



## ENDANGERED AND THREATENED SPECIES HABITAT

### ON “THE POINT”, BALD HEAD ISLAND

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The “Point” of land at the juncture of West Beach and South Beach, BHI is of significant and unique ecological importance. The Point is used by many different species of plants and animals in the dune/beach ecosystem and is particularly valuable habitat because of the extensive dune crest habitat – the area above the high-tide line and below the major vegetation. This wide sandy area on BHI is unique, in part, because humans rarely trespass. The dune crest habitat at the Point has been most impacted by the semiannual dredging off the coast of BHI. This year, when dredging has not been complemented by renourishment to replace eroded sand from the Point, essential habitat has disappeared—either eroded away or washed over. There is no longer any sea turtle, shorebird, or endangered plant habitat in the area known as the Point as well as adjacent beaches along West and South Beaches. According to the Endangered Species Act, any listed species are protected from take, and take includes destruction of habitat. Loss of nesting and foraging habitat would certainly fall under the definition of take. Restoration and preservation of habitat is essential for the long term survival of federally endangered or threatened species.

Affected state and federally listed flora/fauna by loss of beach at the South/West “Point”:

#### **SEA TURTLE:**

Loggerhead Sea Turtle: Federally listed as Threatened

Green Sea Turtle: Federally listed as Endangered

#### **PLANT:**

Seabeach Amaranth: Federally listed as Endangered

#### **BIRD:**

Least Tern: Species of Special Concern

Piping Plover: Federally listed as Threatened

Wilson’s Plover: Listed in North Carolina as a Species of Special Concern

American Oystercatcher: Species of Special Concern

Common Tern: Species of Special Concern

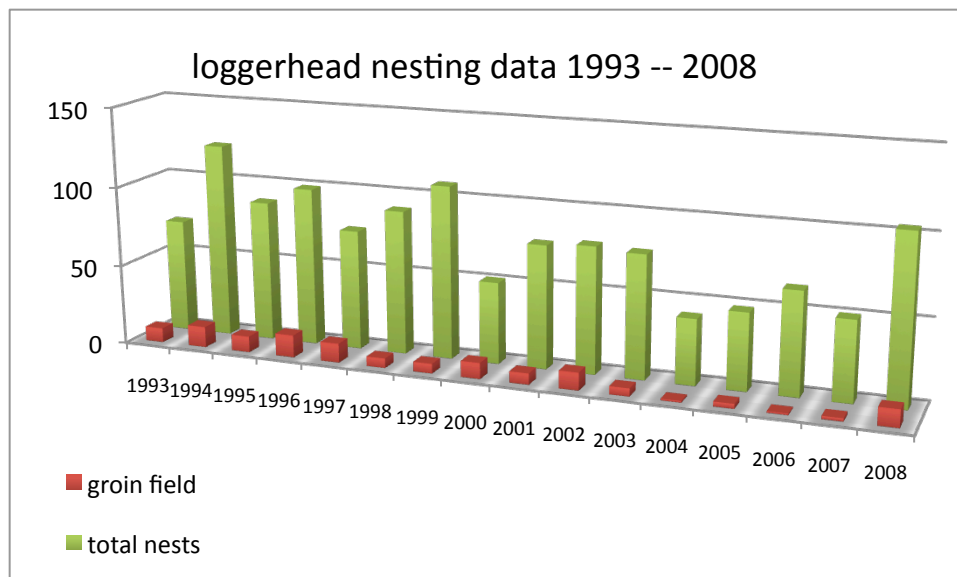
Caspian Tern: Species of Special Concern

Brown Pelican: Significantly Rare

Sandwich Tern: Watch List  
Forster's Tern: Watch List

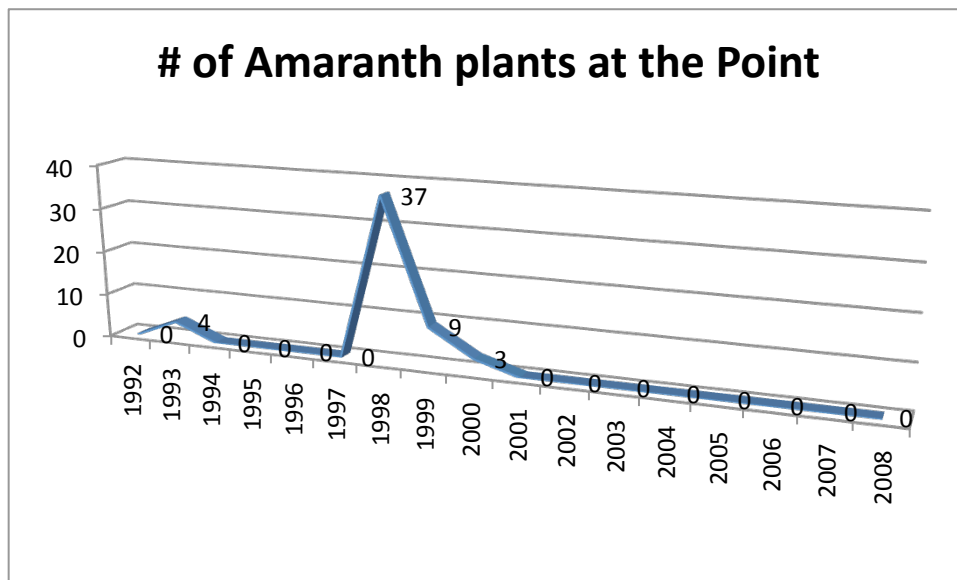
## SEA TURTLES

- Loggerhead and green sea turtles have both been documented nesting on Bald Head Island's beaches, including those that run east, south and west. The great majority of nests are laid by the federally threatened loggerhead sea turtle, with a handful of nests laid by the federally endangered green sea turtle. Ocean beaches in the Cape Fear region have the highest density of nesting sea turtles in North Carolina; so maintaining the integrity of their nesting habitat is key to successfully managing sea turtles in the state. These species require a sufficient amount of sand between the high tide line and dune line in order to nest successfully. The more narrow the area between the high tide line and the dune line, the more likely their nests will become inundated with water during a storm event or a simple extreme high tide caused by a full moon or strong onshore winds. Nesting beaches appropriate for sea turtles are becoming more infrequent as development encroaches on what was once suitable habitat.
  - Preliminary analysis of sea turtle nesting data show an increased variance and decreased overall number of sea turtle nests throughout the island and along the groin field from 2000 to 2008 when compared to 1993 to 1999. T-test show significant differences in nesting in both categories between these dates  $P < 0.05$ . Although sea turtles have an internal 2-3 year nesting cycle, the data below seem to demonstrate that nesting improves after nourishment—although further analysis will be needed to support this contention. Additional analysis of nesting trends on the Point will be forthcoming.



## PLANTS:

- Seabeach amaranth, a federally endangered plant occurring on barrier island beaches, has been documented on the beaches of BHI in scattered locations. This plant is sporadic in its appearance but has been documented by Conservancy staff annually for the past 5 years. Seabeach amaranth's primary habitat "consists of overwash flats at accreting ends of islands and lower foredunes and upper strands of noneroding beaches. This species appears to need extensive areas of barrier island beaches and inlets functioning in a relatively natural and dynamic manner." (FWS: <http://www.fws.gov/nc-es/plant/seabamaranth.html>). It will often times occur with other mixed vegetation including sea rocket and dune spurge. Seabeach amaranth is also considered to be an effective sand binder, helping to build dunes (USFWS website, same as above).
  - Data collected by the Corps of Engineers indicates that Seabeach Amaranth was found on the "Point" until 2000. After the realignment no examples were noted. The survey was conducted in "Reach C from the area NW of the lighthouse around West Beach and South Beach to Sandpiper Trail."



- Seabeach Amaranth occurs in open sands where there is little or no competition from perennials. It is definitely much more prevalent as a colonizer of the upper beach and unvegetated sand flats above the high tide. Thus it has almost exactly the same habitat as sea rocket, piping plover nesting areas, and loggerhead turtle nesting areas. Intact dunes are highly beneficial in maintaining suitable habitat on a more constant and consistent manner for all these organisms.
  - Alan Weakley, Curator and Adjunct Asst. Professor, University NC Herbarium, NC Botanical Garden Department of Biology UNC-Chapel Hill.
- The erosion of at least 100' on the Point has likely removed a significant portion of the seed bank for this endangered species. The seed bank, seeds stored and protected underground, would have provided a source for new plants when and if conditions

improved on the Point. The level of erosion on the Point has made recolonization Seabeach amaranth unlikely without a restoration program.

## **BIRDS**

- **NESTING HABITATS**

- Least terns, piping plovers and Wilson's plovers all use similar beach habitat to lay their eggs. Nesting occurs above the high tide line but below the dune line in fairly open and un-vegetated habitat. Too much vegetation will actually deter the birds from nesting, as that vegetation will hide potential predators and the birds prefer to be in more exposed, open beach habitat. A sand/shell substrate is preferable for successful nesting. The birds lay their eggs in a small depression in the sand with the egg shell closely matching the color of the surrounding sand. This affords the birds protection against predators but also leaves them susceptible to being crushed by unknowing humans or dogs. As beach habitat is quickly being swallowed up by development and a rapid increase in human populations along the coast (53% of the United States' population lives in coastal counties), protection of essential nesting habitat for shorebirds is critical to their continued survival.

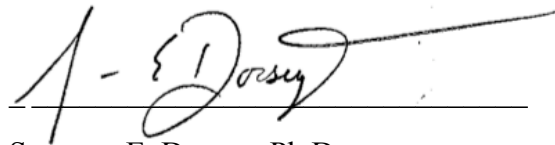
- **FORAGING HABITATS**

- Habitat such as that found on the Point are ideal for foraging and resting for dozens of species of birds. During low tide, large sand flats are exposed which provide excellent areas for foraging for a number of shorebird species. Worms, crustaceans and other invertebrates are all present below the sand and birds take advantage of this habitat, feeding for hours each day. Areas from the high tide line to the vegetation line are equally important, providing a resting spot for birds, whether they are year-round residents or migratory species in desperate need of an area to rest and re-fuel. Some of the species forage in the water just offshore (all of the tern species and brown pelican), searching for small bait fish. In between foraging trips, they will most often rest on the beach. The tern species use the sandy beach area for mating purposes as well during the months of April and May. Many of the species documented using the south/west point of the beach are here for the majority of the year (April-October) and in some cases, are year-round residents. Several are also colonial birds, preferring to be in large flocks, therefore requiring large expanses of beach to accommodate the birds.
- The Point on Bald Head Island is important foraging and resting habitat for several bird species listed in the state of North Carolina as Threatened, Species of Special Concern, Significantly Rare or Watch List. One of these species is also listed as Federally Threatened.
  - Threatened in NC:

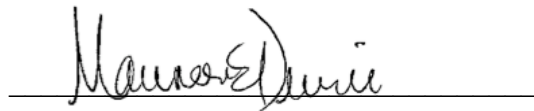
- Piping Plover (Federally Threatened as well)
- Species of Special Concern in NC:
  - American Oystercatcher – upgraded from Significantly Rare in 2006 to Species of Special Concern in 2008
  - Wilson’s Plover – upgraded from Significantly Rare in 2006 to Species of Special Concern in 2008
  - Common Tern
  - Least Tern
- Significantly Rare in NC:
  - Caspian Tern
  - Brown Pelican
- Watch List:
  - Sandwich Tern (W2 & W5)
  - Forster’s Tern (W2)

W2= Species rare to uncommon

W5 = Species with increasing amount of threats to its habitat



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