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CAHA # 2003

CHAPTER 3: AFFECTED ENVIRONMENT

Comments: MBMurray

Page 4, line 6: Should it be Southern "**Recovery Unit**" instead of Southern "Region"? Is there a difference? Either way, need to define it as including Delaware, Maryland, Virginia and North Carolina, e.g., "…the Atlantic Coast Southern Region **or Recovery Unit, which includes Delaware, Maryland, Virginia, North Carolina and South Carolina**,…"

Page 7, Line 16: "~~All piping plover breeding~~ **Four** sites at the Seashore were designated as critical habitat…"

Page 9, line 30: "…and begin to scrape and build nests ~~in~~ **by** the third week of April…"

Page 10, line 1: "Nesting has occurred in all **but one** of these sites in the last 10 years."

Page 10, line 21: "However, a rate of ~~1.20~~ **1.25*** fledged chicks per breeding pair…"
**PIPL Recovery Plan Appendix E: Results: Fecundity Needed*...* We estimated a mean annual fecundity of 1.245 chicks fledged per pair is needed to maintain a stationary population."

Page 20, line 7: "…were highest at South Point **(Ocracoke)**, followed by…"

Page 23, line 8: "Pilot implementation of ~~this~~ **a** long-term shorebird monitoring protocol…"

Page 24, Figure 7 and Figure 8 titles: Need to explain (some place, either in text on previous page, or in text for each table) what "detection frequency" and "normalized count" mean in layman's terms, or readers will not understand the significance of the "numbers" shown in the graphs.

Page 26, Risk Factors, paragraph 3, lines 20-28: It is a little confusing in that it bounces from statements about PIPL at CAHA to statements about PIPL in general. The net result is that it sounds like all the studies (e.g., Melvin 1994 and Cohen 2008) mentioned were conducted at CAHA, which is not the case. Stakeholders will know the difference and view the ambiguity as intentional misrepresentation of general information as if it had been studied and documented at CAHA. Be more precise in identifying what location each sentence refers to. For example: Lines 21-22: "However, it is known that piping plover foraging and roosting habitats **at Cape Hatteras** are used by pedestrians and ORVs…" "~~Therefore~~ **Where such activity is allowed, studies (where?) have shown that there is** the potential ~~exists~~ for piping plovers to be killed… "Studies **(where?)** have the shown that the density of wintering plovers…"

Pages 28-31, section on "Human Activity": Somewhere in the DEIS (either in the Affected Environment section or in the section identifying other plans) we need to make more use of information from the Piping Plover Recovery Plan, especially Appendix G, about the risk factors related to recreation and recommended management of those risk factors. It is important to include this level of detail from the Recovery Plan to establish where many of our PIPL management measures came from. Find some place appropriate to include the following information **(it is okay to condense it, if practical to do so):**

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The Piping Plover Recovery Plan, *Appendix G: Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act*, provides guidance to beach managers and property owners seeking to avoid potential violations of Section 9 of the Endangered Species Act (16 U.S.C. 1538) and its implementing regulations (50 CFR Part 17) that could occur as the result of recreational activities on beaches used by breeding piping plovers along the Atlantic Coast. These guidelines were developed by the Northeast Region, U.S. Fish and Wildlife Service (Service), with assistance from the U.S. Atlantic Coast Piping Plover Recovery Team. The guidelines are advisory, and failure to implement them does not, of itself, constitute a violation of the law. Rather, they represent the U.S. Fish and Wildlife Service's best professional advice to beach managers and landowners regarding the management options that will prevent direct mortality, harm, or harassment of piping plovers and their eggs due to recreational activities. Appendix G makes the following recommendations:

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

Available data indicate that a 50 meter buffer distance around nests will be adequate to prevent harassment of the majority of incubating piping plovers. However, fencing around nests should be expanded in cases where the standard 50 meter-radius is inadequate to protect incubating adults or unfledged chicks from harm or disturbance. Data from various sites distributed across the plover's Atlantic Coast range indicates that larger buffers may be needed in some locations (see Table 3, page 12). This may include situations where plovers are especially intolerant of human presence, or where a 50 meter-radius area provides insufficient escape cover or alternative foraging opportunities for plover chicks. In cases where the nest is located less than 50 meters above the high tide line, fencing should be situated at the high tide line, and a qualified biologist should monitor responses of the birds to passersby, documenting his/her observations in clearly recorded field notes. Providing that birds are not exhibiting signs of disturbance, this smaller buffer may be maintained in such cases. On portions of beaches that receive heavy human use, areas where territorial plovers are observed should be symbolically fenced to prevent disruption of territorial displays and courtship. Since nests can be difficult to locate, especially during egg-laying, this will also prevent accidental crushing of undetected nests. If nests are discovered outside fenced areas, fencing should be extended to create a sufficient buffer to prevent disturbance to incubating adults, eggs, or unfledged chicks. Pets should be leashed and under control of their owners at all times from April 1 to August 31 on beaches where piping plovers are present or have traditionally nested. Pets should be prohibited on these

beaches from April 1 through August 31 if, based on observations and experience, pet owners fail to keep pets leashed and under control. Kite flying should be prohibited within 200 meters of nesting or territorial adult or unfledged juvenile piping plovers between April 1 and August 31. Fireworks should be prohibited on beaches where plovers nest from April 1 until all chicks are fledged.

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

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

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

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

      AND

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

      AND

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

AND

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

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

1. The vehicle free area should extend 1000 meters on each side of a line drawn through the nest site and perpendicular to the long axis of the beach. The resulting 2000 meter-wide area of protected habitat for plover chicks should extend from the ocean-side low water line to the bay-side low water line or to the farthest extent of dune habitat if no bay-side intertidal habitat exists. However, vehicles may be allowed to pass through portions of the protected area that are considered inaccessible to plover chicks because of steep topography, dense vegetation, or other naturally-occurring obstacles.

OR

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

   AND

   B. Specifies the minimum size of vehicle-free areas to be established in the vicinity of unfledged broods based on the mobility of broods observed on the site in past years and on the frequency of monitoring. Unless substantial data from past years show that broods on a site stay very close to their nest locations, vehicle-free areas should extend at least 200 meters on each side of the nest site during the first week following hatching. The size and location of the protected area should be adjusted in response to the observed mobility of the brood, but in no case should it be reduced to less than 100 meters on each side of the brood. In some cases, highly mobile broods may require protected areas up to 1000 meters, even where they are intensively monitored.

Protected areas should extend from the ocean-side low water line to the bay-side low water line or to the farthest extent of dune habitat if no bay-side intertidal habitat exists. However, vehicles may be allowed to pass through portions of the protected area that are considered inaccessible to plover chicks because of steep topography, dense vegetation, or other naturally-occurring obstacles. In a few cases, where several years of data documents that piping plovers on a particular site feed in only certain habitat types, the Service or the State wildlife management agency may provide written concurrence that vehicles pose no danger to plovers in other specified habitats on that site.

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

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

   OR

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

If hatching occurs earlier than expected, or chicks are discovered from an unreported nest, restrictions on vehicles should begin immediately. If ruts are present that are deep enough to restrict movements of plover chicks, then restrictions on vehicles should begin at least 5 days prior to the anticipated hatching date of plover nests. If a plover nest is found with a complete clutch, precluding estimation of hatching date, and deep ruts have been created that could reasonably be expected to impede chick movements, then restrictions on vehicles should begin immediately.

Essential Vehicles: Because it is impossible to completely eliminate the possibility that a vehicle will accidentally crush unfledged plover chicks, use of vehicles in the vicinity of broods should be avoided whenever possible. However, the Service recognizes that life-

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

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

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

Page 30, line 20: "Vehicles have been documented **(where?)** running over nests (Patterson et al. 1991) and bird." *Comment: Lack of a location makes it sound like it occurred at CAHA.*

Pages 36-37, "Potential Threats – Nesting Environment" section. References used seem dated (1991). It is important that we use details from the 2008 Loggerhead Recovery Plan to establish the basis for where our management methods come from. We have stakeholders that want us to manage differently than the latest recovery plan recommends (e.g., some want us to establish hatcheries). We should use the language from "Section H, Threats...", including part or all of the following sections:

- p. I-32, Human Presence
- p. I-33, Recreational Beach Equipment
- p. I-33, Beach Vehicular Driving
- p. I-34 - 35), Research and Conservation Management Activities
- p. I-41, Beach Erosion and Accretion

- p. I-42 - 43, Lighting Pollution
- p. I-43 - 44, Beach Debris
- p. I-46, Natural Catastrophes

We should also use language from "Section I, Major Conservation Measures" to identify the recommended management of those threats to reduce human related mortality on the nesting beach, including the following sections:

- p. II-49, 2225. Prohibit recreational equipment on nesting beaches at night
- p. II-51, 231. Maintain at least the current length and quality of protected nesting beach
- Starting on p. II-54, 51. Minimize the effects of light pollution on hatchlings and nesting females. Subsections: 2512, 252
- Starting on p. II-69 61. Minimize impacts to sea turtles on nesting beaches. Subsections: 6113, 6114, 6121, 6123, 614, 6142, 6143, 6144, 615

Page 38, line 10: "Violations of ~~closed areas~~ **sea turtle nest protection areas** by ORVs…"

Page 42, lines 4-7: "**Most of** these species breed on Cape Hatteras as well as in other areas of North Carolina. Species described include American oystercatcher, **four species of colonial waterbirds including gull-billed terns, least terns, common terns, and black skimmers, Wilson's plover, and red knots. The latter species breeds in the Arctic and uses the Seashore as a stopover during its annual migration.** ~~red knot, Wilson's plover, and several species of colonial waterbirds such as as least tern, common tern, gull-billed terns, Forster's tern (*Sterna forsteri*), black skimmer, and sooty tern (*Sterna fuscata*).~~

Page 50, Table 15: For the bottom three references in the table, be more precise in the "Behavior" column or stakeholders will not understand the applicability and think it is a general standard that should apply to nesting adults or unfledged chick situations. For example (in Row 3), does "Foraging" apply only to "nonbreeding adult foraging," "breeding adult foraging", "chick foraging" or something else. Same issue with "Behavior" column for Rows 4 and 5. Add USGS protocol to the bottom row of the table and show the recommended buffer for nests (150m) from the synthesis documents.

Page 52, line 19: "…(McGowan and Simons, 2006). ~~ORV~~ **All-terrain vehicle (ATV)** traffic was associated with…" *(Comment: "Truck use" mentioned in line 21 is the equivalent of ORV use at CAHA, were we do not allow recreational ATV use.)*

Page 53, line 22: "The common tern ~~is a wide-spread species that~~ can be found …"

Page 59, line 17: "…recreational disturbance~~s on the outer and village beaches~~,…" *(Comment: phrase doesn't make sense as originally written. Not sure what was intended, so not sure if the above edit fixes it or loses some intended meaning.)*

Page 61, between lines 2 and 3: Add a table, similar to Table 15 on p. 50, showing CWB buffer distances from various studies. Include "USGS protocols" recommended buffer distances (from synthesis document) in the bottom row of the new table.

Page 62, lines 2-3: "In 2008 the Seashore **modified the existing** ~~implemented a well-developed~~ predator trapping program~~, which was unavailable~~ **to provide a more sustained trapping effort than occurred** in previous seasons. The trapping program ~~deflated~~ **focused on depredation in the vicinity of shorebird nesting areas in an effort to reduce localized** populations of…"

Page 66, line 27: "~~According to representatives from the National Audubon Society~~*!*, ~~redknots within the Seashore use…on Ocracoke and Bodie Island. Red knots only use the Seashore in the winter and during spring and fall migration."~~ **Red knots do not breed on the Seashore, but use it primarily in the winter and during the fall and spring migration.**

Page 68, Figure 16: **Need to explain "normalized counts" in layman's terms.**

Page 83, line 2: "…included ~~viewing the "Lost Colony" play~~, family time/reunion…"
(Comment: "The Lost Colony" is held at Fort Raleigh NHS, which is not within the Seashore.)

Page 86, line 14: "…crossing site**, hence the name "ramp,"** to prevent the sand…"

Page 88, line 9: "…The counters also fail**ed** to register…"

Page 90, lines 15-16: "However, vehicular access is **typically** limited ~~on~~ **to short distances along sandy portions of** the sound~~side~~ **shoreline** because the Seashore prohibits ORV use on vegetated areas,…"

Page 90, line 21: "These closures did not **significantly** decrease the sum total…"

Page 91, lines 8-9: "~~When full beach closures occur, ORV traffic may be temporarily routed around the landward side of the closure area to provide ORV access to open sections of beach.~~"
(Comment: Delete entire sentence. Although the statement was mentioned in the interim strategy, as a practical matter no situations have occurred in which this could be applied.)

Page 92, lines 19-21: "~~The most immediate effect of the consent decree was that it established a prohibition on night driving on beaches between the hours of 10 p.m. and 6 a.m. from May 1 through November 15.~~ The consent decree ~~also~~ resulted in larger buffers…"

Page 92, line 27: "…to protect birds exhibiting breeding, nesting, and/or foraging behavior. **The consent decree also established a prohibition on night driving on beaches between the hours of 10 p.m. and 6 a.m. from May 1 through November 15.** (Insert photo of typical closures for birds and turtles.)

Page 92, line 32: "generally, ORVs and pedestrians can negotiate around these posted closures **for sea turtle nests**. However,…"

Page 93, line 13-14: "…village beaches are closed **to ORVs** ~~in the summer~~ to protect ~~visitors~~ pedestrians during the busy summer season ~~in areas such as Rodanthe, Waves, Salvo, Avon, Frisco, and Hatteras~~."

Page 93, line: 22: As part of the visitor experience, visitor safety is also considered. Public comment on this **plan/EIS** indicated…" *(**Comment: "plan/EIS" is confusing since the ORV plan/EIS did not exist previously. Does this refer to the Univ. of Idaho study mentioned in the previous paragraph? Or, the public scoping for the ORV plan/EIS? Or, the ORV alternatives workbook? Need to clarify which study or plan line 22 is talking about.)*

Page 95, line 31: The ~~towns~~ **villages of** Ocracoke, Hatteras, Frisco, **Buxton,** Avon, ~~Buxton~~, Salvo,…"

Page 102, lines 14-15: "The majority of businesses within the ROI are located in the northern three zip codes of Dare County, encompassing the towns of Duck, Southern Shores, **Kitty Hawk,** Kill Devil Hills, and Nags Head." *(Comment: Duck, Southern Shores, and Kitty Hawk have the same zip code.)*

Page 115, lines 1-3: SEASHORE ~~MANAGEMENT AND~~ OPERATIONS **AND MANAGEMENT**
"~~Seashore management and operations activities related to ORV management fall within the various operational divisions of the Seashore, which include Administration, Resources Management~~…" **Management of ORV use at the Seashore, and implementation of the related administrative activities and field operations, involves all five NPS operational divisions, as well as the Superintendent's Office (Park Management).** The baseline for park operations and management…"

Page 115, line 7: "**Management and Administration**. **Management and a**dministrative staff members at the Seashore…" (*Comment: "Management" refers to the staff of the Superintendent's Office. "Administration" in the park operations context refers specifically to one of the five park divisions, which also includes: Interpretation, Maintenance, Resources Management, and Visitor Protection (Law Enforcement).)*