 are allowed to use, which includes the use of gill nets that conform to requirements for mesh size,
 20 yardage, and marking (NCMF 2007). The Seashore has the authority to manage where ^{access to} commercial
 21 fishing occurs ^{on park lands}, but the manner in which it occurs is regulated by the State of North Carolina. Since the
 22 use of gill nets for commercial fishing is outside the jurisdiction of the NPS, it was not included as an
 23 element of the ORV plan/EIS.

24 ***Provide an Area for Off-leash Dogs***

25 Commenters suggested that dogs be allowed off-leash at the Seashore, either seasonally, in certain areas
 26 of the Seashore under voice control, or through the creation of a dog training area. Currently, pets at the
 27 Seashore are regulated under 36 CFR 2.13, which ^{also} prohibits pet owners from “failing to crate, cage,
 28 restrain on a leash which shall not exceed six feet in length, or otherwise physically confine a pet at all
 29 times.” ^{and applies to all units of the National Park System.} Creation of off-leash areas would not be consistent with 36 CFR 2.13 and would require
 30 promulgation of a special regulation allowing off-leash dog use, which is outside the scope of the ORV
 31 plan/EIS. Therefore, this element was not carried forward in any alternative.

1 **CONSISTENCY WITH THE PURPOSES OF THE NATIONAL ENVIRONMENTAL**
 2 **POLICY ACT**

3 Section to be completed after second draft comments

4 The National Environmental Policy Act requires an analysis of how each alternative meets or achieves the
 5 purposes of the act, as stated in Section 101(b). Each alternative analyzed in a NEPA document must be
 6 assessed as to how it meets the following purposes:

- 7 (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding
 8 generations;
- 9 (2) assure for all Americans safe, healthful, productive, and esthetically and culturally
 10 pleasing surroundings;
- 11 (3) attain the widest range of beneficial uses of the environment without degradation, risk of
 12 health or safety, or other undesirable and unintended consequences;
- 13 (4) preserve important historic, cultural, and natural aspects of our national heritage and
 14 maintain, wherever possible, an environment that supports diversity and variety of
 15 individual choice;
- 16 (5) achieve a balance between population and resource use that will permit high standards of
 17 living and a wide sharing of life's amenities; and
- 18 (6) enhance the quality of renewable resources and approach the maximum attainable
 19 recycling of depletable resources.

20 CEQ has promulgated regulations for federal agencies' implementation of NEPA (40 CFR Parts 1500–
 21 1508). Section 1500.2 states that federal agencies shall, to the fullest extent possible, interpret and
 22 administer the policies, regulations, and public laws of the United States in accordance with the policies
 23 set forth in the act [sections 101(b) and 102(1)]; therefore, other acts and NPS policies are referenced as
 24 applicable in the following discussion.

- 25 • Alternative A: No Action – Continuation of Management Under the Interim Protected Species
 26 Management Strategy
- 27 • Alternative B: No Action – Continuation of Terms of Consent Decree Signed April 30, 2008
- 28 • Alternative C: Seasonal Management
- 29 • Alternative D: Increased Predictability and Simplified Management
- 30 • Alternative E: Variable Access and Maximum Management
- 31 • Alternative F: Negotiated Rulemaking Consensus

TABLE 1. ALTERNATIVE ELEMENTS SUMMARIES

(Attached. To be inserted with next draft)

TABLE 2. ROUTES AND AREAS

(Attached. To be inserted with next draft)

FIGURE 1. ALTERNATIVES MAPS

(Attached. To be inserted with next draft)

TABLE 3. ANALYSIS OF HOW ALTERNATIVES MEET OBJECTIVES

| Objectives | Alternative A: No Action – Continuation of Management Under the Interim Protected Species Management Strategy | Alternative B: No Action – Continuation of Terms of Consent Decree Signed April 30, 2008 | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Route Management | Alternative F: Negotiated Rulemaking Consensus |
|--|---|---|--|---|---|---|
| Management Methodology | | | | | | |
| Identify criteria to designate ORV use areas and routes. | | | | | | |
| Establish ORV management practices and procedures that have the ability to adapt in response to changes in the Seashore's dynamic physical and biological environment. | | | | | | |
| Establish a civic engagement component for ORV management. | | | | | | |
| Establish procedures for prompt and efficient public notification of beach access status including any temporary ORV use restrictions for such things as ramp maintenance, resource and public safety closures, storm events, etc. | | | | | | |

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| Build stewardship through public awareness and understanding of NPS resource management and visitor use policies and responsibilities as they pertain to the Seashore and ORV management. | | | | | | | | | |
| Natural Physical Resources | | | | | | | | | |
| Minimize impacts from ORV use to soils and topographic features, for example, dunes, ocean beach, wetlands, tidal flats, and other features. | | | | | | | | | |
| Threatened, Endangered, and Other Protected Species | | | | | | | | | |
| Provide protection for threatened, endangered, and other protected species (e.g., state-listed species) and their habitats, and minimize impacts related to ORV and other uses as required by laws and policies, such as the Endangered Species Act, the MBTA, and NPS laws and management policies. | | | | | | | | | |
| Vegetation | | | | | | | | | |
| Minimize impacts to native plant species related to ORV use | | | | | | | | | |
| Other Wildlife and Wildlife Habitat | | | | | | | | | |
| Minimize impacts to wildlife species and their habitats related to ORV use. | | | | | | | | | |
| Cultural Resources | | | | | | | | | |
| Protect cultural resources, such as shipwrecks, archeological sites, and cultural landscapes, from impacts related to ORV use. | | | | | | | | | |
| Visitor Use and Experience | | | | | | | | | |
| Ensure that ORV operators are informed about the rules and regulations regarding ORV use at the Seashore. | | | | | | | | | |
| Visitor Safety | | | | | | | | | |

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| Ensure that ORV management promotes the safety of all visitors. | | | | | | | | | |
| Park Operations | | | | | | | | | |
| Identify operational needs and costs to fully implement an ORV management plan. | | | | | | | | | |
| Identify potential sources of funding necessary to implement an ORV management plan. | | | | | | | | | |
| Provide consistent guidelines, according to site conditions, for ORV routes, ramps, and signage. | | | | | | | | | |

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2 TABLE 4. ENVIRONMENTAL IMPACT SUMMARY BY ALTERNATIVE

| Impact Topic | Alternative A: No Action – Continuation of Management Under the Interim Protected Species Management Strategy | Alternative B: No Action – Continuation of Terms of Consent Decree Signed April 30, 2008 | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Route Management | Alternative F: Negotiated Rulemaking Consensus |
|--|---|--|------------------------------------|---|---|--|
| Floodplains | | | | | | |
| Wetlands | | | | | | |
| Wildlife and Habitat | | | | | | |
| Rare, Unique, Threatened, and Endangered Species | | | | | | |

| | | | | | | | | | |
|------------------------------------|--|--|--|--|--|--|--|--|--|
| Soundscapes | | | | | | | | | |
| Visitor Use and Experience | | | | | | | | | |
| Socioeconomics | | | | | | | | | |
| Seashore Operations and Management | | | | | | | | | |

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2 **ENVIRONMENTALLY PREFERRED ALTERNATIVE**

3 TBD

4 **NATIONAL PARK SERVICE PREFERRED ALTERNATIVE**

5 TBD

CAHA ORV Routes & Areas Table 11/05/08

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*Need to include Chap 2
Res. Protection Measures
table*

| Oceanside Location | Mileage | All ORV use areas subject to temporary resource closures | | | |
|--|---------|---|--|------------------------|--|
| | | Alternative C | Alternative D | Alternative E | |
| Alts A & B - No Action | | ORV Use Areas (X = No ORV use permitted, YR = ORV permitted Year Round) | | | |
| Ramp 1 to ¼ mile north of Coquina Beach | 1.0 | OPEN YR (currently safety closure) | OPEN March 15 - October 14 | X | Expand parking at Ramp 1 to 25 spaces X |
| ¼ mile north of Coquina Beach to 1.0 mile south of Coquina beach | 1.2 | X (South of Ramp 2 @ Coquina Beach OPEN YR) | X | X | Expand parking to 250 spaces X |
| 1 mile south of Coquina to Ramp 4 (Construct new Ramp 3 north of campground, Location TBD, Ramp 4 to be closed when Bomber Bridge construction occurs) | 1.8 | OPEN YR | (Construct new Ramp 3 approximately 1 mile north of campground, location TBD, Ramp 4 to be closed when Bomber Bridge construction occurs, Restore old Ramp 4. Provide 25-space day use parking and trailhead near Oregon Inlet Campground) | Same as alternative C. | Same as alternative C. OPEN September 1 - March 14 |
| Ramp 4 to end of Bodie Island Spit (Resource Area) | 2.1 | OPEN YR | Establish pedestrian route from new parking area near Oregon Inlet Campground. Pedestrian access to spit allowed along designated access corridor, subject to site specific resource closures, during ORV closure. (SM 2) | X (SM 1) | Establish pedestrian route from new parking (25 spaces) near Oregon Inlet Campground. ORV pass-through corridor allowed during incubation if prescribed buffers can be met. After chicks hatch, pedestrian access to spit allowed along designated access corridor, subject to site specific resource closures. NPS would allow water taxi service to spit from Oregon Inlet Fishing Center, subject to designated landing zone and site specific resource closures. OPEN September 1 - March 14 OPEN (restricted): Mar 15 - Aug 31 *See specific plan for Bodie Island Spit access during breeding season. (SM2) |
| Rodanthe - Waves - Salvo to Ramp 23 (includes Tr-Village beaches) | 5.3 | OPEN September 16 - May 14 | Expand parking to 50 spaces at Ramp 23. X | X | Expand parking to 50 spaces at Ramp 23. OPEN November 1 - March 31 |
| Ramp 23 - Ramp 27 | 4.4 | OPEN YR | OPEN YR | OPEN YR | Expand parking area with 50 spaces. OPEN YR |

CAHA ORV Routes & Areas Table 11/05/08

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| Oceanside Location | Mileage | ORV Use Areas (X = No ORV use permitted, YR = ORV permitted Year Round) All ORV use areas subject to temporary resource closures | | |
|---|---------|--|--|---|
| | | Alternative C No Action | Alternative D | Alternative E |
| Ramp 27 – Ramp 30 (Resource Area) | 2.1 | OPEN YR October 15 – March 14 (SM1) | X (SM1) | X (SM1) |
| Ramp 30 – Ramp 32.5 | 2.8 | OPEN YR Establish new Ramp @ 32.5 with 50 parking spaces. | OPEN YR Establish new Ramp @ 32.5 | Expand parking to 25 spaces at Ramp 30 Establish new Ramp @ 32.5 with 50 parking spaces. |
| Ramp 32.5 – Ramp 34 (Resource Area) | 1.5 | OPEN YR October 15 – March 14 (SM1) | X (SM1) | OPEN YR Sept 1 – March 14 (SM1) |
| Ramp 34 – Ramp 38 (includes Avon Village Beach) | 3.9 | OPEN YR October 15 – March 14 | X | OPEN November 1 – March 31 Expand parking to 50 spaces at Ramp 34. |
| Ramp 38 to approx. 2.0 miles south | 2.0 | OPEN YR | OPEN YR | OPEN YR Expand parking to 50 spaces at Ramp 38. |
| Approximately 2.0 miles south of Ramp 38 to Buxton line (Resource Area) | 1.7 | OPEN YR Current 3.8-mile safety closure from 1.8 miles south of Ramp 38 to 0.4 mile north of Ramp 43) | OPEN October 15 – March 14 (SM1) | X (SM1) |
| Buxton village beach to .4-mile north of Ramp 43 | 1.9 | OPEN September 16 – May 14 (current, 7-mile safety and 1.2-mile admin closure) | X (NPS or Dare County) Establish parking with 100 spaces at old Coast Guard Station site. | X Same as alternative C. |
| 0.4 mile north of Ramp 43 to Ramp 43 | 0.4 | OPEN September 16 – May 14 | Expand parking to 25 spaces at Ramp 43. | X Open to ORV only when east side of Cape Point is Closed Expand parking to 25 spaces at Ramp 43. |
| Ramp 43 – Ramp 44 | 0.4 | OPEN YR | OPEN YR | OPEN YR |

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CAHA ORV Routes & Areas Table 11/05/08

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| Oceanside Location | Mileage | Alls A & B- No Action | | | Alternative C | Alternative D | Alternative E |
|---|---------|---|---|---|---------------|--|---------------|
| | | ORV Use Areas | (X = No ORV use permitted, YR = ORV permitted Year Round) | All ORV use areas subject to temporary resource closures | | | |
| Ramp 44 – Cape Point – approx. 0.2 miles west of the hook (Resource Area) | 1.2 | OPEN YR | OPEN YR | October 15 – March 14 Pedestrian access permitted along ocean shoreline, subject to site specific resource closures during breeding season. (SM2) | X (SM1) | OPEN (unrestricted): Sept 1- Mar 14. OPEN (restricted*): Mar 15 – Aug 31. See specific plan for Cape Point access along eastern ocean shoreline during breeding season. (SM2) | |
| Cape Point 0.2 mile west of the hook – Ramp 45 (Resource Area) | 1.2 | OPEN YR | OPEN YR | OPEN October 15 – March 14 (SM1) | X (SM1) | OPEN September 1- March 14 (SM1) | |
| Ramp 45 to (new) Ramp 47 (Resource Area) | 1.7 | OPEN YR | OPEN YR | OPEN October 1 – March 14 Extend intertidal road and establish new Ramp 47 (SM1) | X (SM1) | OPEN September 1 – March 14. Extend intertidal road & establish new Ramp 47 (SM1) | |
| (new) Ramp 47 to Ramp 49 | 1.9 | OPEN YR | OPEN YR | OPEN YR | OPEN YR | OPEN YR, plus Extend intertidal road west of Ramp 45 to Ramp 49. Establish new Ramp 47 off of intertidal road | |
| Ramp 49 to East Frisco boundary | 1.0 | OPEN YR | OPEN YR | OPEN YR | OPEN YR | OPEN YR | |
| East Frisco boundary to Frisco Pier (includes majority of Frisco Village Beach) | 1.0 | OPEN September 16 – May 14 (current safety closure) | OPEN October 15 - March 14 | OPEN October 15 - March 14 | X | OPEN November 1 – March 31 Expand parking at Day Use Area to 100 spaces | |
| Frisco Pier to Ramp 55 (includes portion of Frisco Village Beach and all of Hatteras Village Beach) | 3.8 | OPEN YR (current safety closure) | OPEN October 15 - March 14 | OPEN October 15 - March 14 | X | OPEN November 1 – March 31 | |
| Ramp 55 along ocean beach to southern exit of Pole Road | 2.2 | OPEN YR | OPEN YR | OPEN YR Expand parking to 50 spaces at Ramp 55. | OPEN YR | OPEN YR Expand parking to 50 spaces at Ramp 55. | |

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CAHA ORV Routes & Areas Table 11/05/08

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| Oceanside Location | Mileage | Alts A & B- No Action | | Alternative C | | Alternative D | | Alternative E | |
|--|---------|-------------------------------------|---|---|---------|---|---|---|---|
| | | ORV Use Areas | (X = No ORV use permitted, YR = ORV permitted Year Round) | All ORV use areas subject to temporary resource closures | | | | | |
| Pole Road from NC-12 to Spur Road | 2.3 | OPEN YR | OPEN YR | OPEN YR | OPEN YR | OPEN YR | OPEN YR | OPEN YR | OPEN YR |
| Spur Road to Hatteras Inlet (soundside) | 0.4 | OPEN YR | OPEN YR | OPEN YR Pedestrian access to the "rip" permitted from soundside access during breeding season, subject to site specific resource closures. | X | Same as Alternative C | Same as Alternative C | Same as Alternative C | Same as Alternative C |
| Ocean shoreline from southern exit of Pole Road south to the beginning of sound side (Resource Area) | 0.8 | OPEN YR | OPEN YR | OPEN October 15 – March 14 (SM1) | X (SM1) | OPEN September 1 – March 14 (SM1) | OPEN September 1 – March 14 (SM1) | OPEN September 1 – March 14 (SM1) | OPEN September 1 – March 14 (SM1) |
| North Ocracoke Spit to Ramp 59 (Resource Area) | 1.4 | OPEN YR | OPEN YR | OPEN October 15 – March 14 Expand existing parking area at Ramp 59 to 25 spaces (SM1) | X (SM1) | Expand existing parking area at Ramp 59 to 25 spaces. Provide pedestrian access along designated corridor(s), subject to site specific resource closures during breeding season. Develop pedestrian boardwalk access from ferry terminal parking. (SM2) | Expand existing parking area at Ramp 59 to 25 spaces. Provide pedestrian access along designated corridor(s), subject to site specific resource closures during breeding season. Develop pedestrian boardwalk access from ferry terminal parking. (SM2) | Expand existing parking area at Ramp 59 to 25 spaces. Provide pedestrian access along designated corridor(s), subject to site specific resource closures during breeding season. Develop pedestrian boardwalk access from ferry terminal parking. (SM2) | Expand existing parking area at Ramp 59 to 25 spaces. Provide pedestrian access along designated corridor(s), subject to site specific resource closures during breeding season. Develop pedestrian boardwalk access from ferry terminal parking. (SM2) |
| Ramp 59 to (new) Ramp 64 @ 1.0 mile north of Pony Pens Area | 4.7 | OPEN YR | OPEN YR | OPEN YR | OPEN YR | OPEN YR | OPEN YR | OPEN YR | OPEN YR |
| (new) Ramp 64 @ 1.0 mile north of Pony Pen to 1.0 mile north of Ramp 67 | 2.1 | OPEN YR (current safety closure) | OPEN YR | X Establish parking with 25 spaces at Ramp 64. Expand parking at Pony Pen to 25 spaces. | X | Expand parking at Pony Pen to 25 spaces. | Expand parking at Pony Pen to 25 spaces. | Expand parking at Pony Pen to 25 spaces. | Expand parking at Pony Pen to 25 spaces. |
| 1.0 mile north of Ramp 67 to Ocracoke Campground | 1.8 | OPEN September 16 – May 14 | OPEN September 16 – May 14 | OPEN October 15 – March 14 | OPEN YR | OPEN November 1 – March 31 | OPEN November 1 – March 31 | OPEN November 1 – March 31 | OPEN November 1 – March 31 |
| Ocracoke Campground to Ramp 68 | 0.4 | OPEN September 16 – May 14 | OPEN September 16 – May 14 | OPEN When campground closed | X | OPEN November 1 – March 31 | OPEN November 1 – March 31 | OPEN November 1 – March 31 | OPEN November 1 – March 31 |
| Ramp 68 to 0.5 mile south of Ramp 68 | 0.5 | OPEN September 16 – May 14 | OPEN September 16 – May 14 | OPEN When campground closed | X | Maintain existing parking at Ramp 68 | Maintain existing parking at Ramp 68 | Maintain existing parking at Ramp 68 | Maintain existing parking at Ramp 68 |

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CAHA ORV Routes & Areas Table 11/05/08

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| | | | | | | |
|--|-----|----------------------------------|--|---|--|---|
| 0.5 mile south Ramp 68 to 1.2 mile north of Ramp 70 (Resource Area) | 1.0 | OPEN September 16 – May 14 | OPEN October 15 – March 14 (SM1) | X (SM1) | X (SM1) | |
| 1.2 mile north of Ramp 70 to Ramp 70 | 1.2 | OPEN September 16 – May 14 | Expand parking at Day Use area to 150 spaces X | Expand parking at Day Use area to 150 spaces X | Expand parking at Day Use area to 150 spaces X | |
| Ramp 70 – 0.5 mile south of Ramp 72 | 2.7 | OPEN YR | OPEN YR | OPEN YR | OPEN YR | |
| 0.5 mile south of Ramp 72 - South Point (Resource Area) | 2.6 | OPEN YR | OPEN October 15 – March 14 Pedestrian access to South Point allowed along designated access corridor, subject to site specific resource closures, during ORV closure, (SM 2) | X (SM1) | OPEN (unrestricted): Sept 1- Mar14. OPEN (restricted): Mar 15 – Aug 31. *See specific plan for South Point access during breeding season. (SM2) | Where feasible, designate an ORV pass through corridor between foraging and nesting areas during breeding and incubation period. NPS would also allow water taxi service to split from Silver Lake, subject to designated landing zone and site specific resource closures. |

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Resource Areas: (SM1) Pedestrian access prohibited March 15 – August 31 (breeding season).
(SM2) Pedestrian access and boat landing permitted as indicated, subject to site specific resource closures.

| Approximate Mileage Summary | A & B | C | D | E |
|-----------------------------|--------------|-------------|-------------|-------------|
| Closed to ORV (X) | varies | 11.7 | 40.4 | 12.4 |
| Seasonal Use | varies | 30.1 | 0 | 26.5 |
| Open YR | varies | 26.6 | 28.0 | 29.5 |
| Total | 66-68 | 68.4 | 68.4 | 68.4 |

ORV Management Alternatives Matrix 11/05/08

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Cape Hatteras National Seashore

ORV Management Plan/Environmental Impact Statement

| Management Activity | Alternative A—No Action, Continuation of Management under IPSMS | Alternative B – No Action, Continuation of Management Under Consent Decree | Alternative C | Alternative D | Alternative E | | | |
|--|---|--|--|--|-----------------------|--|---|---|
| ORV Access | <p>General</p> <p>Visitors accessing the Seashore by ORV must use only designated beach access ramps and soundside access roads to enter designated ORV routes.</p> | Same as alternative A | Same as alternative A | Same as alternative A | Same as alternative A | | | |
| | <p>Oceanside Access</p> <p>ORV access is provided via 18 oceanside ramps and access points located off NC-12.</p> <p>Ramps are numbered and identified on the Seashore's ORV route map as official vehicle access routes.</p> <p>Seashore staff maintains ramps and signage.</p> | | | | | <p>Oceanside Ramps</p> <p>[See ORV Use Areas Table for details.]</p> | <p>Oceanside Ramps</p> <p>[See ORV Use Areas Table for details.]</p> | <p>Oceanside Ramps</p> <p>[See ORV Use Areas Table for details.]</p> |
| | <p>Soundside Access</p> <p>ORV access is provided via 21 soundside access points located off NC-12.</p> <p>Seashore staff maintains ramps and signage.</p> | | | | | <p>Soundside Ramps</p> <p>Existing soundside ramps would remain open.</p> <p>Signage/posts would be installed at the primitive parking areas and boat launch areas to prevent damage to vegetation and other soundside resources.</p> | <p>Soundside Ramps</p> <p>Same as alternative A.</p> | <p>Soundside Ramps</p> <p>Soundside ramps to designated boat launch areas and Pole Road access to Cable Crossing and Spur Road would remain open. The remaining soundside ramps would be closed to ORV use and small parking areas would be constructed to provide pedestrian access to the water.</p> <p>Signage/posts would be installed at the parking areas and boat launch areas to prevent damage to vegetation and other soundside resources.</p> |
| <p>Interdunal Roads</p> <p>One lane, interdunal routes have been designated as follows:</p> | Same as alternative A | <p>Interdunal Roads</p> <p>Same as alternative A, plus:</p> <ul style="list-style-type: none"> Existing interdunal roads would be maintained as needed to provide access to ORV areas. Pull-outs or road widening would be provided where appropriate to provide safe passage. | <p>Interdunal Roads</p> <p>Same as alternative A.</p> | <p>Interdunal Roads</p> <p>Same as alternative C, plus:</p> | | | | |

ORV Management Alternatives Matrix 11/05/08

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|--|--|---|---|---|---|
| <p><i>Bodie Island Ranger District</i></p> <ul style="list-style-type: none"> ▪ None. <p><i>Hatteras Island Ranger District</i></p> <ul style="list-style-type: none"> ▪ Cape Point between Ramp 44 to Ramp 45 ▪ Hatteras Inlet from Ramp 55 to the Inlet (includes Pole Road and Spur Road). <p><i>Ocracoke Island Ranger District</i></p> <ul style="list-style-type: none"> ▪ None. | <p>Same as alternative A</p> <p>Same as alternative A</p> <p>Same as alternative A</p> | <p>Same as alternative A</p> <p>Same as alternative A, plus</p> <ul style="list-style-type: none"> ▪ Extend intertidal road west of Ramp 45 to new Ramp 47 | <p>Same as alternative A</p> <p>Same as alternative A</p> | <p>Same as alternative A</p> <p>Same as alternative A</p> | <p><i>Bodie Island Ranger District</i></p> <ul style="list-style-type: none"> ▪ Same as Alternative A <p>Same as alternative A, plus</p> <ul style="list-style-type: none"> ▪ Extend intertidal road west of Ramp 45 to Ramp 49. Establish new Ramp 47 off of intertidal road. <p>Same as alternative A</p> |
| <p>Hours of Allowable ORV Operation on Beach</p> <p>All areas of the seashore open 24 hours a day year round.</p> | <p>Visitors accessing the Seashore by ORV must drive only on marked ORV routes and comply with posted restrictions.</p> | <p>November 16 – April 30: All beaches open to ORV use 24 hours a day.</p> <p>May 1 – November 15: Beaches open from 6:00 a.m. to 10:00 p.m. and closed from 10:00 p.m. – 6:00 a.m.; except that from September 16 to November 15 ORV use is allowed from 10:00 p.m. – 6:00 a.m. subject to terms and conditions of a permit.</p> | <p>November 16 through April 30: Designated ORV routes and areas open to ORV use 24 hours a day.</p> <p>May 1 – November 15: All potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) closed to non-essential ORV use from 7:00 p.m. to 7:00 a.m.</p> | <p>November 16 through April 30: Designated ORV routes and areas open to ORV use 24 hours a day.</p> <p>May 1 – November 15: All potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) closed to non-essential ORV use from 7:00 p.m. to 7:00 a.m.</p> | <p>November 16 - April 30: Designated ORV routes and areas open to ORV use 24 hours a day.</p> <p>May 1 – September 15: All potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) closed to non-essential ORV use from 10:00 p.m. until 6:00 a.m.</p> <p>September 16 – November 15: ORV routes and areas with no or low density of turtle nests remaining (as determined by NPS) open between 10:00 p.m. and 6:00 a.m. subject to terms and conditions of permit.</p> |
| <p>ORV Routes</p> <p>The ORV corridor will be marked by posts placed approximately 150 feet landward from the average, normal high tide line, or if less than 150 feet of space is available, at the vegetation or the toe of the remnant dune line, except as noted in the Interim Protected Species Management Strategy. The corridor width will fluctuate over time due to the dynamic nature of beach and surf. (Superintendent's Order #7)</p> | <p>Same as alternative A, except:</p> <p>In all locations not in front of the villages that are open to ORV use, NPS shall provide an ORV-free zone in the ocean backshore at least 10 m wide, wherever there is sufficient beach width to all an ORV corridor of at least 20 m above the mean high tide line, from March 15 to November 30.</p> | <p>ORV beach routes would be a designated area seaward from the toe of dune or vegetation line to high tide line.</p> | <p>Same as alternative C.</p> | <p>September 1 – March 14: ORV beach routes would be a designated area seaward from the toe of dune or vegetation line to high tide line.</p> <p>March 15 – August 31: ORV beach routes would be a designated area from 10 meters from the toe of the dune to the existing tide line in areas open to ORV use. Such backshore closures would be implemented only when there is sufficient beach width to allow an ORV corridor of at least 20 meters above the mean high tide line.</p> | <p>Same as alternative A.</p> |

ORV Management Alternatives Matrix 11/05/08

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| <p>ORV Use Areas</p> | <p>All areas of the Seashore are open to ORV access. Refer to Use Areas Table.</p> | <p>Same as alternative A.</p> | <p>ORV access would be prohibited in all areas of the Seashore except where routes and areas are specifically designated. Refer to Use Areas Table.</p> | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |
| <p>Safety Closures</p> | <p>Safety closures apply only to ORV safety. ORV safety closures established as needed to address safety conditions such as debris on the beach or narrow beaches. Narrow beaches are reopened as the beach widens. Safety closures applicable only to ORV access; pedestrian access is maintained. Existing ORV safety closures include: <ul style="list-style-type: none"> • Ramp 1 to Ramp 2 • 1.8 miles south of Ramp 38 to 0.4 mile north of Ramp 43. • Buxton to Lighthouse Beach • Northern boundary of Frisco to Hatteras Village • September 16 – May 14, Hatteras Village • 1.5 miles north of Ramp 67 to 1 mile south of Ramp 59 </p> | <p>Same as alternative A.</p> | <p>Safety closures established in areas open to ORV use as needed to address ORV and pedestrian safety considerations, including debris on the beach, narrow beaches, and congested areas. Safety closures would preclude ORV access, while pedestrian access would be maintained through all safety closures. Safety closures would be reopened when/if conditions improve as determined by monitoring every two weeks by Seashore law enforcement.</p> | <p>Safety closures would not be established. ORV drivers would need to determine conditions and safety and would drive at own risk.</p> | <p>Same as alternative C, plus: For village beaches that are open to ORV use during the winter season, the village beaches must be at least 30 m (100 ft) wide from the toe of the dune seaward to mean high tide line in order to be open to ORV use.</p> |
| <p>Administrative ORV Closures</p> | <p>Beach in front of Cape Hatteras Lighthouse closed to ORV access. Buxton Woods road closed to ORV access.</p> | <p>Same as alternative A.</p> | <p>No administrative closures would be established. (Buxton Woods road is a non-ORV area.)</p> | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |
| <p>Ramp Characteristics</p> | | | <p>2-lanes wide with shell/clay base Standard regulatory signs and information boards at all ramps Gates at all ramps and access points Designated air down area with hardened surface (e.g., shell/clay base)</p> | <p>Same as alternative C.</p> | <p>Same as alternative C, plus for "high-use" ramps (to be determined); add toilet facility</p> |
| <p>Wintering Closures</p> | <p>Suitable interior habitats at spits and at Cape Point closed year-round to all recreational users to provide for resting and foraging for all species. For example, all present, such suitable habitats include ephemeral ponds and moist flats at Cape Point, Hatteras Spit, Ocracoke, and Bodie Island Spit. Actual locations of suitable foraging and resting habitat may change periodically due to natural processes.</p> | <p>Same as alternative A.</p> | <p>Based on an annual wintering habitat assessment of the RAs conducted after the breeding season, wintering areas are established within the respective RAs, while allowing an access corridor (pedestrian or pedestrian/ORV) as identified in ORV Use Areas Table. At spits, access will be maintained to inlet shoreline via ocean shoreline.</p> | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |

ORV Management Alternatives Matrix 11/05/08

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| Resource Protection Buffers | As identified in the Interim Strategy | As identified in the Interim Strategy, as modified by the Consent Decree. | SM1 and SM2 as described in the Resources Protection Measures Table. Implement SM1 at all locations, except implement SM2 at areas designated in Use Areas Table. | SM1 as described in the Resources Protection Measures Table. Implement alternative SM1 at all locations. | Same as Alternative C. |
| | ORV buffers are established for observed breeding behavior. See Resources Protection Measures table for SM1 and SM2 alternatives. | | | | |
| Permit Requirements | No permits required. | Permit required for ORV use from 10:00 p.m. – 6:00 a.m. September 16 – November 15. | Vehicle permit required. | Vehicle permit required. | Vehicle permit required. |
| Permit Distribution | n/a | To follow Seashore guidelines to be developed | Available in-person at various locations and on-line. | Same as alternative C. | Same as alternative C. |
| Permit Issuance Requirements | n/a | Night driving permit application process has an educational component and the permit contains restriction on light use. | ORV owners must read the rules and regulations governing ORV use at the seashore and complete a written or online exam. The owner would sign for their permit in acknowledgment that they understand the rules and that all drivers will abide by the rules and regulations governing ORV use at the seashore, including beach driving safety, and resource closure requirements | ORV owners must sign for the permit in acknowledgment that they understand the rules and that all drivers will abide by use at the seashore, including beach driving safety, and resource closure requirements | Same as alternative C. |
| Permit number limits | n/a | No limit on night driving permits | No limit | Same as alternative C. | Same as alternative C. |
| Permit types | n/a | Night driving permit for Sept 16 – Nov 15 | Annual permits would be available that would be valid for 12 months from date of purchase so as to span seasonal use. | Annual permits would be available. Valid for calendar year. | Annual and short-term permits (e.g., weekly) available. Night driving permits required under this alternative. |
| Permit fees | n/a | None | Fees subject to cost recovery | Same as alternative C (although fee would be lower than alternative C due to decreased management costs under this alternative) | Fees subject to cost recovery, with lower price for short-term or off-season permit (although fee would be higher than alternative C due to increased management costs under this alternative) |
| Permit form | n/a | Night driving permit to follow Seashore guidelines | Permit affixed to vehicle in a manner approved by the NPS. | Same as alternative C. | Same as alternative C. |
| Permit Revocation | n/a | Night driving permit to follow Seashore guidelines | A permit may be revoked for violation of applicable park regulations or terms and conditions of the permit. | Same as alternative C. | Same as alternative C. |

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ORV Management Alternatives Matrix 11/05/08

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| <p>Beach Parking</p> | <p>Parking within routes is allowed in any configuration.</p> | <p>Same as alternative A.</p> | <p>Same as alternative A.</p> | <p>Parking within ORV routes is allowed, but only one vehicle deep. Stacking of vehicles in more than one row would be prohibited.</p> | <p>Same as alternative A.</p> |
| <p>Vehicle Carrying Capacity Determination</p> | <p>Vehicle carrying capacity would not be determined.</p> | <p>Same as alternative A.</p> | <p>Carrying capacity would be established for all areas (to be determined) based on their linear feet of beachfront and the following physical space requirements ("miles" refers to miles of beach open to ORV use): <i>Bodie Island Ranger District</i> ■ 280 vehicles/mile (20 feet per vehicle) <i>Hatteras Island Ranger District</i> ■ 260 vehicles/mile (20 feet per vehicle) <i>Ocracoke Island Ranger District</i> ■ 100 vehicles/mile (54 feet per vehicle) Exceptions to carrying capacity limits may be approved for events operating under a special use permit.</p> | <p>Same as alternative A.</p> | <p>Carrying capacity would be established for all areas based on their linear feet of beachfront and the following physical space requirements: <i>Bodie Island Ranger District</i> ■ 260 vehicles/mile (20 feet/vehicle) <i>Hatteras Island Ranger District</i> ■ 280 vehicles/mile (20 feet/vehicle), except: ■ Cape Point – 400 vehicles allowed within a 1 mile area centered on Cape Point. <i>Ocracoke Island Ranger District</i> ■ 175 vehicles/mile (30 feet/vehicle) Exceptions to carrying capacity limits may be approved for events operating under a special use permit.</p> |
| <p>Temporary Emergency Beach Closures</p> | <p>Temporary emergency closures established per Superintendent's Compendium and NPS policy.</p> | <p>In addition to beach closure restrictions under the Consent Decree, NPS retains the authority to implement a temporary emergency beach closure if any of the following conditions are observed: ■ ORV traffic backing up on the beach access ramps, either on- or off-beach board, which threatens to impede traffic flow ■ ORV traffic on the beach is parked in such a way that 2-way traffic is impeded ■ Multiple incidents of disorderly behavior are observed or reported</p> | <p>The NPS retains the authority to implement a temporary emergency beach closure if any of the following conditions are observed: ■ ORV traffic backing up on the beach access ramps, either on- or off-beach board, which threatens to impede traffic flow ■ ORV traffic on the beach is parked in such a way that 2-way traffic is impeded ■ Multiple incidents of disorderly behavior are observed or reported</p> | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |
| <p>Seasonal Element related to Carrying Capacity</p> | <p>n/a</p> | <p>n/a</p> | <p>Applicable March 15 – October 14.</p> | <p>n/a</p> | <p>Focus is on peak use periods during breeding season, but may be implemented any time need arises.</p> |

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| <p>Periodic Review of Carrying Capacity</p> | <p>n/a</p> | <p>n/a</p> | <p>Visitation, crowding, and safety monitored periodically to determine if implementation of carrying capacity is warranted. Once implemented, carrying capacity limits would be reviewed every 2 years.</p> | <p>n/a</p> | <p>Same as alternative C.</p> |
| <p>Areas of Implementation</p> | <p>n/a</p> | <p>n/a</p> | <p>Would apply to all areas in the seashore. Carrying capacity requirements only implemented if increased visitation results in crowding threshold being met.</p> | <p>n/a</p> | <p>Same as alternative C.</p> |
| <p>Off-Road Vehicle Requirements</p> | <p>All vehicles operating in area of the Seashore must:</p> <ul style="list-style-type: none"> • Have a valid vehicle registration, insurance, and license plate. Vehicles must be street legal. ATVs prohibited from beach driving. <p>Recommend "air down" of tires prior to driving on beach.</p> | <p>Same as alternative A.</p> | <p>Vehicle Characteristics:</p> <ol style="list-style-type: none"> 1. All vehicles must be registered, licensed, and insured for highway use and comply with state inspection regulations within the state, country or province where the vehicle is registered. 2. Four-wheel drive vehicles are recommended. 3. Two wheel drive vehicles are allowed. 4. Motorcycles are prohibited on the ocean beachfront. 5. ATVs are prohibited. 6. There is a three axle maximum for vehicles (this is the axle maximum for the powered vehicle only and does not include the additional number of axles on towed trailers). 7. Any trailers are limited to no more than two axles. 8. The maximum vehicle length is thirty (30) feet (this is the maximum length for the powered vehicle and does not include the additional length of a towed trailer). 9. Tires must be U.S. Department of Transportation listed and/or approved tires only. | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |

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| <p>Equipment Requirements</p> | <p>n/a</p> | <p>n/a</p> | <p>Equipment Requirements:</p> <ul style="list-style-type: none"> All vehicles shall contain a low pressure tire gauge, shovel, jack, and jack stand. A full sized spare tire, first aid kit, fire extinguisher, trash bag or container, flashlight (if night driving), and low strap are recommended. When driving on designated routes, the pressure must be lowered sufficiently to maintain adequate traction within posted speed limit, 20 psi recommended for most vehicles. | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |
| <p>Speed Limits</p> | <p>25 mph (unless otherwise posted) on park beaches for public and private vehicles. Speed limit in front of villages during off season (September 16 – May 14) on park beaches posted at 10 mph. Emergency vehicles exempt when responding to a call.</p> | <p>Same as alternative A.</p> | <p>15 mph (unless otherwise posted). Emergency vehicles exempt when responding to a call.</p> | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |
| <p>Non-ORV Areas</p> | <p>None designated. Temporary closures occur as a result of seasonal closures, safety closures, and re-closures.</p> | <p>Same as alternative C.</p> | <p>designated in the ORV areas to be located near dunes located away from lateral inlet areas. will implement appropriate design to stormwater runoff. parking areas for are identified in ORV</p> | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |
| <p>Parking Areas for Non-ORV Access</p> | <p>Parking is currently provided in 6 maintained park lots throughout the Seashore, totaling approximately 300 spaces.</p> | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |
| <p>Non-ORV Parking Area Characteristics</p> | <p>None</p> | <p>None</p> | <p>Establish standards/specifications for non-ORV parking areas. Could include:</p> <ul style="list-style-type: none"> Each site would have a boardwalk or other appropriate pedestrian route for crossing the dune. Parking areas with 507 1007 (to be determined) or more parking spaces would have waste receptacles and toilet facilities. | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |

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 2008 Comparison
 in dunes
 15 mph + 25 mph
 4.21 (b)

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| <p>Alternative Transportation</p> | <p>Alternative transportation is not provided at the Seashore.</p> | <p>Same as alternative A.</p> | <p>Refer to Use Areas Table</p> | <p>Refer to Use Areas Table</p> | <p>Refer to Use Areas Table</p> |
| <p>Restroom Facilities</p> | <p>Existing porta-potties located throughout the seashore.</p> | <p>Same as alternative A.</p> | <p>To be determined</p> | <p>To be determined</p> | <p>To be determined</p> |
| <p>Pets</p> | <p>Per 36 CFR 2.15: The following are prohibited: Possessing a pet in an area closed to the possession of pets by the superintendent. Failing to crate, cage, restrain on a leash which shall not exceed six feet in length, or otherwise physically confine a pet at all times. Pets are prohibited in all resource closures. Pets are prohibited, even if on a leash, from the landward side of the posts delineating the ORV corridor at the spits (Bodie, Hatteras, Ocracoke) and Cape Point.</p> | <p>Same as alternative A.</p> | <p>Same as alternative A, except that pets, even if on a leash, are prohibited in Resource Areas from March 15 – October 15.</p> | <p>Same as alternative A, except pets prohibited in Resource Areas Year-round.</p> | <p>Same as alternative A, except pets prohibited in Resource Areas March 15 – August 31.</p> |
| <p>Beach Fires</p> | <p>Permitted per 36 CFR 2.13. Prohibited 12:00 midnight to 6:00 AM per Superintendent's Compendium Section 2.13.</p> | <p>Same as alternative A.</p> | <p>Beach fires prohibited 12:00 AM – 6:00 AM, year-round. Permit required for any beach fire to ensure user is informed of basic safety and resource protection measures, including no fires within a 100 meters of a known turtle nest.</p> | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |
| <p>Nighttime Beach Use</p> | <p>ORVs allowed on beach overnight only if someone associated with the vehicle is actively fishing. ORVs allowed on all areas of the seashore 24 hours a day, year round.</p> | <p>Camping, as defined in 36 CFR § 1.4, is prohibited on seashore beaches per Superintendent's Compendium § 2.10(a). Camping, as defined in 36 CFR § 1.4, is prohibited on seashore beaches per Superintendent's Compendium § 2.10(a). See allowable hours of ORV operations for this alternative.</p> | <p>Camping, as defined in 36 CFR § 1.4, is prohibited on seashore beaches per Superintendent's Compendium § 2.10(a). See allowable hours of ORV operations for this alternative. Unattended beach equipment (i.e., chairs, canopies, volleyball nets, water sports gear, etc.) is prohibited on the Seashore at night. Turtle patrol and law enforcement will tag equipment found at night. Owners have 24 hrs to remove equipment before it will be removed by NPS staff.</p> | <p>Same as alternative C.</p> | <p>Same as alternative C.</p> |
| <p>Boat Access</p> | <p>Launch sites, as designated under 36 CFR § 3.8(a)(2), are identified in the Superintendent's Compendium. Launching or recovery of vessels is prohibited within resource closures.</p> | <p>Same as alternative A.</p> | <p>Same as alternative A.</p> | <p>Same as alternative A.</p> | <p>Same as alternative A.</p> |

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ORV Management Alternatives Matrix 11/05/08

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| Commercial Fishing Vehicles | Authorized by permit to enter all ORV and pedestrian areas that are not closed for resource protection. Treated as non-essential vehicles and may not enter resource closures. | Same as alternative A, plus are subject to night driving restriction in consent decree. | Same as alternative A, plus may be authorized by special use permit to access non-ORV areas and night driving restricted areas if there is no resource conflict. To be determined. | Same as alternative C. | Same as alternative C. |
| Law Enforcement (LE) | | | To be determined. Need to develop "LE1" and "LE2" enforcement measures and staffing levels to complement the SMT1 and SM2 Resources Protection Measures (i.e., an SMT1 site needs LE1 enforcement coverage, and SM2 site needs LE2) | To be determined. Need to develop "LE1" enforcement measures and staffing levels to complement the SMT1 Resources Protection Measures | To be determined. Need to develop "LE1" and "LE2" enforcement measures and staffing levels to complement the SMT1 and SM2 Resources Protection Measures (i.e., an SMT1 site needs LE1 enforcement coverage, and SM2 site needs LE2) |
| Staffing <i>(including RM, sign crew, LE Maintenance, and others?)</i> | | | To be determined | To be determined | To be determined |
| Materials | | | To be determined | To be determined | To be determined |

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Dark

CAHA ORV Resource Protection Tables 11/05/08

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| Survey Time and Frequency | Piping Plover | American Oystercatcher | Colonial Waterbirds |
|---------------------------|--|--|---|
| All Bird Species | <p>Species Management 1 (SM1): Estimated minimum of 8-10 total biological field personnel needed for Alternative D. Will require larger, longer lasting buffers with less monitoring and will alleviate the need for constant monitoring.</p> <p>Species Management 2 (SM2): Estimated maximum of 20-22 total biological field personnel needed (varies for Alternative C or E). Buffers will be customized at selected spits and points towards bird presence and movement.</p> | | |
| Pre-Nesting Surveys | <p>By March 1, all potential habitats will have been evaluated. PPL pre-nesting closures will be recommended based upon that habitat evaluation. Those closures will be installed by March 15.</p> <p>March 15 – July 15 survey recent breeding areas (last three years) three times per week (or every other day). Survey potential new and or former habitat two times per week. Survey for Wilson's plover during piping plover surveys.</p> <p>The PPL pre-nesting areas will be surveyed 3 times per week if piping plovers are present in the area. To mitigate disturbance to nesting birds, surveys may need to be curtailed.</p> <p>Pre-nesting buffers will not be modified in cases where the beach erodes into the buffered habitat.</p> | <p>March 15 – July 15 survey recent breeding areas (last three years) two times per week. Turtle patrol will take over monitoring after July 15th.</p> <p>If an AMOY nests in a pre-nesting closure at one of the points or spits in an area which requires an expanded buffer (e.g., nest inside pre-nesting closure but buffer not adequate) and the nest is over-washed or predated, the buffer expansion shall be removed to the established pre-nesting closure.</p> | <p>May 1 – July 15 survey recent breeding areas (last three years) two times per week. Turtle patrol will take over monitoring after July 15th.</p> <p>If a colony is established in a pre-nesting closure at one of the points or spits in an area which requires an expanded buffer (e.g., colony inside pre-nesting closure but buffer not adequate) and the colony is over-washed or predated, the buffer expansion shall be removed to the established pre-nesting closure.</p> |

CAHA ORV Resource Protection Tables 11/05/08

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| <p>Pre-Nesting Buffers</p> | <p>SM1: Pre-nesting closures at the points, spits, South Beach and Resource Area SM1: Pre-nesting closures will not allow ORV or pedestrian access. SM2: Designate an ORV and/or pedestrian access corridor which may include a pass through or boat delivery system (water taxi) to designated points and spits. Outside of corridor, prohibit pedestrian access to breeding areas beyond the resource area closures. Delineate the corridor with posts placed up to 100 feet above the high tide line or as designated in a site specific plan (e.g., Bodie Island Spit, Cape Point, and South Point). No pets would be allowed in the pass through corridors or at the points and spits. At other resource area closures no ORV or pedestrian corridors would be designated, due to the narrow beach width of these areas. Pre-nesting closures may be modified at anytime as long as minimum buffers are maintained around breeding birds of all species.</p> | <p>SM1: Pre-nesting closures at the points, spits, South Beach and Resource Area SM1: Pre-nesting closures with recent breeding activity would be installed by March 15. Closures will be removed if no breeding activity is seen in the area by July 15 or when area has been abandoned for a 2-week period, whichever comes later. SM2: Pre-nesting closures will not be established prior to the bird's arrival.</p> | <p>SM1 & SM2: Pre-nesting closures will not be established for CWB. Note: CWBs do not return to exactly the same location every year making it difficult to establish a pre-nesting closure for them under SM1. Also, most will be in Resource Areas.</p> |
| <p>Courtship/Mating Surveys:</p> | <p>If species are observed exhibiting territorial or courtship behavior during two separate observations in recent breeding habitat, observe three times per week. If scrapes are observed in the absence of courtship behavior, survey three times per week. Survey potential new habitat two times per week.</p> | | |

CAHA ORV Resource Protection Tables 11/05/08

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| <p>Courtship/Mating Buffers:</p> <p>If courtship or copulation is observed outside of existing pre-nesting closures, establish or expand buffer to ensure 50 m buffer for the observed birds. Buffer will be increased if flushing occurs due to human disturbance.</p> <p>Designate an ORV or pedestrian access corridor as identified for each alternative in the Use Areas Table. Pets restricted as identified for each alternative in the Alternatives Matrix.</p> | <p>SM1: Pre-nesting closures will have already been established for the majority of returning birds. Pre-nesting closures will be evaluated to determine the adequacy of their placement. For observed activity outside of pre-nesting closures by pairs with known nesting history, buffers will be established when one observation of scraping or territorial behavior has been documented or if a scrape is being maintained. For birds with unknown nesting history, such buffers will be established when three such observations occur. Based on bird behavior and suitable habitat, a 300 meter buffer will be established around the bird activity.</p> <p>SM2: For observed breeding activity outside of pre-nesting closures by pairs of known nesting history, closures will be installed when one observation of scraping or territorial behavior have been documented or if a scrape is being maintained. For observed breeding activity outside of pre-nesting closures by pairs of unknown nesting history, closures will be installed when three separate observations of scraping or territorial behavior have been</p> | <p>SM1: If scraping is observed outside of existing closures, a 300 meter buffer will be established around the scrape locations. Closure establishment will be based on the locations of scrapes and not locations for copulation or "fish flashing".</p> <p>SM2: If scraping is observed outside a resource closure, a buffer will be established around the scrape location. For areas open to both pedestrians/ORVs, buffer will be 100 meters for least terns and 200 meters if the colony contains common terns, gull-billed terns or black skimmers. For an ORV pass-through, buffer will be 50-75 meters for LETE and 75 meters if other CWB present.</p> <p>Designate an ORV or pedestrian access corridor as identified for each alternative in the Use Areas Table. Pets restricted as identified for each alternative in the Alternatives Matrix.</p> |
| <p><i>Where? ↑</i></p> <p><i>Only one corridor mentioned is under Alt-C at South Point</i></p> | | <p><i>Some as other comment.</i></p> |

CAHA ORV Resource Protection Tables 11/05/08

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| | | <p>documented or if a scrape if being maintained. Based on bird behavior and suitable habitat, a 150 meter pedestrian/ORV buffer or a 75 meter buffer ORV pass-through buffer will be established around the bird activity.</p> <p>Designate an ORV or pedestrian access corridor as identified for each alternative in the Use Areas Table. Pets restricted as identified for each alternative in the Alternatives Matrix.</p> | |
| <p>Nesting Surveys:</p> | <p>Observe nests daily from a distance that does not disturb the birds, based on professional judgment. Approach nests once per week to observe and record data.</p> | <p><u>SM1</u>: Observe nests at least three times per week from a distance. For incubating birds that cannot be observed from a distance, check nests on a weekly basis (or as staff is available).</p> <p><u>SM2</u>: Observe nests daily from a distance that does not disturb the birds, based on professional judgment. For incubating birds that cannot be observed from a distance, check nests every three days.</p> | <p>Colonies will be surveyed by foot during the "peak" nesting period which is during the last week of May and the first week of June.</p> <p><u>SM1</u>: Observe colonies at least three times per week from a distance. For incubating birds that cannot be observed from a distance, check colonies on a weekly basis.</p> <p><u>SM2</u>: Observe nests daily from a distance that does not disturb the birds, based on professional judgment. For incubating birds that cannot be observed from a distance, check colonies every three days.</p> |
| <p>Nesting Buffers:</p> | <p><u>All species</u>: The park retains the discretion to expand buffers under SM1 and SM2 depending on staffing and bird behavior. In unprotected areas, a closure will be established immediately when a nest with egg(s) is found. When nesting occurs in the immediate vicinity of paved roads, parking lots, campgrounds, buildings and other facilities, NPS retains the discretion to provide resource protection to the maximum extent possible while still allowing those sites to remain operational. Buffers will remain in place for 2 weeks after a nest is lost to determine if pair will re-nest, if no other species nesting in area. After August 1, closures will be removed if all nesting is complete.</p> | | |
| <p><u>SM1 & SM2</u>: Establish 50-meter</p> | <p>Establish buffer/closure based on</p> | <p><u>SM1 & SM2</u>: Install closures immediately when</p> | |

CAHA ORV Resource Protection Tables 11/05/08

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| | <p>buffer/closure around piping plover nests occurring outside existing closures. If flushing off nest occurs due to human disturbance, buffer will be increased using flexible increments dependent on observed bird behavior. If the buffer falls within the intertidal zone a full-beach closure will result.</p> <p>Designate an ORV or pedestrian access corridor as identified for each alternative in the Use Areas Table. Pets restricted as identified for each alternative in the Alternatives Matrix.</p> | <p>adult's reaction to human disturbance.</p> <p><u>SM1</u>: Buffer will be the same as for courtship and mating – 300 meters.</p> <p><u>SM2</u>: Buffers around nests will be a minimum of 150 m for pedestrians/ORVs; or 75 m for an ORV pass-through. If flushing off nest occurs due to human disturbance, buffer will be increased using flexible increments dependent on observed bird behavior. If the buffer falls within the intertidal zone a full-beach closure will result.</p> <p>Designate an ORV or pedestrian access corridor as identified for each alternative in the Use Areas Table. Pets restricted as identified for each alternative in the Alternatives Matrix.</p> | <p>a nest is located. Establish a buffer/closure based on adult's reaction to human disturbance.</p> <p><u>SM1</u>: Buffer will be the same as for courtship and mating – 300 meters.</p> <p><u>SM2</u>: Buffers around nests or colony for pedestrians/ORVs will be a minimum of 100 meters for least terns and 200 meters if the colony contains common terns, gull-billed terns or black skimmers; or, for an ORV pass-through, a minimum of 50-75 meters for LETE and 75 meters if other CWB present. If flushing off nest(s) occurs due to human disturbance, buffer will be increased using flexible increments dependent on observed bird behavior. If the buffer falls within the intertidal zone a full-beach closure will result.</p> <p>Designate an ORV or pedestrian access corridor as identified for each alternative in the Use Areas Table. Pets restricted as identified for each alternative in the Alternatives Matrix.</p> <p><u>SM1</u> & <u>SM2</u>: Closures will be removed when areas have been abandoned for a two week period. After August 1 the 2-week removal period will no longer be required for closure removal.</p> |
| <p>Adult Foraging Buffer:</p> | <p>For breeding adults (with an associated scrape or nest territory) foraging outside of a closure on two consecutive surveys, establish or expand the buffer using flexible increments based on observed bird behavior to include foraging site if the foraging area is associated with a pre-nesting closure. These closures are intended to provide foraging</p> | <p>No additional buffers/closures.</p> | <p>No additional buffers/closures.</p> |

CAHA ORV Resource Protection Tables 11/05/08

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| | <p>opportunities close to breeding sites. Remove closure if no foraging observed for a 2-week period during the breeding season, or when associated breeding activity has concluded.</p> | | |
| <p>Unfledged Chicks Surveys:</p> | <p><u>SM1</u>: Observe brood once daily. <u>SM2</u>: Observe brood am and pm daily. Have monitor(s) present during periods of ORV or pedestrian access. Observations end once chicks have fledged. Chicks are considered fledged at 35 days or are observed in sustained flight of >15 m.</p> | <p><u>SM1</u>: Observe brood at a minimum every other day. <u>SM2</u>: Observe brood once daily. Observations end once the chicks have fledged. Chicks are considered fledged if they have been observed to be proficient in flying or observed in sustained flight of >30 m.</p> | <p>Colonies will be surveyed by foot during the "peak" hatching period which should fall 21 days after initial nest counts. A follow-up survey by foot should be conducted during the "peak" fledge which should fall 20 days after hatch counts. <u>SM1</u>: Observe colony weekly. <u>SM2</u>: Observe colony at two-three day intervals. Observations end after no unfledged chicks have been observed on two consecutive occasions. Closure can be removed after all chicks have fledged.</p> |
| <p>Unfledged Chick Buffers:</p> | <p><u>SM1</u>: Establish a minimum 1000 meter buffer on either side of brood based on observation of bird behavior and terrain conditions at site. No ORV or pedestrian access until all chicks have fledged. <u>SM2</u>: *For the first two weeks after hatching establish a 1000 meter buffer for ORVs and pedestrians on either side of brood. Based on observed behavior (i.e., mobility of the brood) and the capability to intensively observe mobility and behavior, at the discretion of park management, the buffer can be reduced after the first two weeks to no less than</p> | <p><u>SM1</u>: Establish a 300 meter buffer when unfledged chicks are present. Closure would be removed 2 weeks after fledging. <u>SM2</u>: Establish a 200 meter buffer around the unfledged chick(s) location. Adjust/increase buffer as needed when chicks are mobile. ORV access would not be allowed until 2 weeks after AMOY chicks have fledged (observed flight of 30 meters); a pedestrian corridor may be established prior to 2 week</p> | <p><u>SM1</u>: Same as courtship and mating – 300 meters. If chicks move outside of the buffer, it will be adjusted to include an additional 200 meters from the chick(s) location outside of the closure. <u>SM2</u>: Establish a 200 meter buffer around the chick(s) location. Adjust buffer as needed when chicks are mobile. Points and spits would only be accessible from 7 a.m. - 7 p.m. as long as unfledged chicks are in the area and if buffers can be maintained. The 7 a.m. opening may be delayed until the chicks have been located.</p> |

CAHA ORV Resource Protection Tables 11/05/08

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| | <p>500 m for ORVs and 200 m for pedestrians. It will be up to the discretion of the Park whether or not the area can be opened to pedestrians. If the chicks are highly mobile the 1000 meter buffer may need to be maintained. Buffer moves with chicks. Vehicles may be allowed to pass through portions of the protected area that are considered inaccessible to PPL chicks because of steep topography, dense vegetation, or other naturally occurring obstacles. Points and spits would only be accessible from 7 a.m. - 7 p.m. as long as unfledged chicks are in the area and if buffers can be maintained. The 7 a.m. opening may be delayed until the chicks have been located.</p> | <p>requirement for access to the points and spits.</p> <p>Points and spits would only be accessible 7 a.m. - 7 p.m. as long as unfledged chicks are in the area and if buffers can be maintained. The 7 a.m. opening may be delayed until the chicks have been located.</p> | |
| <p>Non-breeding / Wintering Survey</p> | <p>Reopen access corridor after chicks fledge (except for AMOY's where the area will remain closed for an additional 2 weeks).</p> <p>NPS will monitor presence, abundance and behavior of migrating and wintering PPL, AMOY, WPL, and REKN at the points and spits. Surveys will begin after the last PPL chick has fledged on the seashore and end on March 1 the following year. Surveys will be conducted three times per month at pre-established locations based on a habitat assessment conducted at the beginning of the winter survey season.</p> | | |
| <p>Non-breeding / Wintering Buffers</p> | <p>Annual habitat assessment will be conducted after all birds have fledged from the area. Winter closures will be based on habitat used by wintering PPLs in the past 3 years, the presence of birds at the beginning of the migratory season, and suitable habitat types based on the results of the annual survey. All winter closures will be</p> | <p>No closures.</p> | <p>No closures.</p> |

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Matory Sags

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| <p>Data Collected</p> <p>GPS will be used to document nest locations.</p> <p>Record locations where territorial/courtship behavior occurs to include scrape locations.</p> <p>Estimate where adult and chick foraging occurs. Chicks should never be disturbed to obtain this information.</p> <p>Record presence and abundance of birds.</p> | <p>GPS will be used to document nest locations.</p> <p>Record presence and abundance of birds.</p> | <p>GPS will be used to document colony locations.</p> <p>Record presence and abundance of birds.</p> |
| <p>Sea Turtles (a minimum of 7 field personnel is required to meet the daily monitoring requirements on the Park's 67 miles of shoreline)</p> | | |
| <p>Survey Time and Frequency</p> | <p>Sea turtle patrol will begin on May 1, unless leatherback nests have been reported within the state, in which case CAHA will follow the direction of NCWRC. Patrol will continue until September 15, or two weeks after the last sea turtle nest or crawl is found, whichever is later.</p> <p>Conduct daily morning surveys by ATV/UTVs and possibly ORVs for crawls and nests on all beaches before onset of heavy public ORV use. Daily surveys for nests end September 15, or two weeks after the last sea turtle nest or crawl was found, whichever is later. Periodic monitoring (e.g., every two to three days) for unknown nesting and emerging hatchlings will continue, especially in areas of high visitation from that date until November 15.</p> <p>Monitoring will also occur for post-hatchling washbacks during periods when there are large quantities of seaweed washed ashore or following severe storm events. Nest observations stop when all nests have hatched or excavation indicates that the nest was not viable.</p> <p>Once a light filter fence is installed, monitor nests daily for signs of hatchling emergence.</p> | |

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| <p>Data Collected</p> | <p>Follow the North Carolina Wildlife Resources Commission Handbook and record:</p> <ul style="list-style-type: none"> -Turtle species -Nest vs. false crawl -Location (physical description and GPS location) -If nest needs to be relocated and, if so, why and where (new physical description and GPS location), number of eggs relocated, and time of day -Necessary protective measures for nest and hatchlings -Information regarding any post hatching nest excavation and analysis <p>Examine all nests after hatching to determine productivity rates. Excavate nests in the evening a minimum of 72 hours after hatching event. In cases where hatching events or dates were unknown, unearth nest cavities 80-90 days after the lay date. Any live hatchlings found during excavations will be released after dark on the same day as excavation.</p> <p>For strandings the following will be recorded: species, location, measurements, and signs of human interactions. Samples and photos will be collected when necessary. Necropsies will be conducted when possible.</p> |
| <p>Nest Closures/ Buffers</p> | <p>Establish a buffer approximately 10 meters by 10 meters with symbolic fencing and signage around nest. Closure size may be modified due to environmental conditions at the nest site.</p> <p>Approximately 50- 55 days into incubation, closures expanded to the surf line. The width of the closure based on the type and level of use in the area of the beach where the nest was laid:</p> <ol style="list-style-type: none"> a. Vehicle-free areas with little or no pedestrian traffic - 25 meters wide (total width); b. Villages or other areas with high levels of day use -50 meters wide (total width); c. Areas with ORV traffic -105 meters wide (total width). <p>Opposite the surf line on the landward side of the closure, expand the closed area to 15 meters where possible, but no less than 10 meters landward from the nest. Traffic detours behind the nest area clearly marked with signs and reflective arrows.</p> <p>Where present within closure, vehicle tracks manually smoothed with rakes or a steel mat attached to an ATV, so as not to impede hatchlings attempting to reach the surf.</p> <p>Use light filtering fence behind nests nearing hatch dates to block light pollution from the villages and vehicles operating on the beach after dark.</p> <p>If multiple nests are located near each other (within 150 feet), and have similar hatch dates (14 days), then closures will encompass all nests in the area, and will not be removed until all nests within the closure have hatched.</p> |
| <p>Nest Relocation</p> | <p>By April 15th, areas deemed unsuitable for turtle nests (i.e. high erosion rate) will be identified by Park staff. Maps and descriptions of these areas will be analyzed by NCWRC prior to nesting season.</p> <p>When a nest is found, staff assesses need for nest relocation and follows relocation guidance identified in the NCWRC handbook. If it is determined the nest will not be relocated, it will be immediately protected with a symbolic fencing and signs and will measure</p> |

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| | approximately 10 meters by 10 meters in size. Closure size may vary at the discretion of staff due to the environmental factors at a nest location. If a nest is threatened by an imminent storm event, NPS will consult with NCWRC to determine appropriate action. |
| Light Management | Establish turtle friendly lighting standards and/or reduce light for all Seashore (NPS) structures. Encourage concessioners to install turtle friendly lighting. Develop educational material to inform visitors about their impact on the success of sea turtle nests. |
| Research | Support research efforts looking at the sex ratios of sea turtles. Respond to sea turtle strandings in a timely manner, and report all information, pictures, and signs of human interaction to NCWRC. Necropsies of strandings will be done when possible. |
| Seabeach Amaranth | |
| Survey Time and Frequency | August An annual survey of potential habitat will be conducted. Some bird closure areas may not be surveyed due to the potential to disturb nesting birds. Some areas may not be surveyed until just prior to re-opening an area to ORV traffic. July– September Before opening any species closure or identifying alternate ORV corridors, survey for seedlings/plants. End observations when all plants have died back. |
| Data Collected | Record location of all individual plants or plant clusters using a GPS and note if the plant is located in an area open or closed to recreational use. |
| Buffers | April 15 – November 30 If a plant/seedling is found outside of an existing closure, the Seashore will erect symbolic fencing with signage creating a 10 meter by 10 meter buffer around the plant. If plants are located next to each other, the area will be expanded to create one enclosure protecting several plants. If a SBA is found during the survey prior to reopening a bird closure to ORV and pedestrian use, the Seashore will protect the SBA as described above and reopen the areas of the bird closure where no plants exist. Areas reopened if no plants are present by September 1. Where plants occur, the closed areas will be reopened after the plants have died. |

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Shorebird / Waterbird Buffer Summary

| Species | Breeding Behavior/ Nest Buffer | ORV Pass- through | Unfledged Chicks |
|------------------------|-----------------------------------|----------------------|---------------------|
| | SM1 / SM2 | SM2 only | SM1 / SM2 |
| Piping Plover | 50 m / 50 m | 50 m | 1000 m / 200-1000 m |
| American Oystercatcher | 300 m / 150 m | 75 m | 300 m / 200 m |
| Least Terns | 300 m / 100 m | 50-75 m | 300 m / 200 m |
| Other Species CWB | 300 m / 200 m | 75 m | 300 m / 200 m |

Meghan Lantioti's (NPS-CAHA)
DRAFT - December 8, 2008
Comment copy 2/5/2009

CAHA# 2028c

CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

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proposing to take

hyphenate or not throughout.

CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

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

Cape Hatteras N Seashore (the Seashore)

in 36 CFR ~~7.58~~ 7.58?

PURPOSE OF THE PLAN / ENVIRONMENTAL IMPACT STATEMENT

This is a NEPA document (This is NOT NEGOTIATED RULEMAKING document.)

The purpose of this action is to develop regulations and procedures that manage ORV use/access in the Seashore to protect and preserve natural and cultural resources and natural processes, provide a variety of appropriate visitor use experiences while minimizing conflicts among various users, and promote the safety of all visitors. [for DEIS, include sidebar definition of ORV]

NEED FOR ACTION

Cape Hatteras National Seashore provides a variety of visitor experiences, including the use of ORVs. In addition to recreation opportunities, the Seashore is home to important habitats created by the Seashore's dynamic environmental processes, including habitats for several federally listed species such as the piping plover (*Charadrius melodus*); three species of sea turtles (loggerhead [*Caretta caretta*], green [*Chelonia mydas*], and leatherback [*Dermochelys coriacea*]); and one plant species, the seabeach amaranth (*Amaranthus pumilus*). Two other federally listed sea turtle species, the hawksbill (*Eretmochelys imbricata*) and Kemp's ridley (*Lepidochelys kempii*), occupy the surrounding waters. In addition, the Seashore provides nesting habitat for several species of state-listed colonial waterbirds, including the common tern (*Sterna hirundo*), least tern (*Sterna antillarum*), gull-billed tern (*Sterna nilotica*), and black skimmer (*Rynchops niger*). Solitary nesters, such as the American oystercatcher (*Haematopus palliatus*) and Wilson's plover (*Charadrius wilsonia*), also use Cape Hatteras National Seashore as a breeding ground, and the red knot (*Calidris canutus rufa*) is a migrant and occasional winter resident at the Seashore. This ORV management planning effort is based on recognition by the NPS that ORVs must be regulated in a manner that is consistent with applicable law and appropriately addresses resource

COMPLY WITH EOs + Mgmt Policies providing the protection... (the Seashore)

CATA has 1 Natural resources + 2 T+E species + 3 Conflict w/ visitor experiences of Seashore.

Remove species specific info & just say Fed + state listed spp. are present, breed, nest, feed, etc. year-round use by T+E's.

IB/D

[Signature]

This doesn't seem to be necessary here because it's elsewhere (p. 26 x)

1 protection (including protected, threatened, and endangered species), potential conflicts among the
 2 various Seashore users, and visitor safety.

3 Executive Order 11644, *Use of Off-Road Vehicles on the Public Lands*, was issued in 1972 in response to
 4 the widespread and rapidly increasing use of ORVs on public lands "often for legitimate purposes but also
 5 in frequent conflict with wise land and resource management practices, environmental values, and other
 6 types of recreational activity." This Executive Order, amended by Executive Order 11989 in 1977, states
 7 that federal agencies allowing ORV use must designate specific areas and trails on public lands on which
 8 the use of ORVs may be permitted and areas in which use may not be permitted. Section 3 of Executive
 9 Order 11644 requires that agency regulations on ORV use provide that designation of such areas and
 10 trails will be based on protecting resources of public lands, promoting the safety of all users of those
 11 lands, and minimizing conflicts among the various uses on those lands. Code of Federal Regulations
 12 (CFR) Title 36, Section 4.10(b) contains regulations regarding vehicles and traffic safety on National Park
 13 Service lands and requires that "routes and areas designated for ORV use shall be promulgated as special
 14 regulations" and that the designation of routes and areas "shall comply with §1.5 of this chapter and E.O.
 15 11644 (37 FR 2887)."

included in appendices?

TITLED WHAT?

16 Therefore, an ORV management plan for Cape Hatteras National Seashore is needed at this time to :

- 17 • Bring the Seashore in compliance with Executive Orders 11644 and 11989 respecting ORV
 18 use, and with NPS laws, regulations (36 CFR 4.10), and policies to minimize impacts to
 19 Seashore resources and values.
- 20 • Address the lack of an approved plan, ^{and} (which has led over time) to inconsistent management of
 21 ORV use, user conflicts, and safety concerns.
- 22 • Provide for protected species management, in relation to ORV use, upon expiration of the *Cape*
 23 *Hatteras National Seashore Interim Protected Species Management Strategy/Environmental*
 24 *Assessment* (interim strategy/EA) (NPS 2006a) and associated Biological Opinion and Policies
 25 Amendment (USFWS 2006 and 2007).

Ultimately, we have to manage ORVs to:

① Be compliant with existing Laws, Regulations, Policies of Public Trust Resources + Provide for enjoyment of future generations via appropriate uses.

26 **OBJECTIVES IN TAKING ACTION**

27 Objectives are "what must be achieved to a large degree for the action to be considered a success" (NPS
 28 2001, 22). All alternatives selected for detailed analysis must meet project objectives to a large degree and
 29 resolve the purpose of and need for action. Objectives must be grounded in the Seashore's enabling
 30 legislation, purpose, significance, and mission goals, and must be compatible with direction and guidance

1 provided by the Seashore's ^{General Management Plan} general management plan, strategic plan, and/or other management guidance.

2 The following are objectives identified by Seashore staff for developing this plan/EIS:

public (NEPA process) input, so eliminate info about who identified these objectives.

3 **MANAGEMENT METHODOLOGY**

- 4 • Identify criteria to designate ORV use areas and routes.
- 5 • Establish ORV management practices and procedures that ^{are adaptable / flexible} have the ability to adapt in response to changes in the Seashore's dynamic physical and biological environment.
- 7 • Establish a civic engagement component for ORV management.

- 8 • Establish procedures for prompt and efficient public notification of beach access status, including any temporary ORV use restrictions for such things as ramp maintenance, resource and public safety closures, storm events, etc.

ACTIVITIES

↳ Replace with other specific examples or eliminate "etc."

- 11 • Build stewardship through public awareness and understanding of NPS resource management and visitor use policies and responsibilities as they pertain to the Seashore and ORV management.

13 **NATURAL PHYSICAL RESOURCES**

- 14 • Minimize impacts from ORV use to soils and topographic features, ^{(e.g.,} for example, dunes, ocean beach, wetlands, tidal flats, and other features).

↳ natural

16 **THREATENED, ENDANGERED, AND OTHER PROTECTED SPECIES**

federally-listed

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

21 **VEGETATION**

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

23 **OTHER WILDLIFE AND WILDLIFE HABITAT**

- 24 • Minimize impacts to wildlife species and their habitats (related to ORV use.)

↳ on other

vs. Be consistent in "ORV use" or "ORV and other uses"

1 CULTURAL RESOURCES

- 2 • Protect cultural resources, ^{e.g.,} such as shipwrecks, archeological sites, and cultural landscapes) from
- 3 impacts related to ORV use.

4 VISITOR USE AND EXPERIENCE

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

9 VISITOR SAFETY

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

11 PARK OPERATIONS

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

15 PROJECT STUDY AREA

16 The geographic study area for this plan/EIS is ^{Establish} Cape Hatteras National Seashore in North Carolina ^{NPS-owned land within} (Figure 1), unless otherwise noted under each resource topic. ^{for park staff to evaluate ORV use areas, routes, & conditions & install closures >>} Entry = ^{Whalebone Junction on Bodie Island, southward onto Hatteras & Ocracoke Islands...}

This needs to be better defined

18 PURPOSE AND SIGNIFICANCE OF CAPE HATTERAS NATIONAL SEASHORE

19 All units of the national park system were formed for a specific purpose ^{to be protected and preserved to ensure} (their reason for being) and to

20 preserve significant resources or values, ~~for the~~ enjoyment of future generations. The purpose and

21 significance identify uses and values that individual NPS plans should support. The following provides

22 background on the purpose and significance of Cape Hatteras National Seashore.

23 As ~~stated in the Seashore's enabling legislation~~, Congress established the Seashore in 1937 as a national

24 Seashore for the enjoyment and benefit of the people, and to preserve the area. Its enabling legislation

25 states: *& for enjoyment.*

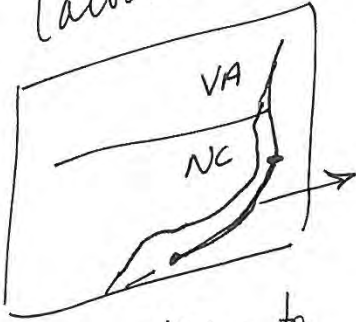
26 Except for certain portions of the area, deemed to be especially adaptable for recreational

27 uses, particularly swimming, boating, sailing, fishing, and other recreational activities of

1

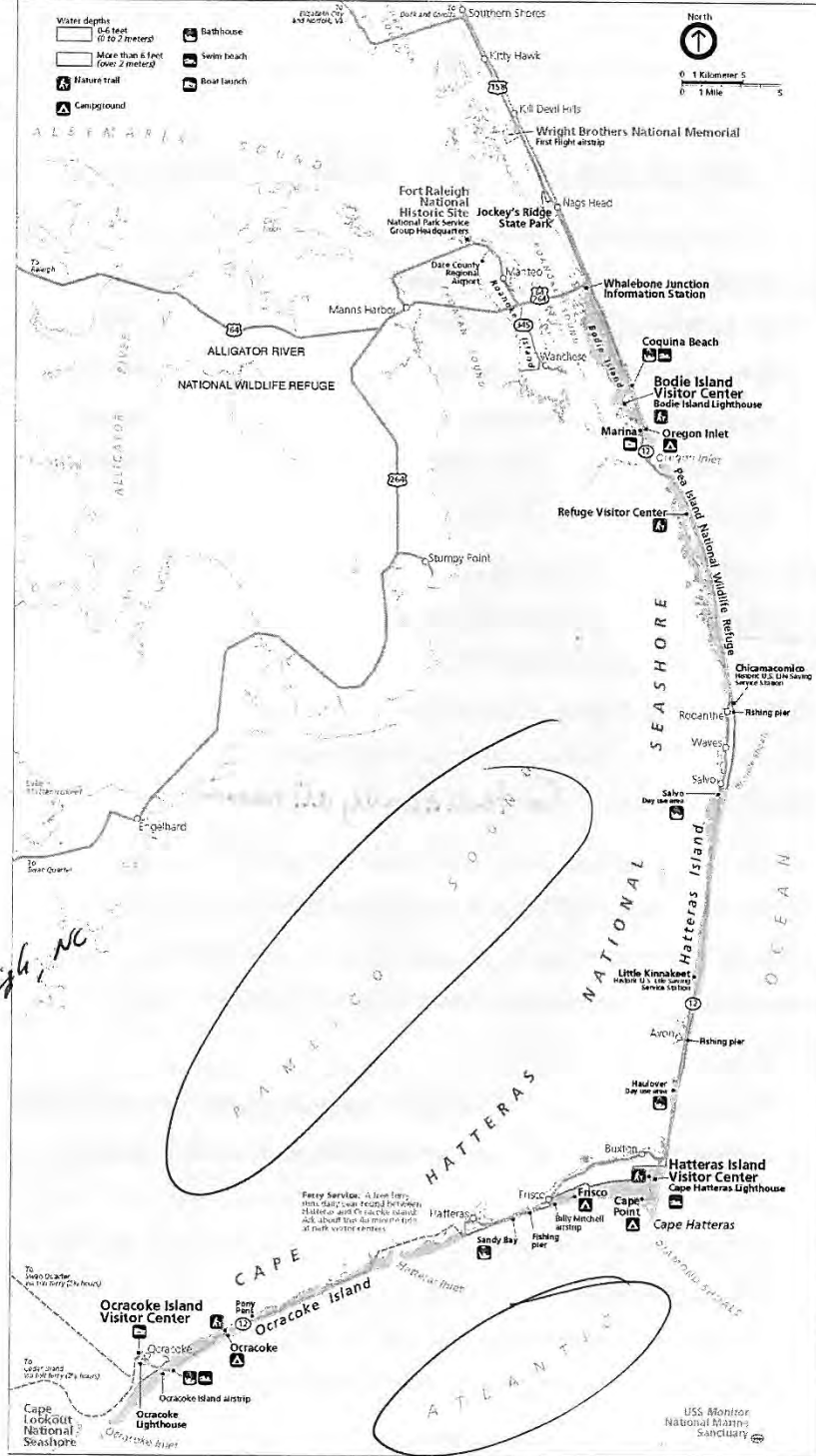
Figure 1: Cape Hatteras National Seashore Map (will be 11x17 foldout)

Possibly include map of North Carolina Coast



So that reader sees relationship to VA & CALO.

Need to mention the waterbodies east & west of islands & the names of nearest Metropolis (eg., approx XX miles west of Raleigh, NC & XX miles south of VA Beach, VA).



1 similar nature, which shall be developed for such uses as needed, the said areas shall be
2 permanently reserved as a primitive wilderness and no development of the project or plan
3 for the convenience of visitors shall be undertaken which would be incompatible with the
4 preservation of the unique flora and fauna or the physiographic conditions now prevailing in
5 this area.

6 The 1937 enabling legislation for Cape Hatteras National Seashore also states that:

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

This is not relevant to ORV mgmt, unless hunting by ORV. Move to Admin? Bred - History?

A 1940 amendment to the enabling legislation re-designated the area as the Cape Hatteras National Seashore Recreational Area to permit hunting in the Seashore. In 1954, Assistant Director Hillory A. Tolson sent a memorandum to the NPS Washington Office which administratively determined that the shorter title of "Cape Hatteras National Seashore" could be used in place of the full title (Cape Hatteras National Seashore and Recreational Area Project) except in all memoranda and documents requiring the full title of the park unit. *So technically all memoranda should say?*

20 Park significance statements capture the essence of the park's importance to the nation's natural and
21 cultural heritage. Understanding park significance helps managers make decisions that preserve the
22 resources and values necessary to the park's purpose. The following significance statements recognize the
23 important features of the Seashore. As stated in the 2005-2008 Strategic Plan, the Seashore has the
24 following significance (NPS 2005a, 6):

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

1 ADMINISTRATIVE BACKGROUND

2 HISTORY OF CAPE HATTERAS NATIONAL SEASHORE

3 Officially authorized in 1937 along the Outer Banks of North Carolina, Cape Hatteras is the nation’s first
 4 national seashore. Consisting of more than 30,000 acres distributed along approximately 64 miles of
 5 shoreline, the Seashore is part of a dynamic barrier island system. The ^{islands} Outer Banks of North Carolina
 6 formed ^{when? how long ago?} as a result of changes in sea level, wave and wind action, and ocean currents. These factors
 7 continue to influence the islands today through the processes of erosion and accretion of the shoreline;
 8 overwash across the islands; and the formation, migration, and closure of the inlets (NPS 1979, 7). Since
 9 the 1930s, these natural processes have been influenced by human actions such as building sand berms¹ to
 10 protect roads and homes, dredging inlets, and filling inlets newly created by storms.

Move elsewhere

11 The Seashore serves as a popular recreation destination, with more than 2.2 million visitors in 2007
 12 [update when 2008 data are available] showing a 12-fold increase in visitation over the past 50 years
 13 (NPS 2008a, 1). ^{Need new 1st sentence to discuss land transfer + boundary establishment of CAHA.} Federal ownership extends from ocean to sound across three barrier islands—Ocracoke,

14 Hatteras, and Bodie (figure 1). The U.S. Coast Guard property and eight villages are excluded from the
 15 Seashore boundaries. On the oceanside of the villages, federal ownership was established as a 500-foot
 16 strip measured landward from the mean low water at the time of acquisition. A larger area seaward of
 17 Buxton and Frisco includes portions of Buxton Woods. ^{This needs to be mentioned in Area of Study (pg 4)} The 5,880-acre Pea Island National Wildlife
 18 Refuge, located at the northern end of Hatteras Island, is part of the Seashore, but administered for refuge
 19 purposes by the U.S. Fish and Wildlife Service under the National Wildlife Refuge System
 20 Administration Act (NPS 1997, 1). Therefore, this plan/EIS does not include the area within the refuge.

21 The Seashore’s enabling legislation (^{passed in 1937}) provides for both ² visitor use and ¹ resource protection.
 22 Visitors to the Seashore participate in a variety of recreational activities, including beach recreation
 23 (swimming, windsurfing, waterskiing, kiteboarding ^{etc.}), fishing (surf and boat), beach driving,
 24 motorized boating, camping, shell collecting, historical tourism, nature study, harvesting of shellfish, non-
 25 motorized boating (sailing, kayaking, canoeing), hunting, hiking, and photography.

¹ The word ‘berm’ as used in this document refers to remnants of the man-made dune or dune ridge originally constructed in the 1930s by the Civilian Conservation Corps and the Works Progress Administration. The National Park Service actively maintained this dune ridge until the 1970s when dune stabilization was abandoned by the Seashore. The word ‘berm’ as used in the document also refers to a man-made dune or dune ridge constructed to protect state highway NC-12 and interior sections of the island from ocean flooding and overwash during storms.

1 Seashore visitors use ORVs for traveling to and from swimming, fishing, and surfing areas, and for
2 pleasure driving. The number of visitors to the Seashore has grown from 1,510,237 in 1980 to 2,237,378
3 in 2007, a growth of approximately 48%. Over the last few years, visitation to the Seashore has stabilized
4 at approximately 2.2 million visitors per year (NPS 2008a, 1)

5 Current management allows ORV users to drive on the beach in front of the primary dune line. Drivers
6 must use designated ramps to cross between the beach and NC-12 that runs behind the primary dune line.
7 In some areas, NC-12 provides a way around full beach closures or areas where the high tide line limits
8 beachfront access.

9 In addition to a multitude of visitor opportunities, ^{① offers} the Seashore provides a variety of important habitats
10 created by its dynamic environmental processes, including habitats for the federally listed piping plover;
11 sea turtles, and one listed plant species, the seabeach amaranth. The Seashore also hosts colonial
12 waterbirds, the American oystercatcher, and other species of concern, such as the Wilson's plover and red
13 knot. The Seashore also contains ecologically important habitats such as marshes, tidal flats, and riparian
14 areas.

too brief in comparison to visit. text

There are so many species that don't have special status & need to be mentioned. There is too much emphasis on "protected species" only! We should be regulating ORVs independent of protected species occurrence!

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

17 ^{Prior to a village} ~~Before~~ 1954, local residents and visitors ^{drove to the Outer Banks} on the beaches at the Seashore because there were few
18 formal roads in this remote area. ~~Since~~ The main purpose of beach driving was transportation, and not
19 recreation, ~~the number of ORVs on the beach was much smaller than it is today.~~ In 1954, NC-12 was
20 paved, providing a formal transportation route. The paving of NC-12, the completion of the Bonner
21 Bridge connecting Bodie and Hatteras Islands in 1963, and the introduction of the State of North Carolina
22 ferry system to Ocracoke Island facilitated visitor access to the sound and ocean beaches and resulted in
23 increased vehicle use on beaches for recreational purposes (NPS 2004a, 1). Residents adopted the use of
24 ORVs for commercial netting of fish, while sport fishermen used ORVs to pursue migrating schools of
25 game fish and reach more productive areas, such as Cape Point or the inlets, often a mile or more from the
26 nearest paved surface. Presently, ORVs are used for activities such as commercial and recreational
27 fishing, sightseeing, travel to and from swimming and surfing areas, and pleasure driving (NPS 2004b, 1).

28 ORVs access the sounds and beaches via a system of ramps located off NC-12. The ramps began as an
29 informal system of unimproved access points connecting the roadway to the sounds and beaches. Over
30 time, this system was formalized and the oceanside ramps are now numbered, maintained, and identified
31 on the Seashore's ORV route maps as official vehicle access routes for beach access. In 1978 there were
32 28 identified ramps, 22 of which were located on NPS lands. Although the NPS opened a new ramp to the

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1 public in 1998, the number of ramps has decreased since 1978 as some were lost to erosion and others
 2 were closed to the public and are now used for administrative vehicle access only (NPS 2004a, 2). The
 3 NPS currently has 17 oceanside access ramps available for public ORV use (NPS 2008b, 1). ~~ORV~~ use at ←
 4 the Seashore has been managed through various plans. In 1973, in response to Executive Order 11644,
 5 *Use of Off-Road Vehicles on the Public Lands* (February 8, 1972), the Seashore developed a plan for
 6 ORV management (NPS 2004b, 1) that included:

↑
draft?

- 7 • Designation of 27 beach access routes or ramps;
- 8 • Identification of a permitted area for travel from the toe of the dune to the ocean;
- 9 • License requirements for vehicles and operators;
- 10 • Closure of one heavily eroded section of the beach near the Cape Hatteras lighthouse year round;
- 11 and
- 12 • Designation of seasonal closures in five areas heavily used by pedestrians between May 26 and
- 13 September 10 (NPS 1978a, 3)

14 This management plan was not finalized or published as a [?] Special [?] Regulation, as required by Executive
 15 Order 11644 and 36 CFR 4.10. Why not?

16 A few years later, in response to Executive Order 11989, *Off-Road Vehicles on Public Lands* (May 24,
 17 1977), the Seashore began developing an ORV management plan for the Seashore. In response to this - draft?
 18 plan, which was released in January 1978, the North Carolina Beach Buggy Association and the Outer final?
 19 Banks Preservation Association each issued proposed alternative plans for ORV management at the approved?
 20 Seashore. These proposed plans were considered by the Seashore, along with public comment, and in
 21 November 1978 the *Draft Interim Management Plan: Off-Road Vehicle Use, Cape Hatteras National*
 22 *Seashore* was issued (NPS 1978a, 2). It established guidelines and management of ORV use in the
 23 Seashore while the general management plan was under development. Management through the draft
 24 interim management plan was achieved by establishing zones of use for ORVs, as well as describing
 25 conditions where vehicles would be allowed or prohibited. The draft interim management plan established
 26 the following use zones:

- 27 • Zone 1 – Ocean Beach: In this zone ORVs will be permitted landward from 150 feet of the
 28 existing tideline, but no closer than 20 feet to the toe of the dune or vegetation line. Portions of
 29 Zone 1 may be closed seasonally (May 15 through September 15), or closed temporarily to
 30 protect nesting birds or sea turtles, or when the distance between the existing tide and the toe of
 31 the dune or the vegetation line is reduced to less than 100 feet. Permits must be issued for

1 vehicles that have less than four weight-bearing wheels and do not meet all vehicular licensing
2 and inspection requirements of their state of origin.

3 ▪ Zone 1(a) – Seasonally closed areas include:

4 Those Zone 1 areas, which due to seasonal heavy pedestrian, swimming, wildlife or other
5 use, are deemed seasonally unsuitable for ORV use;

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

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

12 Seasonally closed areas shall consist of, but not be limited to, the following areas: Bodie
13 Island, milepost 0 to milepost 3; beach areas fronting villages of Rodanthe, Waves,
14 Salvo, and Avon; northern boundary of Buxton to one mile south of the Cape Hatteras
15 Lighthouse; beach fronting the villages of Frisco and Hatteras; milepost 49 to milepost
16 54; and Ocracoke Island milepost 65 to 70.

17 ▪ Zone 1(b) – Temporarily closed sections include:

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

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

26 Sea Turtle Nests – Locations on the beach where a sea turtle nest is discovered. A
27 rectangular section of beach that includes the nest with 300 feet (92 meters) of tideline
28 seaward of the nest shall be temporarily closed to ORV use from dune to existing
29 tideline. Closures shall be marked at both ends by posting with signs indicating “no
30 ORVs –temporary turtle nest.” The period of closure shall begin on posting, 50 days after
31 the turtle lays, and shall end 25 days later on official removal of the signs. The purpose of

1 the closure is to protect hatchling loggerhead turtles, listed as “threatened” under the
2 *Endangered Species Act*.

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

20 The 1978 draft interim management plan called for a posted speed limit of 25 miles per hour and for ORV
21 operators to possess a current driver’s license from their state of origin. Except for Zone 1, the 1978 plan
22 stated that no vehicle would enter any unpaved dirt or sand trail or path, or follow any vehicular tracks not
23 posted as an ORV trail. The Seashore implemented the following plan components:

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

29 In 1980, the North District Ranger prepared the *ORV Plan North District Cape Hatteras National*
30 *Seashore* (NPS 1980). During development of the plan, the North District Ranger asked concerned
31 individuals for comments and suggestions regarding ORV use at the Seashore. Based on these comments

What happened between 1978 and 2004? Nothing? Nothing? 1999 petition to ban use of ORVs

1 and suggestions, the plan included recommendations for improvements and a general description and
2 project status of each soundside and oceanside access point from Bodie Island to Hatteras Inlet. The plan
3 recommended that the general management plan consider additional parking needs on the soundside and
4 oceanside and at comfort station locations. It also recommended that the general management plan
5 consider impacts of traffic flow changes as a result of corridor and road closures (NPS 1980, 17). The
6 general management plan addressed these concerns by incorporating additional parking lots and parking
7 turnouts along NC-12 (NPS 1984, 23).

8 The 1984 *General Management Plan/Development Concept Plan/Environmental Assessment: Cape*
9 *Hatteras National Seashore* (NPS 1984) addressed direct and indirect threats to the Seashore, with ORV
10 use cited as one such threat. The general management plan calls for additional planning and research on
11 ORV use and for monitoring impacts of ORVs, but does not set forth an ORV management plan.
12 Therefore, management of ORVs continued under the draft 1978 plan.

13 The general management plan specified five visitor experience zones. ORV use was listed as an
14 appropriate activity in three of these five zones: ocean/beach, interior dunes/maritime forests, and
15 marsh/sound. The general management plan also called for ORV use to be regulated by the 1978 draft
16 interim management plan (NPS 1978a). The plan was drafted after consideration of public comment to
17 the earlier 1978 proposed ORV management plan (NPS 1978b). The permitting portion of the 1978
18 proposed plan was controversial and was removed before release of the 1978 *Draft Interim Management*
19 *Plan: Off-Road Vehicle Use, Cape Hatteras National Seashore* (NPS 1978a).

20 In 2004 the Seashore issued Superintendent's Order #07, *ORV Management* to resolve ORV issues
21 created by Hurricane Isabel, which flattened sand berms and exposed areas of the Seashore to ORV use
22 that the berms once protected from such use (NPS 2004c). After reviewing the 1984 general management
23 plan, the Superintendent decided that parts of the 1978 draft interim management plan (permitting
24 sections excluded) would be used as Seashore guidance pending development of a long-term ORV
25 management plan and special regulation.

26 The ~~Interim Protected Species Management Strategy/EA~~ (strategy/EA), published in 2006, was prepared to
27 ensure the proper management of protected species and to comply with the *Endangered Species Act*,
28 while providing for use of the Seashore's recreational resources until an ORV plan/EIS for the Seashore
29 could be completed. The species addressed in the strategy/EA are those specifically affected by
30 recreational use within the Seashore that are listed either federally or by the state as threatened,
31 endangered, or species of special concern and/or are of special concern to the Seashore.

Be consistent with capitalizations et italics for document names

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1 To implement the interim strategy, the NPS completed an EA in accordance with NEPA, and evaluated
 2 several alternatives in the interim strategy/EA. Alternative D, as modified in the *Finding of No Significant*
 3 *Impact* (NPS 2007a) of the strategy/EA was identified as the selected alternative. Alternative D outlines a
 4 multifaceted strategy (including an increased program of monitoring, recreational and ORV closures,
 5 education and enforcement) for minimizing impacts to wildlife, threatened and endangered species, and
 6 other protected species, from visitor uses, including ORV use.

7 The USFWS Raleigh Field Office prepared a Biological Opinion associated with the interim strategy/EA
 8 in response to their review of the Cape Hatteras National Seashore's biological assessment (NPS 2006c,
 9 January 6, 2006), the *Cape Hatteras National Seashore Interim Protected Species Management*
 10 *Strategy/EA* (NPS 2006a, January 18, 2006), and other sources of published and unpublished biological
 11 information. The Biological Opinion evaluated the proposed action of the interim strategy/EA and its
 12 potential impact to protected species at the Seashore. The USFWS concluded that incidental take of
 13 protected species would occur from management actions under the interim strategy/EA, but that this level
 14 of anticipated take during the limited period the interim strategy/EA would be in effect is not likely to
 15 result in jeopardy to the species or destruction or adverse modification of designated or proposed critical
 16 habitat (USFWS 2006, 75).

17 In October 2007, a lawsuit was filed against the NPS alleging inadequacies in management of protected
 18 species at the Seashore and failure of the Seashore to comply with NPS regulations regarding ORV use
 19 (see Litigation, below). On April 30, 2008, a consent decree was issued to settle the lawsuit. The consent
 20 decree modifies the actions analyzed in the Biological Opinion and requires the NPS to follow the interim
 21 strategy/EA, except as modified by the provisions of the consent decree. Modifications in the interim
 22 strategy/EA and the consent decree include changes to the buffers provided for various species at the
 23 Seashore, as well as added restrictions related to night driving.

24 **LITIGATION**
 which one?

25 This plan/EIS was developed partially as the result of two petitions for rulemaking submitted to the NPS.
 26 The first, submitted on December 9, 1999, requested a ban on the use of all-terrain vehicles, dune
 27 buggies, sand buggies, and other four-wheel drive vehicles on all off-road areas in the national park
 28 system. The second petition, specific to Cape Hatteras National Seashore, submitted on June 7, 2004,
 29 requested Rulemaking Governing Off-Road Vehicle Use in the Cape Hatteras National Seashore.
 30 Petitioners claimed the Seashore's informal authorization of ORV use violated the Endangered Species
 31 Act, Executive Orders and federal regulations regarding ORV use in the National Parks, the NPS Organic

This petition is not mentioned in "Summary" section above.

This is a very long "Summary."

1 Act of 1916, the General Authorities Act of 1970, the Cape Hatteras National Seashore enabling
2 legislation, and various NPS management policies.

3 In May 2005 Defenders of Wildlife issued a notice of intent to sue the NPS for alleged violations of the
4 Endangered Species Act. Partly as a result of this, the Seashore prepared the previously described interim
5 strategy/EA for use while developing a long-term ORV management plan. A lawsuit was filed in October
6 2007 claiming the interim strategy/EA violated the Endangered Species Act, failed to protect species at
7 Cape Hatteras National Seashore, and failed to comply with the requirements of the ORV executive
8 orders and NPS regulations on ORV use. In April 2008, the U.S. District Court Judge signed a consent
9 decree to settle the lawsuit. The consent decree, which is enforceable by the court, provides for specific
10 species protection measures and requires the NPS to complete the ORV management plan/EIS and
11 required special regulation by December 31, 2010 and April 11, 2011 respectively. (See Appendix X for a
12 more detailed Seashore ORV-related chronology.)

The "overview" document is quite helpful in comparison to all this text. May be better to include it here & not bury it in the Appendix.

13 **SUMMARY OF EXISTING RESEARCH**

14 [update when literature review is complete]

15 Potential impacts to the natural environment from ORV use at the Seashore were examined in the
16 *Determination of Status of Existing Natural Resource Impacts from Recreational Use of Cape Hatteras
17 National Seashore: Literature Review* (Perry and Mitchell nd. 3). The literature review was part of an
18 effort to assist the management of Cape Hatteras National Seashore in making management decisions
19 regarding ORV use. The literature review compiled a database of 1,012 relevant citations, 89 of which
20 were specific to ORV use and habitat disturbance. These citations covered five major categories: (1)
21 references pertaining to fauna; (2) references pertaining to sand/sediment processes; (3) references
22 pertaining to vegetation; (4) references pertaining specifically to Cape Hatteras National Seashore; and
23 (5) all other subjects.

recent?

24 In the first category, a total of 30 sources discussed the negative impacts of ORVs on bird populations in
25 general. These sources concluded that negative impacts are higher in a stable coastal dune system due to
26 the natural processes of a dune ecosystem, their relationship to bird habitat, and the potential for
27 disruption of bird breeding and nesting behavior from ORV use. The studies concluded that ORV use is
28 the highest during breeding season, pedestrian impacts account for more than half the disturbances to
29 birds, and that natural forces have a greater impact than ORVs. Many specific studies on endangered
30 species, such as the piping plover, show well-documented effects from ORVs. Although the studies in
31 this category documented impacts to birds from ORV use, research was lacking on the effectiveness of
32 management plans.

as compared to what - a dynamic coastal dune system?

direct or indirect?

Such as?

**Overview of Off-Road Vehicle Management
Cape Hatteras National Seashore**

- Why?*
- 1937 **July.** Cape Hatteras becomes nation's first national seashore.
- 1940 **June.** Cape Hatteras is redesignated as a National Seashore Recreation Area. Enabling legislation allows hunting in certain areas of the park unit.
- 1954 **North Carolina State Highway 12 (NC-12)** was paved, providing a formal transportation route for local residents
- 1963 Completion of Bonner Bridge, connecting Bodie and Hatteras Islands
- 1972 **February.** Executive Order No. 11644, *Use of Off-Road Vehicles on the Public Lands.*
- December.** Report of Jackson S. Price, Special Assistant to the Director of the National Park Service on the use of over-sand vehicles at national seashores (Fire Island, Cape Cod, Assateague Island, Cape Hatteras.)
- 1973 **March.** Cape Hatteras NS Superintendent Barbee transmits draft regulations to Southeast Regional Office.
- 1977 **May.** Executive Order No. 11989, *Off-Road Vehicles on Public Lands.*
- In response to E.O. 11989, Cape Hatteras initiates the development of an ORV management plan
- 1978 **January.** CAHA issues draft of *A Proposed New Plan for Management of Off-Road Recreational Vehicle Use in Cape Hatteras National Seashore.*
- North Carolina Beach Buggy Association issues their initial analysis of a proposed plan (released January 5, 1978) for management of off-road vehicles at CAHA.
- February.** Outer Banks Preservation Association issues *Proposed Alternate Plan for Management of Off-Road Recreational Vehicles in the Cape Hatteras National Seashore.*
- May.** USFWS releases *Public and Wildlife Use on Beaches of Pea Island National Wildlife Refuge.*
- November.** CAHA issues draft of *Interim Management Plan: Off-Road Vehicle Use, Cape Hatteras National Seashore.*
- 1979 **August.** *Cape Hatteras National Seashore: Environmental Analysis of Off-Road Vehicle Use with Alternatives* by Tony Barnes, Landscape Architect.
- 1980 **October.** North District Ranger prepares *ORV Plan: North District, Cape Hatteras National Seashore*
- 1981 **July.** *Environmental Assessment* (for General Management Plan), Cape Hatteras National Seashore. Page 72-74, Offroad Vehicle Use. "There was general public support for the [1978] interim plan ; therefore, park management has determined the plan will be adopted. Those portions of the plan that can be implemented under existing regulations are being initiated..."
- 1984 **January.** *General Management Plan*, Cape Hatteras National Seashore. Page iii states that "The plan [GMP] proposes . . . controlling offroad vehicles." However, the GMP does not specifically address the issue. For example, on page 21, it states: "Selected beaches will continue to be open for ORV recreational driving and in conjunction with surf fishing in accordance with the existing use restrictions."
- May.** U.S. District Court (Massachusetts) issues summary of rulings in *Conservation Law Foundation vs. William Clark* (Civil Action No. 81-1004-N. [Question for court was whether or not ORV use is generally an appropriate recreational activity without regard to history of such use or economic considerations.]
- 1985 **December.** Fish and Wildlife published final rule listing the piping plover as endangered in the Great Lakes watershed and threatened along the Atlantic Coast and in the Great Plains region.
- 1986 **September.** Southeast Regional Off-Road Vehicle Task Force issues report following meeting in Charleston, July 8-9, 1986.
- 1988 **June.** U.S. District Court (Massachusetts) issues Memorandum and Order in *Conservation Law Foundation vs. Donald Hodel* (Civil Action No. 81-1004-N. [Judgement for the defendants.]
- 1990 **January.** CAHA sends *Proposed Special Regulations – Oversand Vehicle Use, Cape Hatteras National Seashore* to the Southeast Regional Office for processing.

Needs to be spelled out in the text.

What did SERO do with them?

What did the Director do with them?

- 1990
 May. SERO forwards *Proposed Special Regulations* to the Director, National Park Service.
- 1996 **December.** Defenders of Wildlife files lawsuit to require the FWS to designate critical habitat for the Great Lakes population of the piping plover. *Defenders of Wildlife and Piping Plover v. Babbitt*, See: 66 FR 22938 – 01 for case summary. Case # 96CV02965
- 1997 Lawsuit filed against FWS to require it to designate critical habitat for the Northern Great Plains population. See: 66 FR 22938 – 01 for summary. Case # 97CU000777
 Piping plover critical habitat lawsuits combined.
- 1999 **December.** A petition was submitted on behalf of Bluewater Network and 70 environmental organizations, requesting rulemaking for some affected parks in the national park system. Cape Hatteras NS was specifically mentioned as one of those parks.
- 2000 **December.** Court rules in favor of Defenders of Wildlife and directs FWS to designate critical habitat for Great Lakes and Northern Great Plains piping plover populations. See: 66 FR 22938 – 01 for summary.
- 2001 **May.** FWS publishes original final rule designating critical habitat for Endangered Great Lakes piping plover populations in Federal Register. http://www.fws.gov/midwest/endangered/pipingplover/final_rule.pdf
July. FWS publishes final rule designating critical habitat for wintering piping plover populations in Federal Register. http://www.fws.gov/plover/FR_notice/index.html
- 2003 **February.** Dare and Hyde Counties and the Cape Hatteras Access Preservation Alliance (CHAPA) file lawsuit challenging the FWS 2001 designation of four units of critical habitat on the Cape Hatteras National Seashore. *Cape Hatteras Preservation Alliance v. U.S. Department of the Interior*, 344 F-supp. 2d 108 (D.D.C. 2004)
- (*) 2004 **May.** Superintendent's Order #07, ORV Management, was issued, which aimed to resolve ORV issues created by Hurricane Isabel
June. Petitions for Rulemaking Governing Off-Road Vehicle Use in Cape Hatteras National Seashore was submitted by the National Parks Conservation Association, the Wilderness Society, and the Natural Resources Defense Council to the Secretary of the Interior, the Director of the NPS, and the Superintendent of the Seashore.
November. Court rules that USFWS must reconsider habitat designation. Document source
- 2005 **February.** Cape Hatteras NS explores Negotiated Rulemaking process for ORV regulation.
March. CAHA press release: Environmental Mediation Services/Consensus-building Institute will conduct feasibility assessment of ORV Negotiated Rulemaking process.
May. Defenders of Wildlife issues a notice of intent to sue the NPS for alleged violations of the Endangered Species Act, 16 USC 1531 et seq., the National Environmental Policy Act, 42 USC 4321 et seq., the Migratory Bird Treaty Act, 16 USC 703 et seq., the NPS Organic Act, 16 USC 1601 et seq., and the enabling legislation for Cape Hatteras National Seashore, 50 Stat. 669 (1937)
August. CAHA releases call for proposals for representatives in Negotiated Rulemaking process.
October. Information meetings on Interim Protected Species Management Strategy/EA
November. Public scoping meetings on Interim Protected Species Management Strategy/EA
December. Final list of representatives in Negotiated Rulemaking process released by Consensus-building Institute.
- 2006 **January – March.** Draft Interim Protected Species Management Strategy/EA available for public comment. ^{30-day}
 Biological Assessment of the CAHA Interim Protected Species Management Strategy/EA preferred alternative submitted by the NPS to the FWS.
February. Public scoping meetings on the CAHA Interim Protected Species Management Strategy/EA preferred alternative D.
March. USGS publishes the Management, Monitoring and Protection Protocols for Threatened and Endangered Species and Species of Special Concern at Cape Hatteras national Seashore. <http://parkplanning.nps.gov/document.cfm?parkID=358&projectId=13331&documentID=12970>
April. US Institute for Environmental Conflict Resolution/Consensus-building Institute release final feasibility report on Negotiated Rulemaking for ORV use at Cape Hatteras.
 The proposed list of negotiated rulemaking representatives was released.

initiation / development?

- June.** FWS proposes four amended habitat areas along coastal areas in Dare and Hyde counties.
http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2006_register&docid=fr12jn06-33
- August.** USFWS releases Biological Opinion for Cape Hatteras National Seashore Interim Protected Species Management Plan. <http://parkplanning.nps.gov/document.cfm?parkID=358&projectID=13331&documentID=16579>
- December.** Defenders of Wildlife sends Notice of Intent to Sue the NPS for violations of the Endangered Species Act in Connection with the Biological Opinion and the Interim Protected Species Management Plan/EA.
<http://parkplanning.nps.gov/document.cfm?parkID=358&projectID=13331&documentID=17700>
- Cape Hatteras releases a final Notice of Intent to Begin the Off-Road Vehicle Management Plan and Environmental Impact Statement process.
- 2007**
- February.** First collaborative Negotiated Rulemaking meeting held on ORV plan. "Participating in the Negotiated Rulemaking Process"
- NPS issues ORV newsletter with additional information on the ORV planning process
- NPS issues public meeting schedule for Off-Road Vehicle Management Plan/EIS
- First public meetings held for ORV Management Plan/EIS
- March.** NPS submits request for reconsultation to FWS including new performance measures
- April.** FWS releases Amendment to Biological Opinion regarding Interim Protected Species Management Plan/EA.
- May.** Seashore holds second workshop on the proposed Negotiated Rulemaking Committee.
- June.** Cape Hatteras NS releases Draft Notice of Intent to create a Negotiated Rulemaking Committee in Federal Register
- July.** NPS releases Finding of No Significant Impact (FONSI) for CAHA Interim Protected Species Management Plan/EA.
- District court files court order stating that without management plan, beach driving on CAHA is unlawful
- October.** Southern Environmental Law Center filed suit on behalf of Defenders of Wildlife and the National Audubon Society, challenging the failure of the National Park Service to have an adequate off-road vehicle management plan to protect the resources of the Cape Hatteras National Seashore.
<http://parkplanning.nps.gov/document.cfm?parkID=358&projectID=13331&documentID=21175>
- December.** Notice of Establishment of Negotiated Rulemaking Advisory Committee published in Federal Register.
- Public Information meeting schedule for meetings on Preliminary Alternative options for ORV Management Plan/EIS released
- Alternatives workbook for ORV Management Plan/EIS open for public comment through February
- 2008**
- January.** First Negotiated Rulemaking meeting held for the CAHA ORV Plan.
- CAHA extends public comment date on Alternatives Workbook
- Alternatives development Public meetings held for ORV Plan/EIS
- February.** Southern Environmental Law Center files Motion for Preliminary Injunction to enjoin the NPS from allowing any ORV driving (except for essential vehicles) in the critical areas on the Seashore as described in the "Moderate Protection" recommendations of the USGS Management Protocols for piping plovers, colonial waterbirds, and American oystercatchers and in the USGS Management Protocol for Piping Plover.
http://www.defenders.org/resources/publications/programs_and_policy/in_the_courts/cape_hatteras_-_memo_for_preliminary_injunction.pdf?ht=
- CAHA holds second Negotiated Rulemaking Advisory Committee meeting for ORV Plan.
- CAHA publishes notice in Federal Register with meeting schedule for Negotiated Rulemaking Advisory Committee meetings 3, 4, and 5 for ORV Plan.
- March.** Department of Interior (NPS) responds to Motion for Preliminary Injunction.
<http://parkplanning.nps.gov/document.cfm?parkID=358&projectID=13331&documentID=22478>
- USFWS issues Second Amendment to Biological Opinion.
<http://parkplanning.nps.gov/document.cfm?parkID=358&projectID=13331&documentID=23770>

CAHA holds third Negotiated Rulemaking Advisory Committee meeting for ORV Plan.

April. All parties in *Defenders of Wildlife et al. against the NPS lawsuit* file and approve proposed consent decree that closes certain historic pre-nesting areas for piping plovers and other shorebirds, to vehicles and pedestrians and expands buffers around breeding sites with nests and chicks.
http://www.defenders.org/resources/publications/programs_and_policy/in_the_courts/cape_hatteras_orv_consent_decree.pdf?ht=

May. USFWS revises critical 2006 habitat designations to add to previously proposed sites .

CAHA holds fourth Negotiated Rulemaking Advisory Committee meeting for ORV Plan.

June. CAHA holds fifth Negotiated Rulemaking meeting for ORV Plan.

July. CAHA publishes notice in Federal Register with meeting schedule for Negotiated Rulemaking Advisory Committee meetings 6, 7, 8, and 9 for ORV Plan.

September. *Economic Analysis of Critical Habitat Designation for the Wintering Piping Plover.*
[http://www.regulations.gov/fdmspublic/ContentViewer?objectId=090000648077ebe6&disposition=attachment&contenttype=pdf.](http://www.regulations.gov/fdmspublic/ContentViewer?objectId=090000648077ebe6&disposition=attachment&contenttype=pdf)

CAHA holds sixth Negotiated Rulemaking meeting for ORV Plan.

October. Press Release by USFWS designating critical habitat for wintering piping plover in N. Carolina, including parts of Cape Hatteras National Seashore. <http://www.fws.gov/southeast/news/2008/r08-050.html>

CAHA holds seventh Negotiated Rulemaking meeting for ORV Plan.

November. CAHA holds eighth Negotiated Rulemaking meeting for ORV Plan.

CAHA releases "Summary List of Options" from Alternatives Workbook public comment period.

CAHA publishes notice in Federal Register with meeting schedule for Negotiated Rulemaking Advisory Committee meetings 10, 11 and 12 for ORV Plan.

What happens next?

Target / Goals / Consent Decree Timelines

2010 —

2011 —

- Are these true for all locations &/or are these all of data relevant to CPHA?

1 In the remaining categories, the research showed:

- 2 • ORV traffic has a negative impact on sand and sediments due to compaction, decreased infiltration, and moisture availability. *by how much?*
- 3
- 4 • ORV traffic causes direct damage to vegetation, and indirect impacts to adjacent, non-dune plant communities need to be addressed further.
- 5
- 6 • ORV traffic has a negative direct impact on the ability of soil to support dune vegetation due to changes in moisture retention, soil compaction, and soil salinity. Indirect impacts need further examination.
- 7
- 8

9 The studies discussed in the literature review, as well as other studies, demonstrate that ORVs do have an impact to coastal ecosystems, including wildlife and vegetation. Further study was suggested to determine the level of these impacts and the effectiveness of management measures.

12 SCOPING PROCESS AND PUBLIC PARTICIPATION

13 A notice of intent was published in the Federal Register on December 11, 2006, to announce the beginning of the ORV ^{NEPA} planning process. To determine the scope of issues to be analyzed in depth in this plan/EIS, meetings were conducted in February and March of 2007 with Seashore staff, other parties associated with preparing this document, and members of the public. Additional public meetings were held in January 2008 to examine the range of alternatives and provide input on alternative elements. In response to public input and issues raised during the scoping process, the interdisciplinary planning team reworked the preliminary alternatives to those analyzed in this plan. Chapter 5 of this plan/EIS contains more details about agency and public scoping activities that were an integral part of the planning process for this plan/EIS.

← Explain NEPA + EIS development to same extent as Negotiated Rulemaking process

23 REGULATORY NEGOTIATION PROCESS

24 The *Negotiated Rulemaking Act of 1990* (5 USC 561-570) establishes a statutory framework for agency use of negotiated rulemaking to reach a consensus with stakeholders on a proposed regulation. Concurrent with the NEPA process, the Seashore is using a negotiated rulemaking process to develop a proposed rule for long-term ORV management at the Seashore. Because negotiated rulemaking allows interested, affected parties more direct input into the development of the proposed regulation, NPS expects the negotiated rulemaking process to result in a rule that is sensitive to the needs and limitations of both the parties and the agency. In January 2008, the regulatory negotiation committee was formally established

as compared to what? ~~Why doesn't it have NEPA document?~~

This may need more explanation OR NEPA may need better explanation

NEPA

Negotiated Rulemaking
These are separate planning processes & clearly identified as such.

1 and committee members began to work toward a consensus recommendation, which is included as
2 alternative F in this plan/EIS [modify when decision is made on reg-neg alternative].

3 **ISSUES AND IMPACT TOPICS** ← Define Issue + Impact Topic.

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

8 **FLOODPLAINS AND WETLANDS**

Wetlands

9 Although the entire shoreline of the Seashore is classified as a wetland (Cowardin et al. 1979, 1),
10 wetlands are of particular concern where ORV use can damage vegetation and impact wildlife habitats or
11 where wetland habitat is decreasing. On Bodie Island spit at Oregon Inlet, wetland habitat has been lost
12 due to accretion. The terminal groin constructed at Pea Island has stopped the natural accretion process
13 from moving south. Although Pea Island stopped moving south, Bodie Island continues to do so, filling
14 Oregon Inlet. Therefore, the U.S. Army Corps of Engineers (Corps) conducts ongoing maintenance
15 dredging of Oregon Inlet. The Corps agreed to mitigate impacts resulting from this dredging activity and
16 proposed reducing the elevation of the spit to create low spots and foraging habitat for piping plover. As
17 these wetland habitats become more limited, damage from ORV use is of increasing concern at the
18 Seashore. [define terminal groin and accretion in sidebar]

19 Estuarine wetlands are often denuded of vegetation when ORVs are driven and parked along the
20 soundside shoreline. Many of the interior roads (upper beach/ beach access ramps or soundside trails)
21 cross wetlands that do not have standing water all year. When standing water is present along an ORV
22 route, drivers often attempt to drive around the water and over adjacent vegetation. This results in wider
23 roads, new vehicle routes, and crushed or dead vegetation. Construction of parking areas is also of
24 concern for small wetlands that may be located nearby.

A State ment of Piping wetlands is required if included (or not)

Floodpl

25 ~~all~~ of the Seashore is located within the 100-year floodplain. In this plan/EIS, the issue of floodplains is
26 considered under any alternative that includes development, such as expanding or changing existing
27 parking lots, because these actions have the potential to impact the function and value of the floodplain.

A Statement of Floodplains is included & Required. (or not)

28 **WILDLIFE AND WILDLIFE HABITAT**

29 Cape Hatteras National Seashore provides important habitats and plays a vital role in the survival of many
30 wildlife species. Whether for nesting, resting, foraging, or feeding, the Seashore provides for a diverse

The Seashore is habitat for 80000 birds. ^{birds} ^{not all affected by ORVs.} ^{December 8, 2008}

1 assemblage of birds. Rich, varied habitats and the Seashore's location along the Atlantic Flyway attract
2 birds. In 1999, the American Bird Conservancy designated Cape Hatteras National Seashore as a Globally
3 Important Bird Area in recognition of the Seashore's value in bird migration, breeding, and wintering
4 (American Bird Conservancy 2005, 1). This diverse ecosystem includes both those species that sensitive
5 species rely on for survival, and predators of sensitive species. ORV use along the Seashore can disrupt
6 habitat or cause a loss of habitat in high use areas. Habitat loss due to ORV use could also occur

Mammals
Reptiles
Amphibians
Insects
Fishes
Forest
Shrublands
Marsh
Lawn

indirectly as a result of the noise and disturbance from this activity.
7 **TERRESTRIAL ? SEMI AQUATIC ?**
8 Invertebrates are impacted by ORV use. A recent study at the Seashore researched the ghost crab
9 (*Ocypode quadrata*) as an indicator of ecosystem health, since it may show the impacts of ORVs and
10 other recreational uses. The study considered the impacts of ORVs on ghost crab population densities and
11 recovery rates in relation to ORV use and usage regulations. Data to determine the impacts of off-road
12 vehicles on crab populations was collected in several areas in the Seashore. Closures of the beaches to
13 vehicles were initiated to study short-term effects and recovery rates. It was found that ORVs had a
14 detrimental impact on ghost crab populations at the Seashore and that areas subject to vehicle use had
15 significantly fewer ghost crab burrows than those areas without vehicles. As shown by Steiner and
16 Leatherman (1981, 111), ghost crabs can be killed or mortally injured by ORVs driving over them, or by
17 altering their environment. This study concluded that high-energy weather events change the dynamics of
18 the population, allowing more ghost crabs to inhabit the area, but ORVs reduce the ability for ghost crabs
19 to inhabit the area (VIMS 2004, 47).

20 **RARE, UNIQUE, THREATENED, AND ENDANGERED SPECIES**

21 **Federally Listed Threatened and Endangered Species**

Have there been no occurrences or documented impacts?

22 ORV use at the Seashore could impact federally threatened or endangered species and their habitats on
23 the Seashore's soundside and ocean beaches. Conflicts between listed species and recreational use
24 (including ORV use) could create direct or indirect losses to a listed species. The Seashore is home to
25 federally threatened and endangered species year round. Increased year-round visitation results in a
26 greater potential for conflicts between visitor use and listed species. The Seashore is used by both the
27 Great Lakes population of piping plover (for wintering) and the Atlantic Coast population (for breeding
28 and wintering). Seabeach amaranth, a federally listed plant species, has been found in limited numbers at
29 the Seashore. According to the USFWS, seabeach amaranth has been eliminated from two-thirds of its
30 historic range and one of the most serious threats to its continued existence is disturbance by ORVs.

31 Nesting sea turtles at the Seashore include the loggerhead, green, and leatherback turtles, and Kemp's
32 ridley turtles are occasional visitors. Threats to listed sea turtles, their nesting sites, and young include

1st mention of turtles.

DRAFT – December 8, 2008

1 storm events, predation, pedestrian disturbance, ORV use, artificial lighting, pets, and recreational beach
2 equipment.

3 In May 2008, the red knot was listed as a candidate for the endangered or threatened species list. This
4 species is a migrant and occasional winter resident at the Seashore.

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

8 **State-Listed and Special Status Species**

9 Habitat for state-listed and special status species, such as the American oystercatcher and colonial
10 waterbirds, may be vulnerable to disturbances caused by recreational uses, including ORV use. As of May
11 2008, the American oystercatcher, Wilson's plover, least tern, common tern, and black skimmer were
12 listed by the North Carolina Wildlife Resources Commission (NCWRC) as species of special concern.
13 The NCWRC also lists the gull-billed tern as a state-threatened species. The American oystercatcher is
14 listed as a species of concern by the Southeastern Shorebird Conservation Plan, and both the American
15 oystercatcher and the Wilson's plover are identified in the U.S. Shorebird Conservation Plan as "Species
16 of High Concern." All these state-listed or special status species have had historically low reproductive
17 rates. The lack of large undisturbed areas for successful breeding contributes to these low rates at the
18 Seashore. Frequent human disturbance can cause the abandonment of nest sites as well as direct loss of
19 eggs and chicks.

RETAIN

20 **SOUNDSCAPES [NEED TO SEE IF THIS STAYS AS A TOPIC OR IS MOVED TO DISMISSED]**

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

④ LIGHTSCAPES

26 **VISITOR USE AND EXPERIENCE**

27 ORV use at the Seashore is an integral component of the experience for some visitors and may be
28 impacted by ORV management activities. Other Seashore visitors who are not using ORVs may be
29 impacted by ORV use. Currently, the mix of recreational users at the Seashore includes a variety of users
30 such as ORV users, day-users without vehicles, swimmers, anglers, bird watchers, and other users.

1 Although some visitors want to use an ORV to access the Seashore, other visitors wish to engage in
 2 recreational activities on foot and away from the presence of motorized vehicles. Restricting ORVs from
 3 areas of the Seashore could enhance the recreational experience for some and diminish the experience for
 4 others. Visitor experience could be affected by conflicts between motorized and non-motorized recreation
 5 users. A further component of visitor experience is providing for the safety of all visitors at the Seashore.
 6 Other issues related to visitor use and experience include viewsheds, aesthetics, and night skies. While the
 7 sight of ORVs can destroy the viewshed and aesthetics for some visitors, they also change the viewshed
 8 by altering the natural landscape. Some visual signs of ORVs include tire ruts and markings and trash left
 9 behind. ORV use impedes or destroys coastal features like wave or wind ripples in the sand, tide wrack
 10 lines, overwash deposits, wind sorted sediments, dune formation, etc. As an example, the burrows of
 11 ghost crabs, the most common beach inhabitants, are nearly absent from beaches where ORVs are
 12 allowed. Installing posts around closure areas for protected species from ORVs could also impact the
 13 views and aesthetics of the area for those who want a natural view without evidence of man-made
 14 materials.

Resource Impact -
 This is not just an aesthetics issue.

15 Headlights and other artificial lights associated with nighttime ORV use may affect visitors' opportunities
 16 to enjoy night skies at the Seashore. Conversely, lack of artificial lights may make it more difficult to see,
 17 posing hazards to ORV users and pedestrians. Issues related to night skies include night driving,
 18 headlights, campfires, and all other light uses associated with human activity after dusk. The Seashore is
 19 one of the few places on the Atlantic Coast where visitors can experience the magnificence of a dark night
 20 sky. The Seashore has been ranked, along with Cape Lookout National Seashore, as the 9th best place to
 21 view the night sky by the NPS Night Sky Program. ORV use at night has the potential to affect visitor
 22 experience of the brilliance of the night sky. In addition to visitors, animals are also impacted by lights at
 23 night. The stars, planets, and moon are visible during clear nights and influence many species of animals,
 24 such as birds that navigate by the stars or prey animals that reduce their activities during moonlit nights.

25 Additionally, the phosphorescence of waves on dark nights helps sea turtle hatchlings orient to the ocean.
 26 Excessive artificial light has the potential to disorient turtle hatchlings and disrupt their crawl to the
 27 ocean. Pursuant to NPS Management Policy 4.10 (NPS 2006b, 54), to prevent the loss of natural night
 28 skies, the NPS should minimize light that emanates from park facilities, and also seek the cooperation of
 29 park visitors, neighbors, and local government agencies to prevent or minimize the intrusion of artificial
 30 light into the night scene of the ecosystems of parks. Furthermore, the NPS will not use artificial lighting
 31 in areas such as sea turtle nesting locations where the presence of the artificial lighting could disrupt a
 32 park's dark-dependent natural resource components (NPS 2006b, 54). Impacts of artificial light sources
 33 on animals will be discussed in Chapters 3 and 4 under the wildlife and wildlife habitat impact topics.

1
 25
 26
 27
 28
 29
 30
 LIGHT SCAPES
 RESOURCE
 ENVIRONMENT

Light impacts on turtles should be discussed before visitor enjoyment of dark skies.

1 **SOCIOECONOMICS**

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

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

15 **SEASHORE MANAGEMENT AND OPERATIONS**

16 **MANAGING +** Accommodating recreational uses while protecting sensitive species requires a sufficient number of
17 personnel and an adequate level of funding. Anecdotal evidence suggests that the Seashore currently does
18 not have enough personnel to properly enforce existing ORV management decisions. Operational needs
19 related to implementing an ORV management plan that require direct NPS staff oversight of or
20 involvement in management activities would require an increased commitment of limited NPS resources
21 (staff, money, time, and equipment).

NATURAL + CULTURAL RESOURCES - All of them!

22 **ISSUES CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS**

23 The following issues were dismissed from further analysis, as explained below:

- 24 • **Geologic resources:** ORV use may also impact the ocean beach at Cape Hatteras National
25 Seashore by disturbing sand, compacting sand, creating ruts, and changing local topography.
26 However, the Seashore is part of a dynamic coastal barrier ecosystem, and effects of ORV and
27 other visitor use can change in a matter of hours by daily tidal action, winds, rain, hurricanes, and
28 other storm events. Although ~~ORV use could~~ ^{Unmanaged} impact geologic resources if ORVs are driven
29 through dunes where there is no marked trail or designated ramp, ramp use is provided and
30 enforced, and ORVs cutting through dunes in areas not designated as ramps are rare occurrences.
31 ORVs can impact beach escarpments, causing them to collapse and creating hazards to visitors

Data? Professional opinion of whom? Should not be dismissed.

1 and affecting habitat for turtles. However, these secondary impacts are addressed under the
2 impact topics of wildlife, threatened and endangered species, and visitor use. Therefore, geologic
3 resources was not retained as an impact topic.

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

effect OR would be affected

define 15 Inlet Hazard being dismissed by saying this?

6 • **Unique Ecosystems, Biosphere Reserves, World Heritage Sites:** There are no known biosphere
7 reserves, World Heritage sites, or unique ecosystems listed in the Seashore; therefore,
8 implementation of an ORV management plan would have no effect.

• SIGNIFICANT NATURAL HERITAGE AREAS exist within CAHA.

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

needs to be dismissed.

16 • **Wildlife and Wildlife Habitat – Fish, Marine Mammals, and Mammals:** Impacts of predators
17 on other species at the Seashore are influenced in part by the trash and food scraps human visitors
18 leave behind at the Seashore. Seashore predators include raccoons, ghost crabs, sea gulls, herring
19 gulls, bald eagles, snakes, and feral cats. An environmental assessment process for predator
20 management was initiated in 2007. The final assessment document and plan will address the
21 Seashore’s approach to native and non-native predators, specifically those species that prey on
22 federal and state-listed species present at the Seashore, and therefore those species are not
23 addressed as an impact topic in this plan/EIS. Impacts to mammals from ORV use and
24 management would be expected to be negligible. Although harassment of marine mammals could
25 occur from various park users, including those using ORVs, this would be infrequent, and the
26 plan will include measures to educate all visitors about resting marine mammals, resulting in
27 negligible to minor impacts to these species.

*Impacts to Fish?
Impacts to other Wildlife? (Reptiles, Amphibians, insects, etc.)*

28 • **Air Quality:** Cape Hatteras National Seashore is located in an area classified by the U.S.
29 Environmental Protection Agency as being in attainment for all six criteria pollutants. Despite
30 being in attainment, activities associated with ORVs (driving, idling engines, and running
31 generators) could create localized increases in air pollution, potentially degrading the visitor
32 experience and contributing to greenhouse gas emissions that have been linked to global

discuss this first. RESOURCE

1 warming. Driving on sand may be less fuel-efficient and, therefore, more polluting than driving
2 on a hard surface. [Discussion of air quality to be completed once models are completed by the
3 NPS.]

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

5 • **Streamflow Characteristics:** Actions related to ORV management would not have an effect on
6 streamflow characteristics. The proposed action would not occur in any area that would impact
7 streamflow.

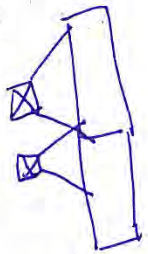
8 • **Introduce or Promote Non-Native Species:** While the potential for vehicles to bring non-native
9 species to the Seashore occurs, only a small number of non-native species can live in the salt and
10 wind of the seashore environment. *Phragmites (Phragmites australis Cav.)*, a non-native plant
11 species, is present at the Seashore, but is not likely to be transported by ORVs because its primary
12 method of colonization is by rhizomes (underground root extensions) and not by seeds, which are
13 prone to spreading by vehicle tires (Wisconsin DNR 2007, 1).

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

28 • **Historic Structures and Districts:** Structures are material assemblies that extend the limits of
29 human capability. Structure types range from buildings to bridges; locomotives to monuments;
30 temple mounds to factories and bronze statues. The Seashore contains 36 historic structures, 20 of
31 which are in good condition (NPS 2007e). Structures at the Seashore range from cemeteries to
32 entire complexes. For example, three historic U.S. Life Saving Service stations still stand at

*DISTURBANCE
by ORVs
Contributes
to
Vulnerability
of natural resources*

*Is not the only
non-native species
present.*



How is it that towers are considered to have adverse effect but vehicles on a beach don't??

⊕ ARCHAEOLOGY

⊕ VISUAL RESOURCES / VIEWPOINTS

need to be listed as Impacts as Topics analyzed or dismissed

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Chicacomoco, Little Kinnakeet, and Bodie Island. The Hatteras Weather Bureau Station and Ocracoke Light Station are listed in the National Register. The Bodie Island Light Station, Bodie Island Lifesaving/Coast Guard Station, and Cape Hatteras Light Station are listed in the National Register as historic districts. In general, ORV use does not occur in the areas surrounding standing structures, because structures are located off the beach in the dunes or on the soundside of the Seashore. There are two concrete pad foundations (not standing structures), one of which is at Cape Point, that is in an area of ORV use. These foundations are not in danger of impact from ORVs.

- **Ethnographic Resources:** An ethnographic study for Cape Hatteras National Seashore was completed in 2005 (Impact Assessment, Inc. 2005). The study looked at the eight villages in the Seashore that reflect the nearly 300-year history and culture of the Outer Banks to support the Seashore in interpretation of its cultural resources, stewardship of ethnographic resources, and community relations with the villages. Archival/documentary research and ethnographic fieldwork was completed as part of the study to further socio-cultural understanding of the villages adjoining the Seashore. The villages contain a mix of populations that have evolved from the original British settlers, European seafarers, farmers, and other more recent migrants to the Outer Banks. No discrete, continuous ethnic groups or ethnographic populations are documented at the Seashore; therefore, no ethnographic populations would be impacted by the implementation of an ORV management plan.
- **Museum Collections:** Museum objects are manifestations and records of behavior and ideas that span the breadth of human experience and depth of natural history. The Seashore has collections of artifacts on display at the Cape Hatteras lighthouse and at each visitor center. The official Seashore archives and artifact collections are housed at Fort Raleigh National Historic Site at Manteo. These various collections are not located on the ocean or soundside beaches and would not be impacted by implementation of an ORV management plan.
- **Environmental Justice:** On February 11, 1994, the President of the United States issued Executive Order 12898: Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. The executive order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. Environmental justice analyses are performed to identify the disproportionate placement of high and adverse environmental or health impacts from proposed federal actions on minority or low-income populations, and to identify alternatives that could mitigate these impacts.

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

8 Dare and Hyde counties in North Carolina had a population of 35,793 in the year 2000, of whom
9 4,185 people (12%) were minorities and 3,271 (9%) were living below poverty level. People of
10 Hispanic or Latino origin comprised 787 (2%) of the total population; 2,854 (8%) were Black or
11 African American; 107 (0.3%) were American Indian or Alaskan Native; 143 (0.4%) were Asian;
12 0 were Native Hawaiian or other Pacific Islander; 317 (0.8%) were of some other race; and 347
13 (0.9%) were of two or more races. It should be noted that persons of Hispanic or Latino origin
14 may be of any race. The only village at the Seashore that is a Census Designated Place (CDP) is
15 Ocracoke Village. Ocracoke had a population of 769 in the year 2000, of whom 30 (3.9%) were
16 minorities and 68 (9.3%) were living below poverty level.

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

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

- 30 • **Energy Resources:** This topic involves assessing energy requirements and the potential for
31 energy conservation associated with the various alternatives, but is most relevant to facility
32 construction projects. The majority of ORV use at the Seashore involves gaining access to
33 fishing areas, where vehicles are then turned off once the desired fishing spot is reached. Because

How much energy does it take for the NPS to provide management & facilities in support of ORV use + users? Management of them?

1 vehicular access to the beach would be maintained under this plan/EIS at current or reduced
2 levels, there would only be negligible impacts on energy resources, as fuel consumption would
3 not change to a large degree as a result of the implementation of this plan. The Seashore would
4 continue to operate under the wise energy use guidelines and requirements stated in the NPS 2006
5 Management Policies, Executive Order 13123 (Greening the Government Through Effective
6 Energy Management), Executive Order 13031 (Federal Alternative Fueled Vehicle Leadership),
7 Executive Order 13149 (Greening the Government Through Federal Fleet and Transportation
8 Efficiency), and the 1993 NPS Guiding Principles of Sustainable Design.

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

How are these two impact topics defined differently?

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

No NPS person has made this determination

23 • **Health and Safety:** Health and safety issues related to ORV use are discussed under the visitor
24 use topic.

25 X **Topography and Soils (Physiographic, except for Geology):** Issues related to topography and
26 soils include impacts to the sand and beach environment, which are discussed under geologic
resources. Since no other impacts would occur to soils or topographic conditions, these were not
included as separate impact topics.

Not TRVE - we just have, not look

Should not be dismissed - Establishment, Construction, Repair, Maintenance of

Dunes + Access Roads for ORVs. + Parking + other facilities to allow ORV use in designated areas.

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

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

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

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

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

What is the Director's determination on this?

20 **Executive Order 11989: Off-Road Vehicles on Public Lands**

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

date of approval?

1 **Code of Federal Regulations 36 Section 4.10 Travel on Park Roads and Designated Routes**

2 This CFR section states that “operating a motor vehicle is prohibited except on park roads, in parking
3 areas and on routes and areas designated for off-road motor vehicle use.” Additionally, routes and areas
4 designated for ORV use shall be promulgated as special regulations, with designations complying with
5 Executive Order 11644. As a result of the plan/EIS and special regulation, the Seashore will be in
6 compliance with this regulation.

7 **OTHER APPLICABLE FEDERAL LAWS, POLICIES, REGULATIONS AND PLANS**

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

1 NPS Organic Act & 3 Omnibus & 2 Redwood Amendment

12 **Code of Federal Regulations, Title 36 (1992)**

13 Title 36, Chapter 1, provides the regulations “for the proper use, management, government, and
14 protection of persons, property, and natural and cultural resources within areas under the jurisdiction of
15 the National Park Service.” These regulations are utilized to fulfill the statutory purposes of the units of
16 the National Park System: to conserve scenery, natural and historical objects, and wildlife, and to provide
17 for the enjoyment of those resources in a manner that will leave them unimpaired for the enjoyment of
18 future generations. Section 1.5 of these regulations details the NPS authority to enact closures or public
19 use limits given that the closures are “consistent with applicable legislation and Federal administrative
20 policies, and based upon a determination that such action is necessary for the maintenance of public
21 health and safety, protection of environmental or scenic values, protection of natural or cultural resources,
22 aid to scientific research, implementation of management responsibilities, equitable allocation and use of
23 facilities, or the avoidance of conflict among visitor use activities.”

24 **Code of Federal Regulation, Title 36, Section 2.15, Pets**

25 Title 36, Section 2.15, provides regulations for visitors wishing to bring pets into national park units.
26 Under this regulation, the following activities are prohibited in regards to pets:

- 27 1. Possessing a pet in a public building, public transportation vehicle, or location designated as a
28 swimming beach, or any structure or area closed to the possession of pets by the superintendent.
29 This does not apply to guide dogs accompanying visually impaired persons or hearing ear dogs
30 accompanying hearing-impaired persons.

- 1 2. Failing to crate, cage, restrain on a leash which shall not exceed six feet in length, or otherwise
- 2 physically confine a pet at all times.
- 3 3. Leaving a pet unattended and tied to an object, except in designated areas or under conditions
- 4 which may be established by the superintendent.
- 5 4. Allowing a pet to make noise that is unreasonable considering location, time of day or night,
- 6 impact on park users, and other relevant factors, or that frightens wildlife by barking, howling, or
- 7 making other noise.
- 8 5. Failing to comply with pet excrement disposal conditions which may be established by the
- 9 superintendent.

10 Where pets are allowed at the Seashore, this regulation applies. Pet issues are addressed in this plan/EIS
 11 because they are transported in ORVs and are indirectly related to this use.

12 **Code of Federal Regulations, Title 36, Section 3.6 Prohibited Operations**

13 Section 3.6 prohibits the launching of a vessel “propelled by machinery” from any location within the
 14 park other than a designated launch site. According to 3.6(i) of the Superintendent’s Compendium,
 15 designated launch sites for non-commercial, recreational boats/vessels propelled by machinery are located
 16 at Oregon Inlet Fishing Center, Ramp 23, Milepost 46 soundside access, Cable Crossing, Ocracoke
 17 Marina parking area, Prong Road, Ramp 72, South Point Road, and Quork Hammock.

18 **Coastal Zone Management Act, 1966**

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

28 The *North Carolina Coastal Area Management Act (CAMA)* establishes a cooperative program of coastal
 29 area management between local and state governments through comprehensive planning for the
 30 protection, preservation, orderly development, and management of the coastal area of North Carolina. The
 31 CAMA program was federally approved in 1978 and is the state’s CZMP under the CZMA. Localities are

1 responsible for planning while the state establishes areas of environmental concern. A project must obtain
2 a CAMA permit if it:

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

*We don't get
CAMA permits.
We do Federal
Consistency
Determinations*

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

14 **Endangered Species Act of 1973, as Amended**

15 This act requires all federal agencies to consult with the Secretary of the Interior on all projects and
16 proposals with the potential to impact federally endangered or threatened plants and animals. It also
17 requires federal agencies to use their authorities in furtherance of the purposes of the *Endangered Species*
18 *Act* by carrying out programs for the conservation of endangered and threatened species. Federal agencies
19 are also responsible for ensuring that any action authorized, funded, or carried out by the agency is not
20 likely to jeopardize the continued existence of any endangered species or threatened species or result in
21 the destruction or adverse modification of designated critical habitat.

22 **Critical Habitat Designation for Piping Plovers** *FORMAT as sub topic, under
ESA.*

23 Under the authority of the Endangered Species Act, the U.S. Fish and Wildlife Service can designate
24 critical habitat for a protected species. Critical habitat refers to specific geographic areas that contain
25 features essential for the conservation of a threatened or endangered species and that may require special
26 management or protection. On October 21, 2008, the USFWS designated the following four areas as
27 critical habitat: (1) Unit NC-1, Oregon Inlet; (2) Unit NC-2, Cape Hatteras Point; (3) Unit NC-4,
28 Hatteras Inlet; and (4) Unit NC-5, Ocracoke Island. Unit NC-1 is approximately 5 miles long, and
29 consists of about 485 acres of sandy beach and inlet spit habitat on Bodie Island and Pea Island. Unit NC-
30 2 comprises 646 acres and extends south approximately 2.8 miles from the ocean groin near the old

*within
CAMA*

*Move Detail to Affected
Environment*

1 location of the Cape Hatteras Lighthouse to the point of Cape Hatteras, and then extends west 4.7 miles
 2 along South Beach to the edge of Ramp 49 near the Frisco Campground. Unit NC-4 is approximately 5
 3 miles long and consists of 410 acres of sandy beach and inlet spit habitat on the western end of Hatteras
 4 Island and the eastern end of Ocracoke Island. Unit NC-5 consists of 502 acres on the western portion of
 5 Ocracoke Island beginning at the beach access point at the edge of Ramp 72 (South Point Road),
 6 extending west approximately 2.1 miles to Ocracoke Inlet, and then back east on the Pamlico Sound side.

7 Under section 7(a)(2) of the Endangered Species Act, if a federal action may affect a listed species or its
 8 critical habitat, the responsible federal agency must enter into consultation with the USFWS to ensure that
 9 the affected critical habitat would remain functional to serve its intended conservation role for the species.

10 **Antideficiency Act**

11 The *Antideficiency Act* prohibits federal managers from making or authorizing expenditures in excess of
 12 the amount available to them from appropriations or other funds, unless authorized by law. Based on this,
 13 the plan/EIS created must be able to be implemented through expected funding sources.

14 **Marine Mammal Protection Act, 1972**

15 The *Marine Mammal Protection Act* prohibits, with certain exceptions, the taking of marine mammals in
 16 U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine
 17 mammal products into the United States. The act defines “take” as “to harass, hunt, capture, or kill, or
 18 attempt to harass, hunt, capture, or kill any marine mammal.” It defines harassment as “any act of pursuit,
 19 torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the
 20 wild; or has the potential to disturb a marine mammal or marine mammal stock in the wild by causing
 21 disruption of behavioral patterns, including but not limited to, migration, breathing, nursing, breeding,
 22 feeding, or sheltering.” This act recognizes that some marine mammal species or stocks may be in danger
 23 of extinction or depletion as a result of human activities, and that these species or stocks must not be
 24 permitted to be depleted. The act, as amended in 1994, provides for certain exceptions to the take
 25 prohibitions, such as Alaska Native subsistence and permits and authorizations for scientific research; a
 26 program to authorize and control the taking of marine mammals incidental to commercial fishing
 27 operations; preparation of stock assessments for all marine mammal stocks in waters under U.S.
 28 jurisdiction; and studies of pinniped-fishery interactions. This act is relevant to this plan because ORVs
 29 are used to assist marine mammals that have become stranded on the beach, and ORVs allow people to
 30 access areas where these mammals rest, allowing for the possibility of harassment.

11 **Migratory Bird Treaty Act of 1918 and Executive Order 13186: Responsibilities of Federal**

Keep with next

No special Reg for park ops to use ORVs.
 Use of ORVs is Resource Mgmt, not Recreational

1 ~~Agencies to Protect Migratory Birds~~ *MBTA & EOTBIS (BID.)*

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

23 **National Environmental Policy Act, 1969, as Amended**

24 NEPA is implemented through regulations of the Council on Environmental Quality (CEQ) (40 CFR
 25 1500–1508). The NPS has in turn adopted procedures to comply with the act and the CEQ regulations, as
 26 found in *Director’s Order 12: Conservation Planning, Environmental Impact Analysis, and Decision*
 27 *Making*, and its accompanying handbook (NPS 2001). Section 102(2) (c) of NEPA requires that an EIS
 28 be prepared for proposed major federal actions that may significantly affect the quality of the human
 29 environment.

A other reasons . . .

1 **National Historic Preservation Act of 1966, as Amended**

2 Section 106 of this act requires federal agencies to consider the effects of their undertakings on properties
3 listed or potentially eligible for listing on the National Register of Historic Places. All actions affecting
4 the Seashore's cultural resources must comply with this legislation.

*define: (e.g., archaeological resources, historic properties,
cultural landscapes, museum collections)*

5 **National Parks Omnibus Management Act of 1998**

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

11 **NPS Organic Act**

12 By enacting the *NPS Organic Act of 1916*, Congress directed the U.S. Department of the Interior and NPS
13 to manage units of the national park system “to conserve the scenery and the natural and historic objects
14 and the wild life therein and to provide for the enjoyment of the same in such manner and by such means
15 as will leave them unimpaired for the enjoyment of future generations” (16 USC 1). The *Redwood*
16 *National Park Expansion Act of 1978* reiterates this mandate by stating that the NPS must conduct its
17 actions in a manner that will ensure no “derogation of the values and purposes for which these various
18 areas have been established, except as may have been or shall be directly and specifically provided by
19 Congress” (16 USC 1 a-1).

20 Despite these mandates, the *Organic Act* and its amendments afford the NPS latitude when making
21 resource decisions that balance visitor recreation and resource preservation. By these acts Congress
22 “empowered [the NPS] with the authority to determine what uses of park resources are proper and what
23 proportion of the park's resources are available for each use” (*Bicycle Trails Council of Marin v. Babbitt*,
24 82 F.3d 1445, 1453 [9th Cir. 1996]).

25 Courts consistently interpret the *Organic Act* and its amendments to elevate resource conservation above
26 visitor recreation. *Michigan United Conservation Clubs v. Lujan*, 949 F.2d 202, 206 (6th Cir. 1991) states:
27 “Congress placed specific emphasis on conservation.” The court in *National Rifle Association of America*
28 *v. Potter*, says “in the *Organic Act* Congress speaks of but a single purpose, namely, conservation.” The
29 *NPS Management Policies 2006* also recognize that resource conservation takes precedence over visitor
30 recreation. The policy dictates: “when there is a conflict between conserving resources and values and
31 providing for enjoyment of them, conservation is to be predominant” (NPS 2006b, sec. 1.4.3, 10).

1 Because conservation remains predominant, the NPS seeks to avoid or to minimize adverse impacts on
2 park resources and values. Yet, the NPS has discretion to allow negative impacts when necessary (NPS
3 2006b, sec. 1.4.3, 10). While some actions and activities cause impacts, the NPS cannot allow an adverse
4 impact that constitutes resource impairment (NPS 2006b, sec. 1.4.3, 10). Specifically, NPS *Management*
5 *Policies 2006*, Section 1.4.3.1 states: “In the administration of authorized uses, park managers have the
6 discretionary authority to allow and manage the use, provided that the use will not cause impairment or
7 unacceptable impacts.” The *Organic Act* prohibits actions that permanently impair park resources unless a
8 law directly and specifically allows for the action (16 USC 1a-1). An action constitutes “an impairment”
9 when its impacts “harm the integrity of park resources or values, including the opportunities that
10 otherwise would be present for the enjoyment of those resources or values” (NPS 2006b, sec. 1.4.5, 11).
11 To determine impairment, the NPS must evaluate “the particular resources and values that would be
12 affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and
13 the cumulative effects of the impact in question and other impacts” (NPS 2006b, sec. 1.4.5, 11).

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

- 18 • be inconsistent with a park’s purposes or values, or
- 19 • impede the attainment of a park’s desired future conditions for natural and cultural resources as
20 identified through the park’s planning process, or
- 21 • create an unsafe or unhealthful environment for visitors or employees, or
- 22 • diminish opportunities for current or future generations to enjoy, learn about, or be inspired by
23 park resources or values, or
- 24 • unreasonably interfere with
 - 25 ○ park programs or activities, or
 - 26 ○ an appropriate use, or
 - 27 ○ the atmosphere of peace and tranquility, or the natural soundscape maintained in
28 wilderness and natural, historic, or commemorative locations within the park, or
 - 29 ○ NPS concessioner or contractor operations or services.

DRAFT – December 8, 2008

1 Because park units vary based on their enabling legislation, natural resources, cultural resources, and
 2 missions, management activities appropriate for each unit, and for areas in each unit, vary as well. An
 3 action appropriate in one unit could impair or cause unacceptable impacts to resources in another unit.
 4 Thus, the EIS analyzes the context, duration, and intensity of impacts related to the implementation of an
 5 ORV management plan at Cape Hatteras National Seashore, as well as the potential for resource
 6 impairment or unacceptable impacts, as required by *Director's Order 12: Conservation Planning,*
 7 *Environmental Impact Analysis and Decision-making* (NPS 2001, 45).

8 **Redwood National Park Act of 1978, as Amended**

9 Reasserting the system-wide standard of protection established by Congress in the original *Organic Act,*
 10 the Redwood Amendment stated:

11 The authorization of activities shall be construed and the protection, management, and
 12 administration of these areas shall be conducted in light of the high public value and integrity of
 13 the National Park System and shall not be exercised in derogation of the values and purposes for
 14 which these various areas have been established, except as may have been or shall be directly and
 15 specifically provided by Congress (P.L. 95-250, USC Sec 1a-1).

16 Congress intended the language of the *Redwood Amendment* to the *General Authorities Act* to reiterate
 17 the provisions of the *Organic Act*, not to create a substantively different management standard. The
 18 House committee report described the Redwood Amendment as a “declaration by Congress” that the
 19 promotion and regulation of the national park system is to be consistent with the *Organic Act*. The Senate
 20 committee report stated that under the *Redwood Amendment*, “The Secretary has an absolute duty, which
 21 is not to be compromised, to fulfill the mandate of the 1916 Act to take whatever actions and seek
 22 whatever relief as will safeguard the units of the national park system.” Although the *Organic Act* and the
 23 *General Authorities Act*, as amended by the *Redwood Amendment*, use different wording (“unimpaired”
 24 and “derogation”) to describe what the NPS must avoid, both acts define a single standard for the
 25 management of the national park system—not two different standards. For simplicity, *NPS Management*
 26 *Policies 2006* uses “impairment,” not both statutory phrases, to refer to that single standard.

27 **Executive Order 11990: Protection of Wetlands**

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

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1 **Executive Order 11988: Floodplain Management**

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

5 **NPS Management Policies 2006**

6 NPS *Management Policies 2006* address management of ORVs in Section 8.2.3.1, Off-Road Vehicle Use.
7 This section states (NPS 2006b, 104):

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

15 In accordance with 36 CFR 4.10(b), routes and areas may be designated only in national
16 recreation areas, national seashores, national lakeshores, and national preserves, and only by
17 special regulation. In accordance with the executive order, they may be allowed only in locations
18 where there will be no adverse impacts on the area's natural, cultural, scenic, and esthetic values,
19 and in consideration of other existing or proposed recreational uses. The criteria for new uses,
20 appropriate uses, and unacceptable impacts listed in sections 8.1 and 8.2 must also be applied to
21 determine whether off-road vehicle use may be allowed. As required by the executive order and
22 the *Organic Act*, superintendents must immediately close a designated off-road vehicle route
23 whenever the use is causing, or will cause, unacceptable impacts on the soil, vegetation, wildlife,
24 wildlife habitat, or cultural and historic resources.

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

29 Management polices relating to resource protection also were considered in developing this plan/EIS. For
30 example, NPS *Management Policies 2006* instructs park units to maintain, as parts of the natural
31 ecosystems of parks, all plants and animals native to park ecosystems, in part by minimizing human

Who has the burden of proof on this? Existing E.O.'s + Policy suggest that the NPS only has to argue negligible impacts are possible. Comply with the keeping areas closed indefinitely.

This is a very high standard with good reason!

Unacceptable then under the EO = above "no adverse impact"

1 impacts on native plants, animals, populations, communities, and ecosystems, and the processes that
2 sustain them (NPS 2006b, sec. 4.4.1, 43).

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

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

- 11 • Cooperate with both the USFWS and the National Marine Fisheries Service to ensure that
12 NPS actions comply with both the written requirements and the spirit of the *Endangered*
13 *Species Act*. This cooperation should include the full range of activities associated with the
14 *Endangered Species Act*, including consultation, conferencing, informal discussions, and
15 securing of all necessary scientific and/or recovery permits.
- 16 • Undertake active management programs to inventory, monitor, restore, and maintain listed
17 species' habitats; control detrimental non-native species; control detrimental visitor access;
18 and re-establish extirpated populations as necessary to maintain the species and the habitats
19 upon which they depend.
- 20 • Manage designated critical habitat, essential habitat, and recovery areas to maintain and
21 enhance their value for the recovery of threatened and endangered species.
- 22 • Cooperate with other agencies to ensure that the delineation of critical habitat, essential
23 habitat, and/or recovery areas on park-managed lands provides needed conservation benefits
24 to the total recovery efforts being conducted by all the participating agencies.
- 25 • Participate in the recovery planning process, including the provision of members on recovery
26 teams and recovery implementation teams where appropriate.
- 27 • Cooperate with other agencies, states, and private entities to promote candidate conservation
28 agreements aimed at precluding the need to list species.
- 29 • Conduct actions and allocate funding to address endangered, threatened, proposed, and
30 candidate species.

1 Section 4.4.2.3 of the NPS *Management Policies 2006* also states that the “NPS will inventory, monitor,
2 and manage state and locally listed species in a manner similar to its treatment of federally listed species,
3 to the greatest extent possible. In addition, the Service will inventory other native species that are of
4 special management concern to parks (such as rare, declining, sensitive, or unique species and their
5 habitats) and will manage them to maintain their natural distribution and abundance” (NPS 2006b, sec.
6 4.4.2.3, 45).

7 **Superintendent’s Compendium: Closures, Permit Requirements, and Other Restrictions**

8 Under the provisions of 16 USC 3 and 36 CFR 1, Parts 1-7, the compendium details designated closures,
9 permit requirements, and other restrictions imposed under the discretionary authority of the
10 Superintendent. The general provisions of the compendium allow for closures and public use limits for
11 posted bird areas and turtle nests as well as vehicle restrictions during May through September on beach
12 areas in front of villages, on life guarded beaches, and on beaches adjacent to NPS campgrounds or other
13 posted areas. The compendium also covers restrictions for resource protection, public use, and recreation;
14 boating and water use activities; and vehicles and traffic safety. It prohibits vehicular access to beach or
15 soundside areas other than those marked and maintained vehicle access routes and prohibits all off-road
16 traffic on Pea Island National Wildlife Refuge, in accordance with USFWS management of the area.

17 **Superintendent’s Order 10: Monitoring and Protection of Species of Concern**

18 This order reinforces that the Seashore’s goal is to prevent “take” and contribute toward recovery of
19 protected species. Accomplishing this goal includes protective closures, monitoring and research, law
20 enforcement, predator control, and other management actions. The Seashore’s efforts will also contribute
21 toward the *Government Performance and Results Act* (1993) goals for the NPS:

22 1a2A: 41% of federally listed species that occur or have occurred in parks are making progress
23 towards recovery.

24 1a2B: 70% of populations of native plant and animal species of management concern are
25 managed to self-sustaining levels, in cooperation with affected states and others, as defined in
26 approved management documents.

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

29 NPS *Director’s Order #12* and its accompanying handbook (NPS 2001) lay the groundwork for how the
30 NPS complies with NEPA. *Director’s Order #12* and handbook set forth a planning process for

1 incorporating scientific and technical information and establishing a solid administrative record for NPS
2 projects.

3 *Director's Order #12* requires that impacts to park resources be analyzed in terms of their context,
4 duration, and intensity. It is crucial for the public and decision makers to understand the implications of
5 those impacts in the short and long term, cumulatively, and within context, based on an understanding and
6 interpretation by resource professionals and specialists. *Director's Order #12* also requires that an
7 analysis of impairment to park resources and values be made as part of the NEPA document.

8 **Director's Order 28: Cultural Resource Management**

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

14 **Director's Order 77: Natural Resource Protection**

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

24 **RELATIONSHIP TO OTHER CAPE HATTERAS NATIONAL SEASHORE PLANNING DOCUMENTS,** 25 **POLICIES AND ACTIONS**

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

28 **Past ORV Planning Efforts**

29 As described under "Summary of Off-Road Vehicle Use and Management at Cape Hatteras National
30 Seashore" earlier in this chapter, the Seashore has engaged in various ORV management activities since it

1 was established. All of these past planning efforts were taken into consideration during the development
2 of this plan/EIS.

Refer reader to "Overview" & earlier section on Admin History for background

3 **General Management Plan**

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

New GMP expected

9 **Resource Management Plan**

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

Any other park documents, policies, actions pertaining to resource protection / mgmt? ←
• Fed consistency on Ramp Maintenance + Dune Maint. (2007-2010)

15 **Commercial Services Plan**

16 The Seashore is developing a commercial services plan to identify necessary and/or appropriate
17 commercial services in the Seashore and the best way for NPS to manage them. An EA for the
18 commercial services plan is being prepared; the expected completion date is unknown.

INCLUDE
GPRAs goals related to
① Fed listed (Ia2A) Species recovery
② Species of Management Concern (Ia2B)
③ Areas in Natural Condition (IA1H)
④ (IAD) Shoreline in Desired Condition

19 **Government Performance Result Act Surveys**

20 From 1998 to 2008, Cape Hatteras National Seashore distributed a survey to visitors as part of
21 compliance with the *Government Performance Results Act (GPRAs) Surveys*. These surveys focus on
22 measurable goals for visitor satisfaction, and visitor understanding and appreciation, which assist the
23 Seashore in its planning efforts to achieve its goals.

24 **Visitor Services Project Report**

25 The visitor services project report, or the *Outer Banks Group Parks Visitor Study Cape Hatteras National*
26 *Seashore Visitors* report, resulted from a visitor study conducted at the Seashore July 12 through 18,
27 2002. The study found that the most popular activities for current and past visitors were
28 sunbathing/swimming and visiting historic sites. The three most important reasons for visiting the
29 Seashore were the lighthouses, swimming, and uncrowded/solitude/low population. Also, when asked

1 about crowding, 27% of visitors said they felt “crowded” to “extremely crowded” while 43% of visitors
2 felt “somewhat crowded.” Many visitor groups (49%) felt that crowding “detracted from their park
3 experience” (NPS 2002, 2).

4 **Long-Range Interpretation Plan**

5 A long-range interpretation plan for the Seashore was completed in September 2007. This plan
6 recommends actions to be taken over the next five to seven years to improve the Seashore’s personal
7 services program and interpretive media, and provides an achievable implementation strategy (NPS
8 2007b, 49). Because this plan addresses exhibits, interpretive information, outreach, and education, it was
9 considered in the development of this plan/EIS.

10 **Predator Management Plan**

11 The Seashore is developing a predator management plan to address native and non-native predators that
12 prey on protected species of shorebirds and on sea turtle hatchlings. The plan/Environmental Assessment
13 was distributed for public review in [insert month and year] and a Finding of No Significant Impact was
14 signed [insert month and year].

15 **Special Use Permits and Permitted Activities**

16 ** PRIVILEGES * APPROPRIATE ACTIVITIES **
17 A special use permit is required for activities at the Seashore that provide a benefit to an individual,
18 group, or organization, rather than the public at large, and that require some degree of management from
19 the NPS to protect park resources and the public interest. Examples include: religious ceremonies,
20 weddings, fishing tournaments, surfing tournaments, commercial filming, bike tours, marathons, car
21 rallies, and public speeches and assemblies. Permit fees vary and generally range between \$100 and \$500.
22 However, an additional fee is charged for any activity that requires NPS personnel participation or
23 monitoring, or that creates extraordinary administrative work. The full cost is charged for restoration of
24 park resources including litter cleanup (NPS nd, 1).

ORV-dependent activities
① Individual use
② Group events
Cost Recovery to allow Special Use of park under Special Regulations to allow ORV use.

24 **Concessioner Permits and Operations**

25 The Seashore issues permits for operations of concessioners such as a horseback ride operation;
26 instruction for surfing, kite surfing, and surf fishing; or kayak tours. These permitted activities are subject
27 to the supervision of the Superintendent. In addition to the general guidelines of the permit, there are
28 some additional provisions regarding liability, visitor use, and impacts to the Seashore.

mentioning litter trivializes the concept of "restoration" because

29 **Ocracoke Transportation Study**

Is this still true?

???. really??

1 Cape Hatteras National Seashore is currently preparing a transportation study on Ocracoke Island, which
2 includes the evaluation of a high-speed passenger ferry to Ocracoke. The transportation study was
3 scheduled to be completed by late 2005, but is still currently under development. The high speed ferry,
4 which would be a private sector passenger shuttle, is still in discussion and not yet confirmed.

5 **RELATIONSHIP TO OTHER FEDERAL PLANNING DOCUMENTS AND ACTIONS**

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

9 **Piping Plover Atlantic Coast Population Recovery Plan**

10 ORV management activities described in this plan/EIS considered the 1996 USFWS *Piping Plover*
11 *Atlantic Coast Population Recovery Plan*. This population of piping plovers was listed as threatened in
12 1986 and has increased from approximately 800 pairs to almost 1,350 pairs in 1995. However, pressure
13 on Atlantic Coast beach habitat from development and human disturbance is pervasive and unrelenting,
14 and the species is sparsely distributed. Increased human activity in Atlantic coast parks, which includes
15 increased ORV use, is cited as one of the many reasons the piping plover was listed.

→ Detail HABITAT + USE of ~~CA~~ NC → OBX → CAHA → BODIE HATTERAS OCRACOKE

16 **Recovery Plan for the Great Lakes Piping Plover**

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

Why is this relevant?

25 **Atlantic Green, Hawksbill, Leatherback, Kemp's Ridley**

Further consideration by Mike. Leave in for now.

26 The USFWS and the National Marine Fisheries Service recc
27 green, hawksbill, leatherback, Kemp's ridley, and loggerhea
28 developing this plan/EIS. Each of these species is federally l
29 individual recovery plans (NMFS 1991a, 1991b, 1992; USFWS 1991a, 1991b, 1992;
30 2008).

Why are they lumped?

1 **Marine Mammal Recovery Efforts by the National Marine Fisheries Service**

2 This plan/EIS considered the *Marine Mammal Recovery Efforts of the National Marine Fisheries Service*.
3 The National Marine Fisheries Service Office of Protected Resources is charged with implementing the
4 *Marine Mammal Protection Act* and the *Endangered Species Act* with respect to marine mammal species
5 under the National Oceanic and Atmospheric Administration (NOAA) Fisheries jurisdiction: whales,
6 dolphins, porpoises, seals, and sea lions. These efforts are relevant to this plan because administrative
7 ORVs are used to assist marine mammals that have become stranded on the beach, and because ORVs
8 enhance visitors' access to marine mammals that are resting on the beach, which could potentially lead to
9 harassment.

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

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

14 **North Carolina Division of Marine Fisheries Regulations**

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

So what? How is this relevant to ORV mgmt plan?

20 **North Carolina Wildlife Resources Commission Nongame and Endangered Wildlife Program**

21 The Nongame and Endangered Wildlife Program, established in North Carolina in 1983, aims to prevent
22 species from becoming endangered through maintaining viable, self-sustaining populations of all native
23 wildlife, with an emphasis on species in decline. The North Carolina Wildlife Resources Commission has
24 a Comprehensive Wildlife Strategy to protect state listed species. This strategy includes securing funding
25 for state fish and wildlife agencies to take preventative actions that help keep rare species from becoming
26 endangered, and keep common species common (NCWRC nd, 4). Species listed through this program as
27 state threatened, endangered, or of special concern were taken into consideration during the development
28 of this plan/EIS. Endangered and threatened wildlife, and wildlife species of special concern are protected
29 under Article 25 of Chapter 113 of the *North Carolina General Statutes*.

AND SIGNIFICANT Natural Heritage Areas.

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

Not relevant unless individuals patrol via ORV & are not managed/supervised by NPS

1 **Carolina**

2 The North Carolina Wildlife Resources Commission published the *Handbook for Sea Turtle Volunteers in North Carolina* (NCWRC 2006). The handbook provides guidance to volunteers in...
3 biologically sound management projects to benefit sea turtle
4 pertaining to rare and endangered species at all levels of gov
5 Seashore by the North Carolina Wildlife Resources Commis:

Park is following their guidance to relocate nests

7 **North Carolina Department of Transportation**

(A) HIGHWAYS

Highways
← ON

8 The North Carolina Department of Transportation (NCDOT)
9 other Outer Banks access issues. The NCDOT is considering
10 changing physical landscape of the area such as a bridge from
11 for a future inlet. The Outer Banks Task Force has developed
12 that was considered during the development of this plan/EIS. It
13 within Cape Hatteras National Seashore to the mainland of No
14 roadway for off-island community services, such as hospitals, emergency response, and waste collection.
15 NC-12 is also the primary evacuation route for all permanent and temporary residents on the island when
16 severe weather is approaching. Storms frequently cause the ocean to overwash NC-12 and deposit large
17 quantities of sand over portions of the roadway. The storms sometimes damage NC-12, which interrupts
18 access and services to the island and causes hardships for island residents. NC-12 must be continually
19 repaired and maintained to prevent permanent loss of access on Hatteras Island. To address these issues a
20 task force was formed comprising the NCDOT, NPS, Corps, USFWS, National Marine Fisheries Service,
21 Federal Highway Administration, Dare and Hyde counties, and the North Carolina Department of
22 Environment and Natural Resources. The mission of this task force is to develop a long-range protection
23 and maintenance plan for the transportation system on the Outer Banks. As part of this task force, hot
24 spots for erosion have been identified and include Northern Pea Island, Sandbag area, Rodanthe 'S'
25 curves, Buxton/Canadian Hole, Hatteras Village, and Ocracoke (OBTF 2003, 1).

Relevance to ORV Mgmt in Seashore?

26 The NCDOT is proposing to build a new bridge to replace the existing Herbert C. Bonner Bridge,
27 originally built in the 1960s, over Oregon Inlet before the end of the bridge's reasonable service life. The
28 NCDOT and the Federal Highway Administration released a supplemental draft EIS regarding this
29 replacement, and a supplement to the EIS was released in 2007 (OBTF 2007, 1, FHWA 2007, 1). In
30 September 2008, NCDOT announced its preferred alternative, known as the Parallel Bridge with Phased
31 Approach/Rodanthe Bridge Alternative. This alternative includes constructing a new Oregon Inlet bridge

Relevance to ORV Mgmt in Seashore?

1 (Phase I) west of the existing structure, and later elevating NC-12 onto a series of bridges during Phases
2 II-IV. Replacement of the Oregon Inlet bridge is expected to be complete in 2014 (NCDOT, 2008, 1).

3 **The North Carolina Coastal Area Management Act (CAMA)**

4 The North Carolina CAMA of 1974 establishes a cooperative program of coastal area management
5 between local and state governments thro reservation,
6 orderly development, and management of tails regarding
7 CAMA are presented previously in this d t description.

Since it was covered, delete this.

Refer to CZMA on page X
Strike first sentence

8 **Dare and Hyde County Planning Docu**

9 The development and implementation of Dare and Hyde
10 counties. In Dare County, the County Pla are County
11 Board of Commissioners. In compliance epared guidance
12 and policies for land use development, kn 5), which
13 provides local elected officials with a set land use issues
14 that are important to the community. The cs and

15 implementation activities such as policies on water quality, residential and commercial development
16 patterns, beach

17 transportation. Plan was certified by the North Carolina
18 Coastal Resou ed every five years, although the update
19 for 2008 is not Land Use Plan applies to the
20 unincorporate icipalities in Dare County adopts its own

Mention use of these plans in cumulative impacts

21 plans for its re Land Use Plan works in conjunction with
22 the zoning or inland villages and Wanchese, the
23 remainder of zoning maps have been adopted for the
24 villages of D and Hatteras. The villages of Rodanthe,

line 10 and consistency documents

25 Waves, Salv zoning district that allows all uses but does
26 establish so addition, the county adopted a Special

27 Environmental District (SED), ime forest. This zoning district establishes
28 special standards for land clearing and vegetation removal that are intended to protect the vegetative

29 canopy of the Buxton Woods forest (Dare County 2003, 93).

30 The Hyde County Land Use Plan, written in 1986, was updated in 1992, 1997, and 2006. Hyde County
31 Land Use Plan is required as part of the State of North Carolina's Coastal Area Management Act and

Relevance has to do with the Federal Consistency Determination process, but it is minimal.

1 analyzes land development in the area to plan for future uses. The plan sets forth the following vision for
2 the Island of Ocracoke (Hyde County 2006, 166):

3 The vision of Ocracoke Island in the 21st century is a community that ensures livability and
4 economic viability by offering the [redacted] a preferable alternative to the over
5 commercial [redacted] devoted attention to Ocracoke residents. The
6 mission support:

Park to decide level of detail here.

- 7 • Efforts to support village craftsmen including hunting and
- 8 • Efforts to support small locally owned shops and
- 9 • Efforts to support small locally owned shops and
- 10 • Efforts to support small locally owned shops and
- 11 • Efforts to support small locally owned shops and
- 12 • Efforts to support small locally owned shops and
- 13 • Cooperation with NPS, and DOT to maintain access to the Island and
- 14 provide [redacted] amenities. Ocracoke and Mainland should emphasize access.
- 15 • Support village craftsmen.

16 **Outer Banks Visitor Bureau Conversion Study**

17 In 2003 the Outer Banks Visitor Bureau conducted a study to determine the effectiveness of the Outer
18 Banks marketing material. The study reviewed the relationship between the number of people requesting
19 information about the Outer Banks in Dare County versus the actual number of people that traveled to the
20 area, known as the conversion rate. In 2003, 33% of the respondents to the study [redacted] he
21 Outer Banks, a drop from 44% that visited the area [redacted]
22 include:

*Relevance to ORV Mgmt @ Seashore?
If relevant, describe these details in socioeconomic section of Affected Env. (Ch 3)*

Drop from here. Address in Ch. 3.

- 23 1. People who have less experience with the area, and they take longer to consider their c [redacted] the
- 24
- 25 2. A major feature that was promoted in the celebration in 2003 that occurred in Decemb [redacted] e
- 26
- 27 until that time, and were not captured in this [redacted]
- 28 3. In 2002 the economic climate and politica [redacted] is
- 29 about traveling and investing in travel.

1 Overall a general beneficial economic impact from the visitation campaign was seen at the Seashore. The
 2 study also reported a large number of people who received materials and did not visit the Outer Banks in
 3 that year but planned to make the trip in future years (SMR 2003, 9).

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

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

- 8 • ORV users must observe a speed limit of 15 miles per hour;
- 9 • ORVs use designated ramps to enter/exit the beach (never between ramps or on
 10 the dunes);
- 11 • ORVs should drive only between the foot of the dunes and the ocean;
- 12 • ORV users should be cautious / considerate of other beach visitors;
- 13 • ORV users must have a valid license plate;
- 14 • ORVs must be registered with a valid license plate;
- 15 • ORV operators must have a current license;

16 In addition to these regulations, each municipality has individual ORV regulations,
 17 as shown in table 1.

19 Municipalities

| Regulation/Guideline | Duck | Kill Devil Hills | Nags Head | Kitty Hawk and Southern Shores* |
|---|------|------------------|-----------|---------------------------------|
| 12 Observe 15 mph speed limit | X | X | X | |
| 10 Use designated ramps to enter/exit the beach | X | X | X | |
| 11 Drive only between foot of dunes and ocean | X | X | X | |
| 13 Be cautious / considerate of other visitors | X | X | X | |
| 8 Vehicle must be registered with valid license plate | X | X | X | |
| 9 Operator must have current license | X | X | X | |
| 5 No permit required between October 1 and April 30 | X | X | X | |

How is this relevant? Simply for consistency in local ORV mgmt? Does the NPS need to be consistent w/ existing local policy/practice? Is it legally required or just for informational purposes?

*Add statement
Leave 75-15*

recreational ORV use permitted

recreational ORV use only?

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| | | | | | |
|---|--|---|---|---|---|
| ⑦ | Vehicle must have 4-wheel drive | | X | | |
| ⑥ | Night driving is permitted | | X | | |
| ① | Government, law enforcement, emergency, rescue services exempt | X | X | X | X |
| ② | Commercial fishermen exempt | | | | X |
| ④ | ORV must be permitted by Regulations Governing Off-Road Vehicles | | | X | |

*No motorized vehicles are allowed at Kitty Hawk and Southern Shores except for commercial fishermen and government/emergency vehicles.

③ Recreational ORV use

| | | | |
|---|---|---|--|
| X | X | X | |
|---|---|---|--|

Re order suggested because ~~there is nothing~~ there is nothing listed for Southern Shores / Kitty Hawk @ top of table, so it looks strange to even include those towns.

- Regulations
 - ↳ by user groups
 - ↳ Government...
 - ↳ Authorized Commercial Activities
 - ↳ Recreational Users
- ORV use (rules apply to all users?)
 - ↳ Vehicle standards
 - ↳ Operator standards

| Reg | Duck | ICDH | NH | KH + SS |
|---------------|------|------|----|---------|
| USERS: | | | | |
| Govt | X | X | X | X |
| Comm | X | X | X | X |
| REC | X | X | X | ⊖ |
| USE: | | | | |
| Vehicle Stds | | | | |
| Operator Stds | etc. | | | |

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Chapter 2: Alternatives

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Needs to be mentioned in Ch 2 as directed by Secretary of the Interior Order # 3270, providing policy guidance, procedures for implementation & issuance of the DOI Technical Guide 2007.

Why is there no "ORV-use prohibited" Alternative?
The EOs + Mgmt Policies at CAHA ~~at CAHA~~ ^{as one} this Alternative. ~~at CAHA~~
JUSTIFY INCLUSION OF

ALTERNATIVES

1

2 NEPA requires federal agencies to explore a range of reasonable alternatives that address the purpose of
3 and need for the action. The alternatives under consideration must include the "no action" alternative as
4 prescribed by 40 U.S. Code of Federal Regulations (CFR) 1502.14. Two no action alternatives are
5 included for analysis in this EIS, because management changed part way through the planning process in
6 May 2008, after the consent decree was signed (see chapter 1 for more information). Action alternatives
7 may originate from the proponent agency, local government officials, or members of the public at public
8 meetings or during the early stages of project development. Alternatives may also be developed in
9 response to comments from coordinating or cooperating agencies.

10 ACTION ONLY - The No Action alternative does not
11 The alternatives analyzed in this document, in accordance with NEPA, are the result of internal scoping
12 and public scoping. These alternatives meet the management objectives of the Seashore, while also
13 meeting the overall purpose of and need for proposed action. Alternative elements that were considered
14 but were not technically or economically feasible, did not meet the purpose of and need for the project
15 created unnecessary or excessive adverse impacts to resources, and/or conflicted with the overall
16 management of the Seashore or its resources were dismissed from further analysis.

17 The NPS explored and objectively evaluated six alternatives in this EIS, including:

- 18 • **Alternative A: No Action – Continuation of Management Under the Interim Protected Species Management Strategy.** Under this no-action alternative, management of ORV use and
19 access at the Seashore would be a continuation of management based on the 2006 *Cape Hatteras National Seashore Interim Protected Species Management Strategy/EA* and the Superintendent's
20 Compendium 2006, as well as elements from the 1978 draft interim ORV management plan that
21 were incorporated in Superintendent's Order #7.
- 22 • **Alternative B: No Action – Continuation of Terms of Consent Decree Signed April 30, 2008.**
23 Under alternative B, management of ORV use would follow the terms described under alternative
24 A, except as modified by the provisions of the Consent Decree. Modifications in the Consent
25 Decree include changes to the buffers for various species at the Seashore and added restrictions
26 related to night driving.
- 27 • **Alternative C: Seasonal Management.** Alternative C would provide visitors to the Seashore
28 with a degree of predictability regarding areas available for ORV use, as well as vehicle-free
29 areas, based largely on the seasonal resource and visitor use characteristics of various areas in the
30 Seashore.

Define

How do they differ?
What are the criteria used in Alt. Development?

Alternatives full range of technical feasible, reasonable

ORV
How does this relate to plan objectives?

Need to discuss the challenges of developing alternatives which influenced why predictability

1 • **Alternative D: Increased Predictability and Simplified Management.** Under alternative D,
2 visitors to the Seashore would have the maximum amount of predictability regarding areas
3 available for ORV use and vehicle-free areas for pedestrian use, which means restrictions would
4 be applied to larger areas and for longer periods of time to avoid changes in approved use patterns
5 over the course of a year.

6 • **Alternative E: Variable Access and Maximum Management.** Alternative E would provide use
7 areas for all types of visitors to the Seashore, including ORV users, with the highest level of
8 access resulting in more areas open to ORVs year-round, partially by providing pass-through
9 ORV corridors in traditionally higher use pedestrian areas and by improving interdunal road and
10 ramp access, in addition to increased parking capacity at key locations that lend themselves well
11 to walking on the beach.

12 • **Alternative F: Negotiated Rulemaking Consensus.** To be inserted when available.

13 **ELEMENTS COMMON TO ALL ALTERNATIVES**

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

16 **OPERATOR/VEHICLE REQUIREMENTS**

- 17 • **Vehicle Requirements.** All vehicles operating in area of the Seashore must:
 - 18 ▪ Meet all requirements to operate legally on state highways where the vehicle is
 - 19 registered, including all vehicle equipment, licenses, and registration.
 - 20 ▪ Have a valid vehicle registration, insurance, and license plate.
- 21 • **Operator Requirements.** Any person operating a vehicle in any area of the Seashore must:
 - 22 ▪ Observe any law applicable to vehicle use on a paved road in the State of North Carolina.
 - 23 ▪ Hold a current driver's license (Superintendent's Compendium Section 4.2(a)).
 - 24 ▪ Use seatbelts.
- 25 • **Operator and Passenger Requirements.** Any person operating a vehicle and/or passenger in a
26 vehicle operating in any area of the Seashore must comply with the following:
 - 27 ▪ Open containers of any type of alcoholic beverage are prohibited in vehicles.

Low? ORV

Why? How does this relate to plan objectives?

Why would areas change? ORV

EFFORT

What is the basis for providing greatest access?

How does this relate to resource protection + avoidance/minimization of impacts to resources?

Describe why?

Has no relevance to meeting EO + Mgmt Policy on ORV use, but is REQUIRED? RECOMMENDED? Superintendent's Decision?

Is the basis for these safety?

- 1 ▪ ORV drivers and/or passengers are prohibited from sitting on the tailgate or roof or
- 2 hanging outside of moving vehicles. Those in truck beds must be seated on the floor with
- 3 the tailgate closed; children in truck beds must be accompanied by an adult.
- 4 • Right of Way Requirements.

- 5 ▪ Vehicle right-of-way is not defined by Seashore, and the standard driving rules must be
- 6 followed. On ramps, the vehicle exiting the Seashore has the right-of-way

Is not relevant to ORV mgmt but doesn't change across alternatives. The important part of this is BUT this authority doesn't change.

2

NATIONAL PARK SERVICE REGULATIONS

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

3

SUPERINTENDENT'S COMPENDIUM 2008

16 The provisions detailed in Superintendent's Compendium 2008 define Seashore-specific regulations
 17 imposed under the discretionary authority of the Superintendent of the Outer Banks Group. These
 18 provisions, as described below, are common to all alternatives.

This is relevant to each of the alternatives

1

ENFORCEMENT

20 Violations would be fined or a mandatory court appearance would be required as defined in the *Collateral*
 21 *Schedule, Eastern District of North Carolina, National Park Service.*

of what? Just of? Can Superintendent's Compendium regulations be violated & fines issued?

Not relevant to range alternatives

3A

AREAS OF VEHICLE OPERATION

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

- 25 • Driving or parking on vegetation is prohibited.
- 26 • Driving on or between the dunes unless marked as an ORV route is prohibited.
- 27 • Operating a vehicle of any type within safety or resource closures is prohibited.

Is this 3A or regulated under Supt Compendium?

is relevant

- 1 • Use only designated beach access ramps and soundside access roads to enter designated ORV routes. Reckless driving, for example, cutting circles or defacing the beach, is prohibited.
- 2
- 3 • Observe pedestrian right-of-way.

4 **PERMITTED USES / COMMERCIAL FISHING**

- 5 • Commercial fishing permit holders with ORVs would be allowed to enter safety closures, but not resource closures or the currently established administrative closures. Two designated
- 6 commercial fishing areas exist on the soundside of Ocracoke Island where only commercial
- 7 fishing is allowed.

WHY ???
It's unsafe that's why it's closed.

- 8 ***WHAT** IF someone applies for a new commercial permit area ??? EXISTING
- 9 • Kite flying, kite boards, and ball and Frisbee tossing prohibited within or above all bird closures.

10 **PROTECTED SPECIES MANAGEMENT**

- 11 • In general, because of the dynamic nature of the Seashore beaches and inlets, protected species management could change by location and time, and new sites (bars, islands) could require
- 12 additional management, or management actions may become inapplicable for certain sites (e.g.,
- 13 habitat changes with vegetation growth, new wash over areas).
- 14
- 15 • Areas with symbolic fencing (string between posts) would be closed to recreational access.
- 16 • Data collection using a geographic positioning system (GPS) and incorporating data into a
- 17 geographic information system (GIS) would continue to document breeding and nest locations.
- 18 The Seashore has submitted a request for funding to update the GIS and develop standardized
- 19 protocols for collecting data for the GIS.
- 20 • Essential use vehicles could enter restricted areas subject to the guidelines in the Essential
- 21 Vehicles section of the *U.S. Fish and Wildlife Service Piping Plover (Charadrius melodus),*
- 22 *Atlantic Coast Population, Revised Recovery Plan* (USFWS 1996). Due to the soft sand
- 23 conditions of the Seashore, essential vehicles would not be allowed to exceed 10 miles per hour.

24 **ACCESSIBILITY FOR THE DISABLED**

25 The Seashore would provide access to disabled visitors as follows:

- 26 • Beach access points and boardwalks compliant with the American with Disabilities Act (ADA)
- 27 requirements at the Frisco Boathouse and the Ocracoke Pony Pen.

needs to be included as an applicable law in Ch 2.

*Proof of being disabled is what?
• license plate (disabled veteran, partially disabled...)
• handicapped parking sign

Concern: *Everyone & their grandmother will get (if they don't already have) a handicapped driver parking pass.*

- 1 • Beach access through the issuance of special use permits for areas in front of the villages to allow
- 2 ORVs to transport disabled visitors to the beach and then return the vehicle back to the street.
- 3 • Beach wheelchairs could be checked out at each Ranger District on a first come/first served basis.

4 **INFRASTRUCTURE**

- 5 • The Bodie Island, Hatteras Island, and Ocracoke Island Visitor Centers would be open daily
- 6 excluding Christmas. *How/Why is this relevant to ORV mgmt?*
- 7 • The park has four campgrounds at Oregon Inlet, Frisco, Cape Point, and Ocracoke. The
- 8 campgrounds would be open seasonally. Dates the campgrounds open or close would be subject
- 9 to change.
- 10 • Designated day use areas would be located at Frisco and Ocracoke. *meaning what?*
- 11 • Fishing piers are located near Frisco and at Avon and Rodanthe on Cape Hatteras Island, and a
- 12 marina is located at Oregon Inlet on Bodie Island. These would continue to be available to the
- 13 public.

** BEACH ACCESS RAMPS - maintenance of ramps to be used by recreational ORVs*

14 **EDUCATION AND OUTREACH**

15 Under all alternatives, the Seashore would continue to:

- 16 • Promote visitor safety in the Seashore's newspaper and Seashore site bulletins.
- 17 • Provide educational materials regarding *3* trash disposal, *1* endangered species, *4* wildlife feeding, *2* fireworks, *4* pets, and driving requirements at the visitor centers and at other NPS facilities at the
- 18 Seashore. *5* ~~fires on beach~~

- 20 • Notify the public of *resource* ~~species management~~ closures through weekly resource and beach access
- 21 reports, press releases, email updates, and on the Seashore's website. *RADIO ANNOUNCEMENTS?*
- 22 • Post signage at ORV access ramps and routes on the beach and soundside. Signs at ramps include
- 23 applicable ORV regulations.

- 24 • Post signage in the Seashore so ~~information~~ on beach closures and Seashore resources is readily
- 25 available and presented in a clear manner to the public. ** rewrite*

- 26 • Conduct educational programs during the bird and sea turtle hatching season, ~~during which public~~
- 27 ~~school students could learn about sea turtles by participating in post-hatching nest examinations.~~

on what

- 1 • Provide information to the public about nesting birds and sea turtles and measures taken by the
2 Seashore to protect nests and hatchlings.
- 3 • Post information about protected species (~~including seabeach amaranth~~) at all ORV ramp bulletin
4 boards.
- 5 • Publish annual protected species reports ~~regarding the previous breeding season~~ on the Seashore
6 website.
- 7 • *move to Enforcement* Enforce proper trash disposal (pack in/pack out) and anti-wildlife feeding regulations throughout
8 the Seashore, including proper disposal of fishing bait and filleted fish carcasses. Provide
9 education and outreach materials regarding the impacts of trash disposal, wildlife feeding,
10 fireworks, and pets on sensitive Seashore species. *Provide* Solicit from interested parties how to convey
11 information about the species management program. *New bullet*
- 12 • Notify the public of ~~species management~~ *resource* closures that would ~~temporarily~~ limit ORV traffic. Send
13 a press release to local and regional newspapers and contact local tackle shops and ORV
14 organizations when species closures established or reopened. *ED Outreach*

16 NO-ACTION ALTERNATIVES

17 The “no action” alternatives were developed for two reasons. A no-action alternative may be a viable
18 choice in the range of reasonable alternatives, and the no-action alternatives set a baseline of existing
19 impacts continued into the future against which to compare the impacts of action alternatives. For this
20 EIS, the range of alternatives includes two no-action alternatives. Alternative A represents continuing
21 management as described in the *Interim Protected Species Management Strategy/EA*. This management
22 was challenged in court and subsequently modified by the Consent Decree that was signed on April 30,
23 2008. Alternative B represents continuing management as described in the Consent Decree. Two no-
24 action alternatives are analyzed to capture the full range of management actions that occurred and are
25 currently occurring.

26 Tables 1 and 2 compare the actions that would be taken under each alternative and *FF* figure 1 contains the
27 maps of all alternatives.

It's NEPA- required. Rewrite 1st sentence to say that there are 2 no-action alts & why there are two.

1 **ALTERNATIVE A: NO ACTION – CONTINUATION OF MANAGEMENT UNDER THE INTERIM**
 2 **PROTECTED SPECIES MANAGEMENT STRATEGY**

3 Under this no-action alternative, management of ORV use and access at the Seashore would be a
 4 continuation of management based on the 2006 *Interim Protected Species Management Strategy/EA* and
 5 Superintendent's Compendium 2006, as well as elements from the 1978 draft interim ORV management
 6 plan that were incorporated in Superintendent's Order #7. These actions would include providing access
 7 throughout the Seashore, except in areas of temporary resource, safety, or administrative closures. Under
 8 the no-action alternative, the entire Seashore would be a designed route or area and open 24 hours a day
 9 year round, but subject to temporary resource closures. Vehicles would be allowed on the beach overnight
 10 only if someone associated with the vehicle was actively fishing. The ORV corridor would be marked by
 11 posts placed approximately 150 feet landward from the average, normal high tide line, or if less than 150
 12 feet of space is available, at the vegetation or the toe of the remnant dune line; except during breeding
 13 season in protected species areas. Existing ORV safety closures would be maintained and new closures
 14 established as needed to address safety conditions such as debris on the beach or narrow beaches. Narrow
 15 beaches would be reopened as the beach widens. The beach in front of Cape Hatteras Lighthouse and
 16 Buxton Woods road would remain closed to ORV access for administrative purposes.

17 This no-action alternative would not require vehicles to have permits and would not involve any carrying
 18 capacity restrictions. Under this alternative, vehicles operating in the Seashore must be "street legal,"
 19 have a valid vehicle registration, insurance, and license plate. The speed limit would be 25 mph (unless
 20 otherwise posted) on park beaches for public and private vehicles, although the speed limit in front of
 21 villages from September 16 to May 14) would be 10 mph. There would be no increase in parking
 22 facilities associated with this alternative. Details of the management actions under this alternative are
 23 described in table 1.

24 **ALTERNATIVE B: NO ACTION – CONTINUATION OF TERMS OF CONSENT DECREE SIGNED**
 25 **APRIL 30, 2008**

26 A consent decree was signed on April 30, 2008, in U.S. District Court, whereby the parties involved in
 27 the lawsuit to regulate beach driving along Cape Hatteras National Seashore agreed to a settlement of the
 28 case. Terms of the Consent Decree required the NPS to complete an ORV Management Plan for the
 29 Seashore by December 31, 2010, complete and promulgate the final Special Regulation by April 11,
 30 2011, and provide details of specific species protection measures to take place until the plan was
 31 completed. Under alternative B, management of ORV use and access at the Seashore would be a
 32 continuation of management based on the terms of the Consent Decree. Under the Consent Decree,

Somewhat of a Repeat of previous sentence to mgmt under IPSMS identified/enumerated in the

1 management of ORV use would follow the terms described under alternative A, except as modified by the
2 provisions of the Consent Decree. Modifications in the Consent Decree include changes to the buffers for
3 various species at the Seashore and added restrictions related to night driving. Under alternative B,
4 beaches would be closed to ORV use between the hours of 10:00 p.m. and 6:00 a.m. from May 1 to
5 November 15. However, from September 16 to November 15, ORV use from 10:00 p.m. to 6:00 a.m.
6 would be subject to the terms and conditions of a permit that can be obtained on-line or at NPS offices.
7 From March 15 to November, an ORV-free zone of at least 10 m wide would be located in the ocean
8 backshore wherever there is sufficient beach width to allow an ORV corridor of at least 20 m wide above
9 the mean high tide line. Under alternative B, buffers for protected species would be very similar to
10 alternative A, with the exception of the required 1000-meter buffer for unfledged piping plover chicks. In
11 addition to ORV use, this 1000-meter buffer would also apply to pets, kite flying, Frisbee throwing and
12 similar activities. If there is a conflict between the interim strategy/EA and the measures described in the
13 Consent Decree, the Consent Decree would prevail. Details of the management actions under this
14 alternative are described on table 1.

*How did implementation of this differ from prior mgmt (A)?
How much more beach was closed as compared to Alt A?*

15 **ACTION ALTERNATIVES**

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

19 **ELEMENTS COMMON TO ALL ACTION ALTERNATIVES**

20 The action alternatives, alternatives C, D, E, and F, [verify F when available] provide a range of
21 reasonable alternatives. The following describes elements of the management actions common to all the
22 action alternatives.

23 **Education and Outreach**

24 The Seashore would:

- 25 • Distribute educational information at local real estate rental agencies and hotels/motels.
- 26 • Improve signage related to beach closures and Seashore resources so that it is more readily
- 27 available and presented in a clear manner to the public.
- 28 • Work with local organizations and businesses to ensure wider distribution of ORV and resource
- 29 protection information.

than what?

- 1 ▪ Encourage the Visitors Bureau and local tackle shops to link their websites to the Seashore's
- 2 website to ensure different segments of the visiting public have up-to-date information on beach
- 3 closures and, if an ORV permitting system is developed, ORV permitting information.
- 4 ▪ Develop a user-friendly ORV educational program (e.g., video, DVD, or on-line) that could be
- 5 self-administered at a variety of outlets such as tackle shops, welcome centers, and NPS offices.
- 6 ▪ Implement more educational programs in local schools and expand the Junior Ranger program to
- 7 include more web-based options to interest youth in Seashore resources and stewardship.

8 **Vehicle Requirements**

- 9 • Four-wheel drive required.
- 10 • Vehicle tires may not be inflated more than 20 psi while driving on beach.

11 **Equipment Requirements**

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

13 **Accessibility for the Disabled**

- 14 • Retrofit existing boardwalks with accessible ramps to allow for more opportunities for disabled
- 15 persons to access or view the beach.

16 **ADAPTIVE MANAGEMENT APPROACHES INCLUDED IN THE ALTERNATIVES**

17 The Department of the Interior requires that its agencies “use adaptive management to fully comply” with

18 CEQ guidance that requires “a monitoring and enforcement program to be adopted...where applicable,

19 for any mitigation” (516 DM 1.3 D (7); 40 CFR 1505.2). Adaptive management is based on the

20 assumption that current resources and scientific knowledge are limited. Nevertheless, adaptive

21 management attempts to apply available resources and knowledge and adjusts management techniques as

22 new information becomes available (NPS n.d.:71).

23 Adaptive management incorporates scientific experimental methods into the management process while

24 providing flexibility to adjust to changes in the natural environment. It is based on a continuing, iterative

25 process of:

- 26 ▪ applying management actions,
- 27 ▪ monitoring consequences,

- 1 • evaluating monitoring results against plan objectives,
- 2 • adjusting management, and
- 3 • using feedback to make future management decisions (appendix XX).

4 All action alternatives incorporate adaptive management techniques designed to aid in meeting plan
 5 objectives. Each action alternative includes a specific management action and a period of monitoring to
 6 evaluate the success of the action. Integrating these issues into decision-making for future actions would
 7 allow the park to change timing, intensity, or type of management actions to better meet the goals of the
 8 plan. *to what extent? Could we ever completely shut down ORV use under the "Adaptive Mgmt" strategy? What are the limitations to management actions + decision-making?*
 9 The monitoring and adaptive management plan (appendix XX) describes the potential changes in ORV
 10 management strategies that could occur as a result of monitoring activities findings. Under this plan, key
 11 monitoring data that could influence management actions are those related to visitor experience and
 12 species protection. Based on impacts to these areas, ORV management actions would be adjusted based
 13 on the alternative selected, and additional or new management would be incorporated into plan
 14 implementation.

15 **DISCUSSION OF ACTION ALTERNATIVES**

* * * How DO THE ACTION ALTS DIFFER CONCEPTUALLY?

16 **ALTERNATIVE C: SEASONAL MANAGEMENT**

What is the alternative as it Purpose of this obje relates to meeting plan objectives?

17 This alternative would provide visitors to the Seashore with a degree of predictability regarding areas
 18 available for ORV use, as well as vehicle-free areas, based largely on the seasonal resource and visitor
 19 use characteristics of various areas in the Seashore. In this alternative, ORV use would be managed by
 20 identifying areas that (1) historically do not support sensitive resources *how does compared to D?* or (2) historically have lower
 21 visitor use. These areas would be designated as ORV use areas year-round. Areas of high resource
 22 sensitivity or high visitor use would be designated as ORV routes or areas based largely on seasonal
 23 resource sensitivity and visitor use patterns. Areas historically having safety issues would be designated
 24 as year-round closures for safety reasons if the beach is less than 100 feet wide.

POLICY identifies as the decision criterion.

25 Establishing ORV routes and use areas and vehicle-free areas based largely on seasonal resource
 26 requirements would provide the public and the Seashore with a structured management approach that
 27 clearly states which areas are available for ORV use and when the areas are open. The public would have
 28 clear direction about areas that would be open seasonally, but it would require the public to remain
 29 informed about closures. Implementation would require an increase in park staff and resources for public

*(EO, Policy, Regs)
 * No where does any document limit area closures to "sensitive resources" nor has this phrase been defined.*

1 education and enforcement, but the identification of defined use areas would provide for more efficient
2 park operations.

3 Table 2 indicates the proposed seasonal and year-round use areas under alternative C. Generally, most
4 areas would be open to ORVs from October 1 to March 31, primarily to protect certain areas during the
5 breeding season and minimize conflicts during high visitor use periods. Areas that would be seasonally
6 designated vehicle-free would include the area in front of villages, campgrounds, and lifeguarded

Whose?

7 beaches. These seasonal vehicle-free areas would occur during periods of high visitation—the summer
8 months. The spits and points ^{DEFINE} would be open seasonally to provide resource protection. The soundside
9 would be established as a vehicle-free area to protect sensitive vegetation. ^{Like what?} Parking would be available at
10 the existing soundside ramps and access paths ^{NEW OR EXISTING?} would be at designated boat launches. The Seashore would

be clearly delineated using + SIGNAGE?

maintain posts defining the locations of the parking area and access paths on the soundside.

TRAILS? PEDESTRIAN ACCESS ONLY?

12 ORV routes and use areas under this alternative would be subject to temporary resource closures

13 established when protected species behavior warrants additional protection or if protected species habitat
14 is established.

enforced? remain in place year-round?
signed?

15 Designated ORV routes and areas would be established year-round in all areas not designated as vehicle-
16 free and seasonally in areas with high visitation and/or sensitive resources. To ensure access to these
17 areas, existing ramps would be improved or reconfigured to provide access to designated routes and areas.

by whom? El how? (pedestrian only?)

18 The interdunal road network would be maintained at its current level of access. Designated ORV routes
19 and areas would be open from 6:00 AM to 10:00 PM, ^{daily,} year-round to protect sea turtles at night ^{when}

ORV-day use limits @ night to protect turtles.

20 artificial light sources can impact the turtles and allow law enforcement to concentrate their resources
21 during the daytime hours.

This sounds like no one patrols beach at night.

22 Law enforcement would designate safety closures as conditions warrant and would evaluate closures for
23 reopening at least ^{ONCE} every two weeks.

One-vehicle-deep configuration?

24 Alternative C would include a Seashore-wide, year-round carrying capacity element based on a physical
25 space requirement of one vehicle per 20 linear feet for Bodie and Hatteras Island Ranger Districts and one
26 vehicle per 30 linear feet for the Ocracoke Island Ranger District. This carrying capacity would be
27 implemented if increased visitation over the life of the plan resulted in overcrowding that could cause
28 safety concerns. The allowable number of vehicles in each area subject to the carrying capacity would be
29 determined by the space requirements and the beachfront length of the area.

Why's Different Standard?

30 Alternative C would involve a vehicle permit system, with no limits on numbers of permits issued ^{by CAHA} Permit
31 fees would be determined based on cost recovery to implement the system. To obtain the permit, ORV
32 owners would be required to read the rules and regulations governing ORV use at the seashore and

Why issue a permit if we are not going to limit # issued?

even ①-day users?

1 complete a written or on-line exam demonstrating their understanding of the rules and regulations
2 governing ORV use at the Seashore, beach driving safety, and resource closure requirements. After
3 completing the exam, the owner would be required to sign for the permit in acknowledgement that the
4 signer understands the rules and that all drivers of the permitted vehicle will abide by the rules and
5 regulations governing ORV use at the seashore. A violation of the rules and regulations by the owner or
6 driver of the ORV could result in revocation of the vehicle permit, and the owner/permittee would not be
7 allowed to obtain another permit for any ORV for a specified period of time. Designated routes and areas
8 under alternative C are shown on figure 1 and details of the management actions under this alternative are
9 described on table 1.

ORV on CATA

10 **ALTERNATIVE D: INCREASED PREDICTABILITY AND SIMPLIFIED MANAGEMENT**

11 This alternative would provide visitors to the seashore with the maximum amount of predictability
12 regarding areas available for ORV use and vehicle-free areas for pedestrian use, which means restrictions
13 would be applied to larger areas and for longer periods of time to avoid changes in approved use patterns
14 over the course of the year. Under this alternative, ORV management would be achieved by identifying
15 areas that historically do not support sensitive resources and areas of lower visitor use. These areas would
16 be designated as ORV use areas year-round. Areas of historically high resource sensitivity or high visitor
17 use [would not be designated] ORV routes or areas. Establishing ORV routes and use areas and vehicle-
18 free areas on a year-round basis (rather seasonally) would be a simplified management approach that
19 would reduce confusion about which areas are available for ORV use during a specified time, and would
20 reduce the need for staff resources on the beach. Because of the relative simplicity of the elements of this
21 alternative, implementation would require a reduced level of park staff and resources and would maximize
22 the efficiency of park operations.

This doesn't make sense to me as written.

⑧

= guarantee?

historically?

why would people go there?

All visitors?
PEDS?
ORVs?

23 Table 2 indicates the proposed year-round use areas under alternative D. Year-round vehicle-free areas
24 would include the area in front of villages, campgrounds, and lifeguarded beaches. Frisco Campground
25 would be an exception, because closing this area would close off a larger area of the beach than necessary
26 based on the existing ramp system.

Does this mimic restrictions elsewhere in Dare County?

relative to/for what?

27 Vehicle-free areas would enhance visitor safety during periods of high visitation, particularly in the
28 summer months, and would also provide a vehicle-free experience for visitors during the off-season. The
29 soundside would be established as a vehicle-free area to protect sensitive vegetation. Parking would be
30 available at the existing soundside ramps and access paths would be at designated boat launches. Vehicle-
31 free areas would be established year-round at Cape Point and the spits to provide a simplified approach to
32 sensitive species management for Seashore operations, maximizing contiguous protected areas and

Cite maps

Not on any maps included in text. If I didn't work here, I would not know where this is.

1 eliminating seasonal changes in designated ORV use areas and the associated demands on enforcing those
2 changes. Other uses would continue to be allowed in these vehicle-free areas outside of identified
3 resource closures.

4 ORV routes and use areas under this alternative would be subject to temporary resource closures
5 established when warranted by protected species behavior or if habitat is established.

6 Designated ORV routes and use areas would be established year-round in all areas not designated vehicle-
7 free. To ensure access to these areas, existing ramps could be improved or reconfigured to allow access to
8 designated routes and use areas, although the number of ramps would not change from current conditions.

9 Designated ORV routes and use areas would be open 6:00 AM to 10:00 PM year-round to protect sea
10 turtles at night (when artificial light sources can impact the turtles) and allow enforcement to concentrate
11 their resources during the daytime hours.

*They exist +
are being used
now. Why
improve &
reconfigure?*

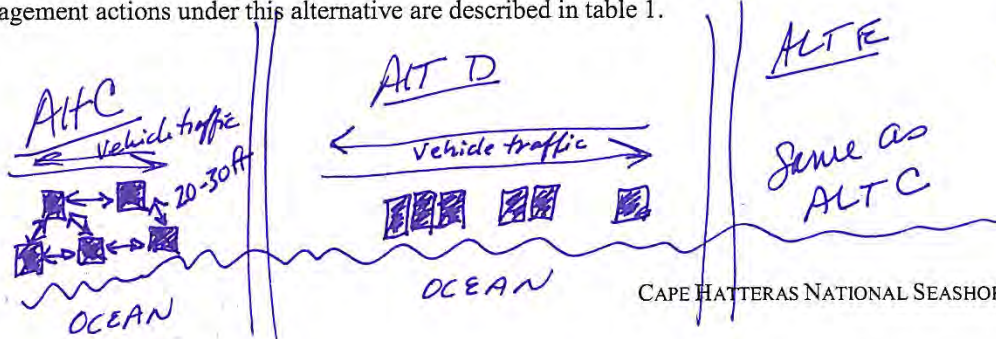
WHA!

12 Safety closures would not be designated; ORV users would drive at their own risk, including areas with a
13 history of safety issues due to narrow beach width. Drivers would rely on their knowledge of beach
14 driving to determine if an area is safe to access based on their assessment of current conditions and would
15 enter these traditionally closed areas at their own risk. *EDUCATE new visitors*

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

*what does this mean?
Need to graphically show how alternatives differ.*

19 Alternative D would involve a simple vehicle permit system, with no fees and no limits on the numbers of
20 permits issued. To obtain the permit, ORV drivers would be required to read the rules and regulations
21 governing ORV use at the seashore including beach driving safety and resource closure requirements. The
22 owner would be required to sign for the permit in acknowledgement that the signer understands the rules
23 and that all drivers of the permitted vehicle will abide by the rules and regulations governing ORV use at
24 the seashore. Special consideration would be placed on providing information about beach safety and
25 personal responsibility for safety due to the lack of safety closures under this alternative. A violation of
26 the rules and regulations by the owner or driver of the ORV could result in revocation of the vehicle
27 permit, and the owner/permittee would not be allowed to obtain another permit for any vehicle for a
28 specified period of time. Designated routes and areas under alternative D are shown on figure 1 and details
29 of the management actions under this alternative are described in table 1.



* There has been no discussion of habitat suitability for restoration or improvement to improve recovery of PROTECTED Species. Alts C-E sound like we have nothing to protect in areas

1 ALTERNATIVE E: VARIABLE ACCESS AND MAXIMUM MANAGEMENT

2 This alternative would provide use areas for all types of visitors to the Seashore, including ORV users,
3 with the highest level of access. More areas may be open year-round to ORV users because ORV
4 corridors would be established through traditionally higher pedestrian use areas and interdunal road and
5 ramp access would be improved. Vehicle-free areas would be designated for non-ORV users to
6 experience the park without the presence of vehicles. Like the other action alternatives, this alternative
7 would manage ORV use by identifying areas that historically do not support sensitive resources and areas
8 of lower visitor use. These areas would be designated as ORV use areas year-round. Areas of high
9 resource sensitivity or high visitor use would be designated as ORV use areas based on seasonal resource
10 and visitor use patterns; however, ORV corridors would be designated through a number of these areas as
11 conditions permit. Establishing seasonal ORV routes, use areas, and vehicle-free areas, and designating
12 ORV corridors for passing through some of these areas would provide ORV users access to a greater
13 number of areas within the Seashore. However, this alternative would afford the least amount of
14 predictability regarding areas available for ORV use and vehicle-free areas. Implementation would
15 perhaps be difficult to relay to the public and would require a greater number of park staff and resources
16 than the other alternatives.

17 Table 2 indicates proposed seasonal and year-round use areas under alternative E. Seasonally designated
18 vehicle-free areas would include the areas in front of villages, campgrounds (with an ORV corridor), and
19 lifeguarded beaches. The ORV open season would be defined as October 1 to March 31, to allow an
20 additional month of non-ORV use in March when visitation can be high; therefore, the seasonal vehicle-
21 free areas would occur in periods of high visitation during the spring and summer months. The soundside
22 would be established as a vehicle-free area to protect sensitive vegetation. Parking would be available at
23 the existing soundside ramps and access paths provided would be at designated boat launches. The
24 Seashore would maintain posts defining the location of the parking area and access paths. ORV corridors
25 would be designated at Cape Point and the spits year-round; however, access would not be guaranteed
26 because resource activity and capacity numbers would define access at any given time.

27 ORV routes and use areas under this alternative would be subject to temporary resource closures
28 established when warranted by protected species behavior or if habitat is established. ORV corridors
29 would be established around areas of high resource sensitivity (dependent on resource activity in the area)
30 via the interdunal road system, through improvements or reconfigurations of the existing ramp system, or
31 by establishing a beach driving corridor. Existing ramps would be improved or reconfigured to provide
32 access to designated routes and areas. Designated ORV routes and areas would be open 24 hours a day
33 from November 1 through April 30; designated ORV routes and areas would be open by permit only from

We are obligated to protect these areas regardless of sensitivity of resources.

This is inconsistent with ~~EO~~ ~~11644~~
Mgmt Policies quote on pg 35, Chapter 1

EO 11644 = minimize damage, harassment, conflicts
vs.
EO 11989 = close to ORVs when has caused or will cause considerable adverse effects
vs.
Mgmt Policies open only if = NO ADVERSE IMPACTS
3 DIFF'T Standards

1 10:00 PM to 6:00 AM from September 15 to October 31 and night driving would not be allowed from
2 May 1 to September 15, to protect sea turtles at night and allow enforcement to concentrate their
3 resources during the daytime hours. Beach camping would be permitted in designated areas and a permit
4 would be required.

5 Law enforcement would designate safety closures as conditions warrant and would evaluate closures for
6 reopening at least every two weeks.

7 Alternative E would include a carrying capacity requirement for certain heavily used areas based on a
8 physical space requirement of one vehicle per 20 linear feet for Bodie and Hatteras Island Ranger
9 Districts and one vehicle per 30 linear feet for the Ocracoke Island Ranger District. Areas of high ORV
10 use (Hatteras Inlet Spit, Cape Point, and Bodie Island Spit) would be managed via the implementation of
11 a defined carrying capacity during high-use weekends, such as major summer holidays. This carrying
12 capacity would be implemented in other areas if increased visitation over the life of the plan resulted in
13 overcrowding in other areas that could cause safety concerns. In all cases, the allowable number of
14 vehicles in each area would be determined by the space requirements and the beachfront length of the
15 area.

16 Alternative E would involve a vehicle permit system, with no limits on numbers of permits issued. Permit
17 fees would be determined based on cost recovery to implement the system. To obtain the permit, ORV
18 owners would be required to read the rules and regulations governing ORV use at the seashore and
19 complete a written or on-line exam demonstrating understanding of the rules and regulations governing
20 ORV use at the seashore, beach driving safety, and resource closure requirements. After completing the
21 exam, the owner would be required to sign for the permit in acknowledgement that the signer understands
22 the rules and that all drivers of the permitted vehicle will abide by the rules and regulations governing
23 ORV use at the seashore. A violation of the rules and regulations by the owner or driver of the ORV
24 could result in revocation of the vehicle permit and the owner/permittee would not be allowed to obtain
25 another permit for any vehicle for a specified period of time. Designated routes and areas under
26 alternative D are shown on figure 1 and details of the management actions under this alternative are
27 described in table 1.

28

29 **ALTERNATIVE F: NEGOTIATED RULEMAKING CONSENSUS**

30 To be inserted when available.

1 HOW ALTERNATIVES MEET OBJECTIVES

2 As stated in the “Purpose of and Need for Action” chapter, all action alternatives selected for analysis
 3 must meet all objectives to a ^{high} large degree. The action alternatives must also address the stated purpose of
 4 taking action and resolve the need for action; therefore, the alternatives were individually assessed in light
 5 of how well they would meet the objectives for this plan and environmental impact statement, which are
 6 stated in chapter 1. Alternatives that did not meet the objectives were not analyzed further (see the
 7 “Alternatives Eliminated from Further Consideration” section in this chapter).

8 Table 3 compares how each of the alternatives described in this chapter would meet the plan objectives.
 9 “Chapter 4: Environmental Consequences” describes the effects of each alternative on each impact topic.
 10 These impacts are summarized in table 4.

11 ALTERNATIVE ELEMENTS CONSIDERED BUT DISMISSED FROM FURTHER 12 CONSIDERATION

13 USE AREAS, ORV MANAGEMENT, AND VISITOR USE

14 Consider Pea Island National Wildlife Refuge When Considering Use Areas

15 Many commenters suggested that Pea Island National Wildlife Refuge should be considered when
 16 developing this plan/EIS. Suggestions included considering Pea Island as a vehicle-free area, and
 17 conversely, as a potential area where ORVs could be used where there is not a resource conflict.

18 Commenters felt that Pea Island National Wildlife Refuge should be considered as part of the baseline for
 19 analysis, and should be considered when providing appropriate visitor use. Although the 5,880-acre Pea
 20 Island National Wildlife Refuge is located at the northern end of Hatteras Island, and is part of the

21 Seashore, the refuge is administered by the USFWS. Because it is not administered by the Seashore, the
 22 Seashore cannot direct the visitor uses at Pea Island National Wildlife Refuge. USFWS is responsible for
 23 making decisions about ORV and pedestrian access. Currently, the USFWS has determined that ORV use
 24 ~~would not be~~ ^{IS NOT} appropriate or compatible with the mission of the refuge.

25 Require Other Jurisdictions Change Their Infrastructures and Regulations

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

- 27 • Provide NPS parking and beach access points through Dare County villages.
- 28 • Lower the speed limit on NC-12 between villages to 45 miles per hour during peak use times to
 29 reduce the danger from vehicles with “aired-down” tires.

*Beyond Scope of this plan.
Addressed via GMP/EIS + Intergovernmental Cooperation + Intergovernmental agreements + understandings.
Regional Planning Teams*

- 1 • Limit the use of bright lighting in oceanfront houses.
- 2 • Create a sound ordinance.
- 3 • Create guidelines for oceanfront structures, such as setbacks from the high tide mark and
- 4 rebuilding guidelines, to address damage to existing oceanfront structures.

Spelling

5 These suggestions would require action by the county, villages, or state. Lowering the speed limit and
 6 removing the helmet law would require a change in current state regulations. The county would be
 7 responsible for changing building codes or adding more parking and access points. Creating a sound
 8 ordinance or occupancy restrictions for rental homes would require action of the individual villages or the
 9 county. The NPS does not have the authority to require these jurisdictions to undertake such action.
 10 However, the NPS has worked with the communities within the Seashore on many issues, including those
 11 related to ORV management, and under all alternatives would continue to work cooperatively towards
 12 actions such as turtle friendly lighting and education. Although the NPS cannot require Dare County to
 13 provide more parking or beach access, some of the alternatives evaluated in this plan/EIS address
 14 additional parking areas. Creating a sound ordinance within the Seashore may be feasible.

*ARE FEASIBLE.
+ RETROFIT LIGHTING IN SEASHORE*

Provide All-Terrain Vehicle Access and Remove the Helmet Requirement

16 Commenters suggested that all-terrain vehicles (ATVs) should be allowed on the beach and that ATV
 17 users should not be required to use helmets. The NPS only allows "street-legal" vehicles on the beach
 18 under the North Carolina Motor Vehicle Code, which does not include ATVs. Alternatives in this
 19 plan/EIS do not include changing the requirement for "street legal" vehicles. The Seashore considers
 20 ATV use at the Seashore to be incompatible with visitor use and resource protection goals and objectives
 21 due to the damage they could cause. Further, "street-legal" vehicles are used for transportation, but the
 22 majority of ATVs are used for purely recreational purposes and do not serve a transportation function.
 23 Since ATVs would not be permitted, the issue of requiring helmets is not applicable.

*are these not "ORVs"?
What considered are ORVs?
not defined
NCDOT Standards.
we do not have the authority to Δ standards.
WE USE THEM for Resource protection activities.*

Issue Permits to Users Instead of Vehicles

25 For the alternatives that include a permit system, permits would be issued to the vehicle, not the person. A
 26 vehicle permit can be displayed on the vehicle, where it would be easily visible by law enforcement.
 27 Verifying that people have permits would require substantially more effort by law enforcement staff, who
 28 would have to stop each visitor and ask to see the permit. Therefore, to assist in enforcing the permit
 29 system, permits are issued to vehicles under all alternatives.

How do we deal with a permitted vehicle + driver who didn't take the test? (Under Acts C-E)

Why is this discussed?
Seems to be ~~non-~~ non-substantive.

1 **Use a Different Term for "Requirement" in Law Enforcement Text**

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

6 **Provide Round-the-Clock Enforcement**

(24-hours, daily)

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

... Create Special Regulation
~~to that~~ to manage use +
enforce it.

12 **Give Preferred Status to Human Visitors**

13 Commenters suggested that the NPS should give preferred status to human visitors, and not include
14 restrictions on human use to benefit various natural resources. The NPS has a dual mission to protect park
15 natural and cultural resources and to provide for visitor enjoyment. The courts have held that in the case
16 of conflict resource conservation must be predominant (refer to "Guiding Laws, Regulations, and
17 Policies" in chapter 1). The Seashore believes that it can both conserve Seashore resources and provide
18 for visitor enjoyment.

for future generations too!

If this is to be used, then
throughout the document
RESOURCES should be discussed
before visitor enjoyment.

19 **Species Protection**

20 **Implement an Escort Program**

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

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

JUST ONE?

JUST ONE?

Not described in document
under Admin History or
previous ORV mgmt discussions.

At what cost + # of FTE ↑ ?

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

~~These~~ These Species Are protected equally under the ESA, independent of landowner.

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

9 Commenters suggested moving hatched bird chicks from the beach to other areas where they would be
10 protected. This conflicts with NPS responsibilities under the *Endangered Species Act*, *Migratory Bird*
11 *Treaty Act*, *NPS Organic Act* (as described in the "Turtle Hatcheries" section below), and the NPS
12 *Management Policies 2006*. Further, moving chicks is not feasible because chicks must remain with their
13 ~~parents until they fledge for foraging and protection.~~ Removing chicks would not meet the plan/EIS
14 objective of minimizing adverse impacts to threatened, endangered, and other protected species.

Don't even go there. Its not necessary to discuss feasibility if it directly conflicts with law.

15 **Provide Captive Rearing of Piping Plovers and Turtles**

16 Commenters suggested rearing endangered species in captivity. Wildlife managers use captive
17 breeding/rearing of threatened or endangered species to: (1) provide an opportunity to restore populations
18 where direct translocation may risk the persistence of the donor population; or (2) as a last resort in cases
19 where most or all of the entire remaining wild population are brought to a captive breeding facility with
20 the goal of avoiding extinction and breeding enough individuals for eventual reintroduction into the wild
21 (e.g., California condor) (Gilpin and Soule 1986). ~~The Kemp's ridley sea turtle hatchery at Padre Island~~
22 ~~National Seashore~~ is an example of a last-resort captive rearing facility used to restore a population. None
23 of these situations applies to piping plover or nesting loggerhead, leatherback, or green sea turtles at Cape
24 Hatteras National Seashore, so this suggestion was not included in any of the alternatives.

* The PWS determines the need under the ESA to do this right?

25 **Relocate Bird and Turtle Nests**

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

Dismissed from further analysis.

29 **Birds**

30 ~~Some species of birds, such as the burrowing owl, adapt well to nest relocation, but others do not. Birds~~
31 ~~that do not relocate well typically are those that demonstrate higher levels of nest abandonment. Nest~~

Relocation of T+E's is not req'd under the BO nor should a National Duck Refuge fail to provide for T+E Species.

I wouldn't even go here. Relocation would be inconsistent with the law, regulations & policies of the NPS for T+E protection.

1 abandonment by piping plovers and American oystercatchers are documented sources of nest failure on
2 Cape Hatteras. Therefore, relocating nests would likely result in increased nest abandonment and failure.
3 In addition, moving nests into one area would not be feasible. Plovers and oystercatchers are solitary
4 rather than colonial nesters (i.e., they nest away from others of their species.) Plovers sometimes nest near
5 tern colonies to benefit from the aggressive behavior of terns protecting their colonies; however, they
6 typically do not nest with other plovers. Since the purpose of the strategy is species protection, and
7 moving nests would reduce these species' ability to reproduce, moving nests was eliminated from further
8 analysis.

*We regulate people 1st
(DO - 77)*

9 **Turtles**

10 **Individual Nest Relocation.** Turtles do not face the same nest abandonment issues as those described for
11 birds. Parental investment in the young ends with the laying and burying of eggs. However, the eggs,
12 subsequent hatchlings, and overall species may face additional problems related to nest relocation.
13 Studies indicate that the determination of the hatchling sex ratio depends on the temperature at which the
14 eggs incubate. Changes in these temperatures due to moving eggs may result in changes to the sex ratio,
15 having implications for the species as a whole. In addition, handling eggs can result in increased hatch
16 failure. When relocating nests, there is always a risk of disrupting the membranes inside the egg, which
17 can kill the embryo. Typically nest relocation is seen as part of an attempt to keep the species from going
18 extinct, whereas allowing for natural breeding and nesting is the ideal option whenever available.
19 Currently in North Carolina, the state permits sea turtle nest relocations for research or when there is an
20 imminent threat and potential loss of the nest due to erosion or frequent flooding, but not to accommodate
21 recreational uses. Nests in some states may be moved to avoid damage from beach nourishment or in
22 highly developed urban areas (e.g., along some urban areas of Florida's Atlantic coast). Consequently,
23 routine relocation of all nests to allow for recreational access is not considered in this plan/EIS. However,
24 the NPS would continue its current practice of coordinating with the State of North Carolina to consider
25 relocating an individual facing inundation or other adverse factors.

26 **Turtle Hatcheries.** Moving all nests or all relocated nests into one hatchery area is not fully analyzed as
27 part of any alternative. Sea turtle nests may be moved to a guarded hatchery to provide needed protection
28 from poaching in developing countries where participation in hatchery operations may be used as an eco-
29 tourism opportunity. Some county or privately owned beaches in Florida or Georgia may use hatcheries
30 for sea turtle eggs in some circumstances, such as to allow beach nourishment. However, county
31 responsibilities for endangered or threatened species differ from federal and particularly from NPS
32 responsibilities for these protected species. As a federal agency, the NPS has responsibilities under the
33 *Endangered Species Act* to protect the ecosystem as well as the species that depend on it. The purpose of

1 the *Endangered Species Act* is to “provide a means whereby the ecosystems upon which endangered
 2 species and threatened species depend may be conserved...” (Sec. 2(b)). Protecting the ecosystem is also
 3 necessary to meet the requirements of the *NPS Organic Act*, which mandates the NPS to conserve
 4 Seashore wildlife (refer to “Guiding Laws, Regulations, and Policies” in chapter 1).
 5 Loggerhead, leatherback, and green sea turtles are all currently listed pursuant to the *Endangered Species*
 6 *Act*. Any actions that would increase the likelihood of reduced productivity and species decline would not
 7 be consistent with the purpose of the Act. Therefore, use of hatcheries was not considered in this
 8 plan/EIS.

9 **Open Closed Areas After Breeding Season Is Over**

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

Use
this
more
often!

18 **Create New Habitat**

19 Commenters suggested various ways that habitat could be created to provide alternative areas for bird
 20 species at the Seashore. Some of these suggestions included letting ORVs drive on the vegetation to
 21 create habitat or physically creating habitat using dredge material in the sound or by other means. These
 22 suggestions were considered by the Seashore but are not carried forward in this plan/EIS for the following
 23 reasons:

dismissed from further analysis

24 • **Allowing visitors in ORVs to create habitat by driving over vegetated areas.** Studies on
 25 habitat creation have been considered by the NPS, and the Seashore recognizes that this could be
 26 a feasible management measure for species. However, such creation of habitat would need to
 27 occur in a controlled manner and would only be carried out by professionals trained in such
 28 projects. Therefore, allowing visitors in ORVs to create habitat was not considered in this
 29 plan/EIS.

Beyond
Scope
of
ORV
mgmt
Plan

30 • **Creation of habitat through physical alteration or the creation of dredge islands.** The NPS
 31 considered creating habitat through various methods. Based on the experience of staff at the

1 North Carolina Wildlife Resources Commission, habitat creation projects tend to be short-lived
2 and labor intensive. Based on experience with hand pulling, herbicides, fires, and bulldozing, it
3 was found that most of these techniques are effective for only one season before the vegetation
4 returns. Covering areas with new dredge material has been shown to last longer, with vegetation
5 returning after four to seven years (Cameron 2007). Although the NPS recognizes that creation
6 of habitat may be viable, at this time more research needed to determine the most effective
7 method for this process. If this method is employed, it would occur outside the scope of the
8 plan/EIS and therefore was not included in the alternatives.

9 **Fence Chicks Away from the ORV Corridor**

10 Commenters suggested using fencing to keep chicks away from the ORV corridors. Unfledged chicks of
11 any species need access to the intertidal zone and moist substrate habitat for foraging. Fencing chicks
12 away from these areas would essentially prevent them from eating; therefore, this was not considered a
13 reasonable alternative.

Feasible *IBID*

14 **Do Not Provide Protection to the Seabeach Amaranth**

15 Commenters suggested not providing protection to the seabeach amaranth because it is a farmed plant.
16 However, the seabeach amaranth is protected as a federally listed threatened plant species. Under the
17 *Endangered Species Act*, federal agencies are required to use their authorities in furtherance of the
18 purposes of the *Endangered Species Act* by carrying out programs for the conservation of endangered and
19 threatened species and to ensure that any agency action authorized, funded, or carried out by the agency is
20 not likely to jeopardize the continued existence of any endangered species or threatened species or result
21 in the destruction or adverse modification of designated critical habitat. Further, *NPS Management*
22 *Policies 2006* state that, "The Service will survey for, protect, and strive to recover all species native to
23 national park system units that are listed under the *Endangered Species Act*" (NPS 2006: 45). Not
24 providing protection to a federally listed threatened species would be ~~out of compliance with~~
25 *Endangered Species Act* and contrary to the *NPS Management Policies 2006*, and was therefore not
26 included in the alternatives of this plan/EIS.

IN VIOLATION OF

27 **Give Special Consideration Only to Flora and Fauna Listed as Threatened and Endangered**

28 Commenters suggested that only those species listed as threatened or endangered under the federal
29 *Endangered Species Act* should be considered in this plan. As stated above, the NPS has legal
30 responsibilities under the *Endangered Species Act* and ~~its own policies~~ *mgmt Policies* to protect threatened and
31 endangered species. ~~Further, a number of laws, regulations, and policies, in addition to the *Endangered*~~

Fed + state + local - listed

1 *Species Act*, guide species management at the Seashore, including the *NPS Organic Act*, the *Migratory*
 2 *Bird Treaty Act*, NPS regulations and policies, Executive Order 13186: *Responsibilities of Federal*
 3 *Agencies to Protect Migratory Birds*, and others (see chapter 1). The combination of laws, regulations,
 4 and policies included in this section of the plan/EIS create the framework in which the alternatives are
 5 developed, which includes the need to manage species that are considered to be of special concern, such
 6 as state-listed species, or those addressed by the *Migratory Bird Treaty Act*. Because of these
 7 responsibilities, only considering flora and fauna listed as federally threatened or endangered was not
 8 included in the plan/EIS alternatives.

9 **Other Issues**

10 ***Rebuild the Dunes***

11 One commenter suggested the NPS rebuild the dunes in front of NC-12. [While the NPS had engaged in
 12 addressing dune rebuilding in the past, such as around Ramp 1 and 2 to protect NPS structures,] this
 13 activity is beyond the scope of this plan/EIS [and could be addressed later in the *General Management*
 14 *Plan* process that the Seashore will undertake in the future.]

15 ***Prohibit Gill Net Fishing***

16 Some commenters asked that the Seashore prohibit gill net fishing. [Fishing activities, both commercial
 17 and recreational, at the Seashore are regulated by the State of North Carolina through the issuance of a
 18 Recreational Commercial Gear License. This license specifies the type of gear that commercial fishermen
 19 are allowed to use, which includes the use of gill nets that conform to requirements for mesh size,
 20 yardage, and marking (NCMF 2007). The Seashore has the authority to manage where commercial
 21 fishing occurs, but the manner in which it occurs is regulated by the State of North Carolina.] [Since the
 22 use of gill nets for commercial fishing is outside the jurisdiction of the NPS, it was not included as an
 23 element of the ORV plan/EIS.]

24 ***Provide an Area for Off-leash Dogs***

25 Commenters suggested that dogs be allowed off-leash at the Seashore, either seasonally, in certain areas
 26 of the Seashore under voice control, or through the creation of a dog training area. [Currently, pets at the
 27 Seashore are regulated under 36 CFR 2.13, which prohibits pet owners from "failing to crate, cage,
 28 restrain on a leash which shall not exceed six feet in length, or otherwise physically confine a pet at all
 29 times." Creation of off-leash areas would not be consistent with 36 CFR 2.13 and would require
 30 promulgation of a special regulation allowing off-leash dog use,] which is outside the scope of the ORV
 31 plan/EIS. Therefore, this element was not carried forward in any alternative.

1 **CONSISTENCY WITH THE PURPOSES OF THE NATIONAL ENVIRONMENTAL**
 2 **POLICY ACT**

3 Section to be completed after second draft comments

4 The National Environmental Policy Act requires an analysis of how each alternative meets or achieves the
 5 purposes of the act, as stated in Section 101(b). Each alternative analyzed in a NEPA document must be
 6 assessed as to how it meets the following purposes:

- 7 (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding
 8 generations;
- 9 (2) assure for all Americans safe, healthful, productive, and esthetically and culturally
 10 pleasing surroundings;
- 11 (3) attain the widest range of beneficial uses of the environment without degradation, risk of
 12 health or safety, or other undesirable and unintended consequences;
- 13 (4) preserve important historic, cultural, and natural aspects of our national heritage and
 14 maintain, wherever possible, an environment that supports diversity and variety of
 15 individual choice;
- 16 (5) achieve a balance between population and resource use that will permit high standards of
 17 living and a wide sharing of life's amenities; and
- 18 (6) enhance the quality of renewable resources and approach the maximum attainable
 19 recycling of depletable resources.

20 CEQ has promulgated regulations for federal agencies' implementation of NEPA (40 CFR Parts 1500–
 21 1508). Section 1500.2 states that federal agencies shall, to the fullest extent possible, interpret and
 22 administer the policies, regulations, and public laws of the United States in accordance with the policies
 23 set forth in the act [sections 101(b) and 102(1)]; therefore, other acts and NPS policies are referenced as
 24 applicable in the following discussion.

- 25 • Alternative A: No Action – Continuation of Management Under the Interim Protected Species
 26 Management Strategy
- 27 • Alternative B: No Action – Continuation of Terms of Consent Decree Signed April 30, 2008
- 28 • Alternative C: Seasonal Management
- 29 • Alternative D: Increased Predictability and Simplified Management
- 30 • Alternative E: Variable Access and Maximum Management
- 31 • Alternative F: Negotiated Rulemaking Consensus

TABLE 1. ALTERNATIVE ELEMENTS SUMMARIES

1 (Attached. To be inserted with next draft)

TABLE 2. ROUTES AND AREAS

2 (Attached. To be inserted with next draft)

FIGURE 1. ALTERNATIVES MAPS

3 (Attached. To be inserted with next draft)

TABLE 3. ANALYSIS OF HOW ALTERNATIVES MEET OBJECTIVES

| Objectives | Alternative A: No Action – Continuation of Management Under the Interim Protected Species Management Strategy | Alternative B: No Action – Continuation of Terms of Consent Decree Signed April 30, 2008 | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Route Management | Alternative F: Negotiated Rulemaking Consensus |
|--|---|---|--|---|---|---|
| Management Methodology | Identify criteria to designate ORV use areas and routes. | | | | | |
| Establish ORV management practices and procedures that have the ability to adapt in response to changes in the Seashore's dynamic physical and biological environment. | | | | | | |
| Establish a civic engagement component for ORV management. | | | | | | |
| Establish procedures for prompt and efficient public notification of beach access status including any temporary ORV use restrictions for such things as ramp maintenance, resource and public safety closures, storm events, etc. | | | | | | |

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| Build stewardship through public awareness and understanding of NPS resource management and visitor use policies and responsibilities as they pertain to the Seashore and ORV management. | | | | | | | | | |
| Natural Physical Resources | | | | | | | | | |
| Minimize impacts from ORV use to soils and topographic features, for example, dunes, ocean beach, wetlands, tidal flats, and other features. | | | | | | | | | |
| Threatened, Endangered, and Other Protected Species | | | | | | | | | |
| Provide protection for threatened, endangered, and other protected species (e.g., state-listed species) and their habitats, and minimize impacts related to ORV and other uses as required by laws and policies, such as the Endangered Species Act, the MBTA, and NPS laws and management policies. | | | | | | | | | |
| Vegetation | | | | | | | | | |
| Minimize impacts to native plant species related to ORV use | | | | | | | | | |
| Other Wildlife and Wildlife Habitat | | | | | | | | | |
| Minimize impacts to wildlife species and their habitats related to ORV use. | | | | | | | | | |
| Cultural Resources | | | | | | | | | |
| Protect cultural resources, such as shipwrecks, archeological sites, and cultural landscapes, from impacts related to ORV use. | | | | | | | | | |
| Visitor Use and Experience | | | | | | | | | |
| Ensure that ORV operators are informed about the rules and regulations regarding ORV use at the Seashore. | | | | | | | | | |
| Visitor Safety | | | | | | | | | |

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| Ensure that ORV management promotes the safety of all visitors. | | | | | | | | | |
| Park Operations | | | | | | | | | |
| Identify operational needs and costs to fully implement an ORV management plan. | | | | | | | | | |
| Identify potential sources of funding necessary to implement an ORV management plan. | | | | | | | | | |
| Provide consistent guidelines, according to site conditions, for ORV routes, ramps, and signage. | | | | | | | | | |

1

TABLE 4. ENVIRONMENTAL IMPACT SUMMARY BY ALTERNATIVE

| Impact Topic | Alternative A: No Action – Continuation of Management Under the Interim Protected Species Management Strategy | Alternative B: No Action – Continuation of Terms of Consent Decree Signed April 30, 2008 | Alternative C: Seasonal Management | Alternative D: Increased Predictability and Simplified Management | Alternative E: Variable Access and Maximum Route Management | Alternative F: Negotiated Rulemaking Consensus |
|--|---|--|------------------------------------|---|---|--|
| Floodplains | | | | | | |
| Wetlands | | | | | | |
| Wildlife and Habitat | | | | | | |
| Rare, Unique, Threatened, and Endangered Species | | | | | | |

28

| | | | | | | | | | |
|------------------------------------|--|--|--|--|--|--|--|--|--|
| Soundscapes | | | | | | | | | |
| Visitor Use and Experience | | | | | | | | | |
| Socioeconomics | | | | | | | | | |
| Seashore Operations and Management | | | | | | | | | |

1

2 **ENVIRONMENTALLY PREFERRED ALTERNATIVE**

3 TBD

4 **NATIONAL PARK SERVICE PREFERRED ALTERNATIVE**

5 TBD

0022997

Alternatives Maps & Matrix

eliminated from comment copy because
I have no comments on them at
this time.

- Meghan Carpioti
2/5/2009

Alternative: $\log_2 10$
 $\log_2 10 = \frac{\log_{10} 10}{\log_{10} 2} = \frac{1}{\log_{10} 2}$
 $\log_{10} 2 \approx 0.3010$
 $\log_2 10 \approx \frac{1}{0.3010} \approx 3.3219$
 - $\log_2 10$
 - $\log_2 10$

CHAPTER 3: AFFECTED ENVIRONMENT

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*+ Soils
+ Vegetation
+ Coastal Processes*

+ Other Wildlife

*LIGHT SCAPES
+ SKIES
DARK*

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CHAPTER 3: AFFECTED ENVIRONMENT

1
2 The “Affected Environment” describes existing conditions for those elements of the natural and cultural
3 environments that would be affected by the implementation of the actions considered in this plan /
4 environmental impact statement (plan/EIS). The natural environment components addressed include
5 wetlands and floodplains; wildlife and wildlife habitats (with a focus on birds and invertebrate species
6 that could be affected by ORV use or management); rare, unique, threatened, or endangered species; state
7 listed and special status species; soundscapes; visitor use and experience (including night skies);
8 socioeconomic resources; and Seashore management and operations. Impacts for each of these topics are
9 analyzed in “Chapter 4: Environmental Consequences.”

10 WETLANDS AND FLOODPLAINS

11 WETLANDS

12 Wetlands include areas inundated or saturated by surface or groundwater for a sufficient length of time
13 during the growing season to develop and support characteristic soils and vegetation. NPS classifies
14 wetlands based on the U.S. Fish and Wildlife Service (USFWS) Classification of Wetlands and
15 Deepwater Habitats of the United States, or the Cowardin classification system. Based on this
16 classification system, a wetland must have one or more of the following attributes:

- 17 • The habitat at least periodically supports predominately hydrophytic (wetland) vegetation.
- 18 • The substrate is predominately undrained hydric soil.
- 19 • The substrate is nonsoil and saturated with water, or is covered by shallow water at some time
20 during the growing season (Cowardin et al. 1979, 3).

21 The majority of the undeveloped acreage within the Seashore can be classified as a wetland. The
22 predominant wetland types at the Seashore are marine and estuarine. Marine wetlands occur along the
23 beaches on the oceanside of the Seashore, and estuarine wetlands generally occur along the soundside,
24 adjacent to the many tidal creeks that are prevalent along the islands.

25 Marine wetlands at the Seashore are located in the intertidal zone (from extreme high tide to extreme low
26 tide) and in the subtidal zone, which includes areas permanently submerged below shallow coastal waters
27 (Cowardin et al. 1979, 4). Marine wetlands are found along the entire length of the ocean shoreline and
28 are typical of a sandy beach environment, subject to high wind and wave energy. Estuarine wetlands
29 consist of deepwater and adjacent tidal wetland areas that are often partially enclosed by land but are
30 influenced by marine waters and fresh water runoff from adjacent uplands (Cowardin et al. 1979, 4).

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1 Estuarine wetlands at the Seashore typically fall into two classes: emergent or scrub-shrub. Emergent
 2 wetlands, also referred to as tidal marshes, are characterized by herbaceous perennial vegetation such as
 3 salt marsh cordgrass (*Spartina alterniflora*), black needlerush (*Juncus roemerianus*), bulrush (*Scirpus*
 4 spp.) and cattail (*Typha* spp.) (NCDENR 2008a, 1). Scrub-shrub wetlands are typically dominated by
 5 woody vegetation less than 20 feet tall. Typical vegetation species found in these wetlands include
 6 waxmyrtle (*Myrica cerifera*) and Eastern red cedar (*Juniperus virginiana*) (Sutter 1999, 20). Although
 7 most wetlands at the Seashore are tidal, there are also some areas of nontidal wetlands located primarily
 8 on Hatteras Island near the village of Buxton and Buxton Woods Coastal Reserve. These wetland areas
 9 include forested and emergent wetlands and are predominantly freshwater swamps and marshes that are
 10 not influenced by the tides.

11 Wetland areas provide substantial environmental and economic benefits to the Seashore and surrounding
 12 areas of coastal North Carolina. For example, wetlands trap sediment and pollutants from stormwater
 13 runoff and provide a natural filter before this runoff can enter local waterways. Wetlands also store large
 14 volumes of water and function as a “sponge” to reduce the likelihood of flooding during storm events.
 15 Wetlands also protect the shoreline from erosion and provide excellent habitat for fish and wildlife, many
 16 of which are threatened or endangered (NCDENR 2008b, 1). As required by Director’s Order #77-1, NPS
 17 must avoid adverse impacts on wetlands to the extent practicable, must minimize any impacts that could
 18 not be avoided, and must compensate for any remaining unavoidable adverse impacts on wetlands (NPS
 19 2008d, 2).

20 FLOODPLAINS

21 North Carolina’s barrier islands have historically been and continue to be affected by coastal forces and
 22 flooding events. The barrier islands that comprise the Seashore lie adjacent to the wide and shallow
 23 Pamlico Sound and are flat and narrow. The widest part of the Seashore islands is near Cape Point,
 24 between Buxton and Frisco (Pendleton et al. 2005, 3). According to Federal Emergency Management
 25 Agency (FEMA) Flood Insurance Rate Maps, the entire Seashore is within the 100-year floodplain.

26 Generally, lands along the ocean beaches and adjacent to the sound (at wide points) are in flood zone
 27 “VE,” which is the flood insurance rate that corresponds to 100-year coastal floodplains that have
 28 additional hazards associated with storm waves. Zone “VE” is also referred to as the “Coastal High
 29 Hazard Area.” The remainder of the Seashore not directly adjacent to the ocean or sound lies within the
 30 “AE” zone, which is within the 100-year floodplain and subject to waves less than 3 feet high
 31 (NCDCCPS 2008, 25).

*ORVs ~~also~~ + use does not Δ Floodplain status
 * Development to support ORV use / beach access etc.
 does impact floodplain values + functions.

1 Because the Seashore is entirely within the 100-year floodplain and is subject to high water table
2 conditions, many areas are conducive to drainage and flooding that often result from storm events. Areas
3 near Buxton Woods and Cape Point Campground have been documented as historically flood-prone and
4 are examples of popular Seashore destinations that experience flooding during times of above average
5 precipitation events (NPS 2003a, 1). As required by Director’s Order #77-2, the NPS must protect and
6 preserve the natural resources and functions of floodplains, must avoid environmental effects associated
7 with the occupancy and modification of floodplains, must avoid actions that could adversely affect
8 wetland functions, and must restore floodplain values previously affected by activities in floodplains
9 (NPS 2003b, 2).

10 **WILDLIFE AND WILDLIFE HABITATS**

11 In addition to the federally listed threatened and endangered species and other protected species detailed
12 in subsequent sections of this chapter, other wildlife species depend on the habitats within the Seashore.

13 This section describes those invertebrate species and other bird species that could be found in the study
14 area and could be affected by ORV management alternatives. (photos to be added)

15 **INVERTEBRATES**

16 The Seashore beach ecosystem is home to a vast quantity of invertebrates, which form a valuable link in
17 the coastal food chain. Invertebrates on sandy beaches can be classified into two groups: meiofauna,
18 which are less than 1.0 mm (0.04 inches) in size; and macrofauna, which include polychaetes,
19 crustaceans, and bivalves. Meiofauna live and feed among the sand grains and are an important part of the
20 food chain. Meiofauna are either juveniles of larger macrofauna or exist as meiofauna for their entire life
21 history. The vertical distribution of meiofauna is determined by the degree of drainage and oxygenation of
22 the sediment. On high energy beaches of coarse sand, meiofauna can extend deep into the sediment.
23 However, in low energy situations, such as sand flats with fine sand, oxygen is the major limiting factor,
24 and meiofauna are concentrated in the surface layers of the sand (Stephenson 1999, 12). Common
25 meiofauna include copepods, oligochaetes, and some polychaetes. (sidebar: Meiofauna, crustaceans,
26 bivalves, copepods, oligochaetes, polychaetes)

27 Macrofauna are invertebrates larger than 1.0 mm (0.04 inches) in size and are dominated by polychaetes,
28 bivalves, and crustaceans (principally amphipods, decapods, and isopods). The distribution of
29 macrofaunal invertebrates on individual beaches exhibits patchiness, zonation, and fluctuations related to
30 tidal and other migrations (Stephenson 1999, 11). Patchiness results from passive sorting by waves and
31 swash (part of the intertidal zone which is periodically covered by water in response to tide excursions

() There would be more to discuss in the absence of ORVs! EO's = has been is will be adverse impact*

on natural & Cultural, scenic, aesthetic values

THE STUDY AREA = SEASHORE in its entirety as described in Chapter 1.

The presumed absence of species known to occur in undisturbed habitat, some ORV use areas, IS ADVERSE IMPACT.

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1 and wave run-up), from localized food availability, from variations in the penetrability of the sand, and
2 from species actively aggregating (Stephenson 1999, 11). Zonation across a beach results from exposure,
3 changing wave energy levels, and sand water content and stability (Stephenson 1999, 11). Exposed sandy
4 beaches are typically dominated by crustaceans, while polychaetes become increasingly dominant with
5 decreasing exposure, and dominate in very protected areas (Stephenson 1999, 10). (sidebar: Macrofauna;
6 swash)

7 High energy, intertidal beaches in the southeastern United States may have as many as 30 invertebrate
8 species. Within the boundaries of the Seashore, mole crabs (*Emerita talpoida*), ghost crabs (*Ocypode*
9 *quadrata*), and coquina clams (*Donax variabilis*) are the most abundant (NPS 2006, 148–149). Ghost
10 crabs are a top predator of the beach ecosystem and can be used as an indicator species to analyze the
11 health of the beach ecosystem, due to their prominence and high susceptibility to anthropogenic
12 disturbances (VIMS 2004, 11). The ghost crab creates burrows for shelter from heat and desiccation stress
13 during summer daytime periods. Juveniles produce shallow J-shaped burrows with a mean depth of
14 160 mm (6.3 inches), while adults dig Y-shaped and spiral burrows with mean depths of 361 mm (14.2
15 inches) (Chan et al. 2006, 43). Air-breathing crustaceans such as crabs tend to be located above the drift
16 line, in what is termed the supralittoral zone or “spray zone” and is the area above the spring high tide line
17 that is regularly splashed but not submerged by ocean water (Stephenson 1999, 12). These animals
18 emerge from their burrows at night to feed in the intertidal zone. The mole crab, also known as the “sand
19 crab” or “sand flea”, is found along the Atlantic coast from Massachusetts southward. In contrast to other
20 species of crabs, they do not have pincers and move backwards rather than walking sideways. The mole
21 crab diet includes organic matter and very small animals that it collects on the sand of the swash zone
22 between periods when water inundates the beach. Between tides, they dig into the sand to hide from the
23 shorebirds and larger crabs that feed on them. Females grow to about one inch, while males grow to about
24 half an inch (Sastre 1991, 103).

25 Marine bivalves such as oysters (*Crassostrea virginica*), razor clams (*Siliqua costata*), coquina clams,
26 and ribbed mussels (*Geukensia demissa*) also inhabit the Seashore, forming the diet for many birds.
27 Clams characteristically lie buried from just beneath the surface to depths of up to 0.6 m (2 feet) (MDAR
28 2008, 1). Due to its importance in food webs, the coquina clam is considered an indicator species for the
29 sandy beach ocean front habitat. It feeds on small particles such as unicellular algae and detritus and in
30 turn, is consumed by fish and birds.

31 In the beach zones that are subject to ORV use, the areas of highest concentrations of invertebrates
32 include the moist sand flats, island spits, and the intertidal zone, as well as the wrack line (drift line). The
33 intertidal zone is defined as that part of the beach between the spring low water mark and the spring high

1 water mark. The upper limits of the intertidal zone are defined by the uppermost wrack line. A wrack line
2 is a line of stranded debris along a beach face marking the point of maximum run-up during a previous
3 high tide, and there may be several on a beach. The wrack line is composed of drying seaweed, tidal
4 marsh plant debris, decaying marine animals, shells, and miscellaneous debris washed up and deposited
5 on the beach. The wrack line provides a habitat suitable for many invertebrates such as amphipods,
6 beetles, mites, flies, and spiders. The sand flats, intertidal zone, and wrack line are extremely dynamic and
7 harsh environments, often changing over short periods of time. The various invertebrates that inhabit
8 these areas have evolved a variety of adaptations for dealing with their ever-changing environment. Some
9 burrow into the sand to escape the elements, and others migrate back and forth between the beach grass
10 and the wrack; still others migrate back and forth with the swash. (sidebar: photos of beach zones,
11 intertidal zone, wrack line)

12 The dynamics of the fauna on sandy beaches has never been completely investigated, and there is scant
13 information on the biota in intertidal beaches (NPS 2006, 149). One source of information is a three year
14 study on Cape Cod and Fire Island, New York (Steinback 1999, 1–252). The study found that amphipods,
15 which are shrimp-like crustaceans ranging from 1 mm to 140 mm in length and are particularly vulnerable
16 to drying out in immature stages, use the wrack line as cover. Several species of flies also use the site to
17 lay their eggs, and wolf spiders (family *Lycosidae*) migrate back and forth from the beach grass to the
18 wrack line to feed on these amphipods. The study observed a difference between the fauna in
19 communities inhabiting beaches with high and low off-road vehicle (ORV) traffic, with higher vehicle
20 traffic having the effect of dispersal and desiccation of the wrack line, thereby reducing the amount of
21 available food and habitat for beach organisms. (sidebar: amphipods)

22 Other invertebrates within the Seashore beach ecosystem include clamworms (*Nereis succinea*), limpets
23 (*Patella vulgata*), which can be found in the intertidal zone, and varieties of jellyfish (class *Scyphozoa*),
24 sea urchins (class *Echinoidea*), and starfish (class *Asteroidea*) (NPS 2006, 148–149), all of which spend
25 their entire lives in the water.

26 **BIRDS**

27 The Outer Banks of North Carolina provide a critical link in the migratory path of several shorebird
28 species. The barrier island ecosystems at the Seashore provide habitat for large numbers of migratory and
29 nesting bird species, and coastal marshes are critical to overwintering populations of many waterbirds.
30 Nearly 400 species of birds have been sighted within the Seashore and its surrounding waters. Migration
31 routes for many raptor species include southeastern barrier islands. Neotropical migrants use the islands

1 as a point of departure and arrival in their travels to and from their winter habitats in the tropics (NPS
 2 2006d, 149–150).

3 Studies have recorded 21 species of shorebirds (table 1) on the Outer Banks of North Carolina, such as
 4 whimbrels (*Numenius phaeopus*), willets (*Catoptrophotus semipalmatus*), and sanderlings (*Calidris*
 5 *alba*). These shorebirds are most abundant in May and August. Least terns (*Sterna antillarum*), common
 6 terns (*Sterna hirundo*), gull-billed terns (*Sterna nilotica*), black skimmers (*Rynchops niger*), piping
 7 plovers (*Charadrius melodus*), Wilson’s plovers (*Charadrius wilsonia*), willets, and oystercatchers
 8 (*Haematopus palliatus*) can all be found nesting on North Carolina beaches (North Carolina Audubon
 9 2008, 1). Several of these species are designated as state-listed and/or federally listed threatened or
 10 endangered species and are discussed in a later section of this chapter. However, nonlisted shorebirds
 11 such as willets have similar nesting and foraging habitats as state and federally listed species. The eastern
 12 willet, for instance, breeds in coastal salt marshes and nests on the ground, often in colonies, usually in
 13 well-hidden locations in short grass. These birds forage on mudflats or in shallow water, probing or
 14 picking up food by sight. Their diet consists of insects, crustaceans, and marine worms, as well as some
 15 plant material. Killdeer (*Charadrius vociferus*), whose breeding range also includes North Carolina, often
 16 nest in unlined gravel depressions. However, although killdeer are technically in the family of shorebirds,
 17 they are unusual in that they often nest and live far from water (Porter 1997, 1).

**TABLE 1. SHOREBIRDS ON THE OUTER BANKS OF NORTH CAROLINA,
 1992–1993**

| Species | Common Name |
|------------------------------------|------------------------|
| <i>Pluvialis squatarola</i> | Black-bellied Plover |
| <i>Charadrius wilsonia</i> | Wilson's Plover |
| <i>Charadrius semipalmatus</i> | Semipalmated Plover |
| <i>Charadrius melodus</i> | Piping Plover |
| <i>Haematopus palliatus</i> | American Oystercatcher |
| <i>Catoptrophotus semipalmatus</i> | Willet |
| <i>Numenius phaeopus</i> | Whimbrel |
| <i>Limosa fedoa</i> | Marbled Godwit |
| <i>Arenaria interpres</i> | Ruddy Turnstone |
| <i>Calidris canutus</i> | Red Knot |
| <i>Calidris alba</i> | Sanderling |
| <i>Calidris pusilla</i> | Semipalmated Sandpiper |
| <i>Calidris mauri</i> | Western Sandpiper |
| <i>Calidris minutilla</i> | Least Sandpiper |
| <i>Calidris alpina</i> | Dunlin |

TABLE 1. SHOREBIRDS ON THE OUTER BANKS OF NORTH CAROLINA, 1992–1993

| Species | Common Name |
|-----------------------------|------------------------|
| <i>Limnodromus griseus</i> | Short-billed Dowitcher |
| <i>Charadrius vociferus</i> | Killdeer |
| <i>Tringa melanoleuca</i> | Greater Yellowlegs |
| <i>Tringa flavipes</i> | Lesser Yellowlegs |
| <i>Actitis macularia</i> | Spotted Sandpiper |
| <i>Calidris fuscicollis</i> | White-rumped Sandpiper |

Source: Dinsmore et al. 1998, 174

1 Migratory birds are often found throughout the year on the way to and from their destinations. During the
 2 winter months, the common loon (*Gavia immer*), pied-billed grebe (*Podilymbus podiceps*), northern
 3 gannet (*Morus bassanus*), tundra swan (*Cygnus columbianus*), as well as Canada geese (*Branta*
 4 *canadensis*), are common sights at the Seashore. During the summer migratory season, several varieties
 5 of herons (*Ardea herodias*), Audubon’s shearwater (*Puffinus lherminieri*), and the barn swallow (*Hirundo*
 6 *rustica*) populate the Cape Hatteras shores. While less frequently sighted, grebes (*Podiceps auritus*),
 7 mallard ducks (*Anas platyrhynchos*), hawks (genus *Accipiter*), bald eagles (*Haliaeetus leucocephalus*),
 8 peregrine falcons (*Falco peregrinus*), and various species of sandpipers also inhabit the island at one
 9 point or another throughout the year. Rarely, birds like the tropical masked booby (*Sula dactylatra*) and
 10 the magnificent frigate bird (*Fregata magnificens*) have been seen (NPS 2006d, 149–150). Common
 11 crows (*Corvus brachyrhynchos*) and gulls (*Larus canus*) are also present within the Seashore.

12 **RARE, UNIQUE, THREATENED, OR ENDANGERED SPECIES**

13 This section addresses species present at the Seashore that are listed by USFWS as either endangered or
 14 threatened. In some cases, the species may also be listed by the state of North Carolina. These species
 15 include the federally listed piping plover, federally and state-listed loggerhead, green, and leatherback
 16 turtles, and federally and state-listed seabeach amaranth (*Amaranthus pumilus*).

17 Species listed only by the state, and which are not federally listed as threatened and endangered, are
 18 discussed in the State Listed and Special Status Species section.

19 **PIPING PLOVER**

20 The piping plover is a small (6 to 7 inches long, weighing 1.5 to 2.2 ounces), highly camouflaged, sand-
 21 colored shorebird endemic to North America (Haig 1992, 2). Two genetic races (Haig 1992, 2) and three
 22 geographic subpopulations are recognized: (1) the Atlantic Coast (from the Maritime Provinces of Canada

FAR TOO MUCH
Information

1 **PIPING PLOVER**

2 The piping plover is a small (6 to 7 inches long, weighing 1.5 to 2.2 ounces), highly camouflaged, sand-
3 colored shorebird endemic to North America. Two genetic races and three geographic subpopulations are
4 recognized: (1) the Atlantic Coast (from the Maritime Provinces of Canada to the Outer Banks of North
5 Carolina), (2) the Great Lakes (along Lake Superior and Lake Michigan), and (3) the Great Plains (from
6 southern, prairie Canada to Iowa). Wintering populations are found on the Atlantic Coast, from North
7 Carolina to Florida, and on the Gulf Coast, from Florida to Mexico, and in the Caribbean, with the
8 greatest number of wintering birds found in Texas. Fewer than 3,000 breeding pairs of piping plovers
9 were detected in the U.S. and Canada in 2001. Habitat loss caused by human development and recreation,
10 and low reproductive rates caused by disturbance and predation, are considered to be the primary causes
11 of the decline (Elliot-Smith and Haig 2004, 1).

12 Piping plovers were common along the Atlantic Coast during much of the 19th century, but nearly
13 disappeared due to excessive hunting for decorative feathers. Following passage of the Migratory Bird
14 Treaty Act in 1918, plover numbers recovered to a 20th century peak which occurred during the 1940s.
15 Increased development and beach recreation after World War II caused the population decline that led to
16 federal protection for the plover (USFWS 2007b, 1). The Atlantic Coast population was federally listed in
17 1986 as threatened (Federal Register 1985). At the time of listing, there were approximately 790 Atlantic
18 Coast pairs, and the species was in decline. Therefore, a recovery target of 2,000 pairs was established in
19 the 1996 Revised Recovery Plan for the Atlantic Coast population (USFWS 1996a, *iii*). Disturbance and
20 predation were intensively managed after the listing, and the Atlantic Coast population rose to 1,890 pairs
21 by 2007 (USFWS 2007, 1), but was still short of the recovery goal of 2,000 pairs (USFWS 1996a, *iii*;
22 USFWS, Hecht, pers. comm. 2008).

23 Piping plover population density is less south of New Jersey than in the north and was estimated at 333
24 pairs in 2007, short of the regional goal for the southern Atlantic Coast of 400 pairs (table 2). North
25 Carolina experienced more than a 50% decline in breeding pairs from 1989 (55 pairs) to 2003 (24 pairs)
26 (USFWS 2004b, 4) for reasons discussed in the "Risk Factors" section later in this document; however,
27 the number of breeding pairs has since climbed to a 22 year high of an estimated 64 pairs in 2008
28 (NCWRC 2008, 2).

TABLE 2. SOUTHERN REGION (INCLUDING NORTH CAROLINA) PIPING PLOVER
POPULATION TRENDS, NUMBER OF BREEDING PAIRS

| | Delaware | Maryland | Virginia | North Carolina | South Carolina | Southern Region |
|------|----------|----------|----------|-------------------|-------------------|--------------------|
| 1986 | 8 | 17 | 100 | 30 ^b | 3 | 158 |



**TABLE 2. SOUTHERN REGION (INCLUDING NORTH CAROLINA) PIPING PLOVER
POPULATION TRENDS, NUMBER OF BREEDING PAIRS**

| | Delaware | Maryland | Virginia | North Carolina | South Carolina | Southern Region |
|-------------------|----------|----------|----------|-----------------|----------------|-----------------|
| 1987 | 7 | 23 | 100 | 30 ^b | — | 160 |
| 1988 | 3 | 25 | 103 | 40 ^b | — | 171 |
| 1989 | 3 | 20 | 121 | 55 | — | 199 |
| 1990 | 6 | 14 | 125 | 55 | — | 200 |
| 1991 | 5 | 17 | 131 | 40 | — | 193 |
| 1992 | 2 | 24 | 97 | 49 | — | 172 |
| 1993 | 2 | 19 | 106 | 53 | — | 180 |
| 1994 | 4 | 32 | 96 | 54 | — | 186 |
| 1995 | 5 | 44 | 118 | 50 | — | 217 |
| 1996 | 6 | 61 | 87 | 35 | — | 189 |
| 1997 | 4 | 60 | 88 | 52 | — | 204 |
| 1998 | 6 | 56 | 95 | 46 | — | 203 |
| 1999 | 4 | 58 | 89 | 31 | — | 182 |
| 2000 | 3 | 60 | 96 | 24 | — | 183 |
| 2001 | 6 | 60 | 119 | 23 | — | 208 |
| 2002 | 6 | 60 | 120 | 23 | — | 209 |
| 2003 | 6 | 59 | 114 | 24 | — | 203 |
| 2004 ^a | 7 | 66 | 152 | 20 | — | 245 |
| 2005 ^c | 8 | 63 | 193 | 37 | — | 301 |
| 2006 ^d | 9 | 64 | 202 | 46 | — | 321 |
| 2007 ^e | 9 | 64 | 199 | 61 ^f | — | 333 |

^aSource: USFWS 2004, figures are preliminary estimates

^bThe recovery team believes that the apparent 1986–1989 increase in the North Carolina population is because of an intensified survey effort.

^cUSFWS 2005. Preliminary 2005 Atlantic Coast Piping Plover Abundance and Productivity Estimates

^dUSFWS 2006a. 2006 Atlantic Coast Piping Plover Abundance and Productivity Estimates

^eUSFWS 2007. 2007 Atlantic Coast Piping Plover Abundance and Productivity Estimates

^fFor 2008, the end-of-season best estimate is 64 pairs. This represents a 5% increase from the 2007 best estimate of 61 pairs and is the highest number recorded along North Carolina in the years that complete surveys have been conducted (1989–2008).

Source of 1986–2001 data is USFWS 2002

Source of 2002–2003 data is USFWS 2004b

— = No data available.

1 Piping Plover in North Carolina

- 2 North Carolina is presently the only state on the Atlantic Coast that hosts piping plovers during all phases
- 3 of the annual cycle (Cohen 2005a, 6), including the establishment and holding of territories, courtship and

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2/5/2009

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2/10/60

CUMULATIVE IMPACTS

The CEQ regulations to implement the National Environmental Policy Act require the assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts are considered for all alternatives, including the no-action alternative.

Cumulative impacts were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects and plans at Cape Hatteras and, if applicable, the surrounding region. Table 25 summarizes these actions that could affect the various resources at the seashore. These actions are described in more detail in the “Related Policies, Laws, Plans, and Actions” section of this document (see the “Purpose of and Need for Action” chapter).

The analysis of cumulative effects was accomplished using four steps:

Step 1—Resources Affected. Fully identify resources affected by any of the alternatives.

Step 2—Boundaries. Identify an appropriate spatial and temporal boundary for each resource.

Step 3—Cumulative Action Scenario. Determine which actions to include with each resource.

Step 4—Cumulative Impact Analysis. Summarize x + y statements, proposed action plus cumulative action, defining context, intensity, duration and timing; defining thresholds, methodology, etc.

TABLE 25: CUMULATIVE IMPACT SCENARIO

| Impact Topic | Study Area | Past Actions | Present Actions | Future Actions (life of plan/EIS) |
|--|---|---|--|--|
| Federally Listed Threatened & Endangered Species | Specific to species as identified in Recovery Plans | Oregon Inlet Dredging Commercial Fishing Storms and Other Weather Events County Land Use Development Plan for Dare and Hyde Counties Hurricane Recovery Continued Maintenance of NC-12 and Berms Berm Maintenance for Private Property in Front of Villages (NPS Authorized) Resource Management Plan Long-Range Interpretive Plan Previous ORV plans Special Use Permits/Activities Concession Permits/Operations | Same as past, plus Predator Management Plan (under development) Commercial Services Plan (under development) | Same as present , plus Development of Cape Lookout National Seashore long-term ORV Management Plan/EIS Revision of the General Management Plan Replacement of Bonner Bridge |

ENVIRONMENTAL CONSEQUENCES

TABLE 25: CUMULATIVE IMPACT SCENARIO

| Impact Topic | Study Area | Past Actions | Present Actions | Future Actions (life of plan/EIS) |
|--|-------------------------------------|--|---|--|
| | | Species research efforts USFWS Species Recovery Plans | | |
| State-listed or Special Status Species | Focus on North Carolina populations | Same as above | Same as above | Same as above |
| Other Wildlife (birds, invertebrates) | Seashore Boundary | Same as above. | Same as above. | Same as above. |
| Visitor Use and Experience | Seashore Boundary | Commercial Fishing Storms and Other Weather Events Continued Maintenance of NC-12 and Berms Hurricane Recovery General Management Plan Resource Management Plan Long-Range Interpretive Plan | Same as Past, plus: Ocracoke transportation study Commercial Services Plan (under development) Predator Management Plan (under development) | Same as Present, plus Development of Cape Lookout National Seashore long-term ORV Management Plan/EIS Bonner Bridge Replacement Opening of Dune Road Around Cape Point Revision of the General Management Plan |
| Socioeconomics Including Local Commercial Fishing Activities | Regional—counties | Commercial Fishing Storms and Other Weather Events | Same as Past, plus: Ocracoke transportation study | Same as present, plus: Development of Cape Lookout National Seashore Long-term ORV Management Plan/EIS Opening of Dune Road Around Cape Point |
| Seashore Management and Operations | Seashore Boundary | General Management Plan Commercial Fishing Storms and Other Weather Events Oregon Inlet Dredging Hurricane Recovery Resource Management Plan Long-Range Interpretive Plan | Same as Past, plus Ongoing Law Enforcement Ongoing Research Studies Ongoing Maintenance Ongoing Surveying Predator Management Plan (under development) Commercial Services Plan (under development) | Same as Present, plus Opening of Dune Road Around Cape Point Revision of the General Management Plan |
| Wetlands and Floodplains | Seashore Boundary | Oregon Inlet Dredging Storms and Other Weather Events County Land Use Development Plan for Dare and Hyde Counties Hurricane Recovery Resource Management Plan Continued Maintenance of NC-12 and Berms Berm Maintenance for Private Property in Front of Villages (NPS Authorized) | Same as Past, plus ?? [are there any current actions that are affecting wetlands or floodplains] | Same as Present, plus ?? [any other future actions other than those listed?] Bonner Bridge replacement |

TABLE 25: CUMULATIVE IMPACT SCENARIO

| Impact Topic | Study Area | Past Actions | Present Actions | Future Actions (life of plan/EIS) |
|---------------------|-------------------|---|--|---|
| Soundscapes | Seashore Boundary | Oregon Inlet Dredging Storms and Other Weather Events Continued Maintenance of NC-12 and Berms Berm Maintenance for Private Property in Front of Villages (NPS Authorized) | Same as past, plus Increased vehicle traffic and village events | Same as Present, plus: Bonner Bridge Replacement |

The past, present, and future actions outlined in Table 25 are described in the Related, Laws, Policies, Plans, and Actions section in the "Purpose of and Need for Action." Recreational use, past, present, and future, is considered as an integral part of the action alternatives and is, therefore, not addressed within the cumulative impact scenario.

ENVIRONMENTAL CONSEQUENCES