

Beach Driving and Sea Turtles

U.S. Fish and Wildlife Service



Sea Turtles Nesting in the SE U.S.



Loggerhead
(Caretta caretta)
Status: Threatened



Green
(Chelonia mydas)
Status: Threatened



Leatherback
(Dermochelys coriacea)
Status: Endangered



Hawksbill
(Eretmochelys imbricata)
Status: Endangered



Kemp's Ridley
(Lepidochelys kempii)
Status: Endangered



Sea Turtles have complex life cycles

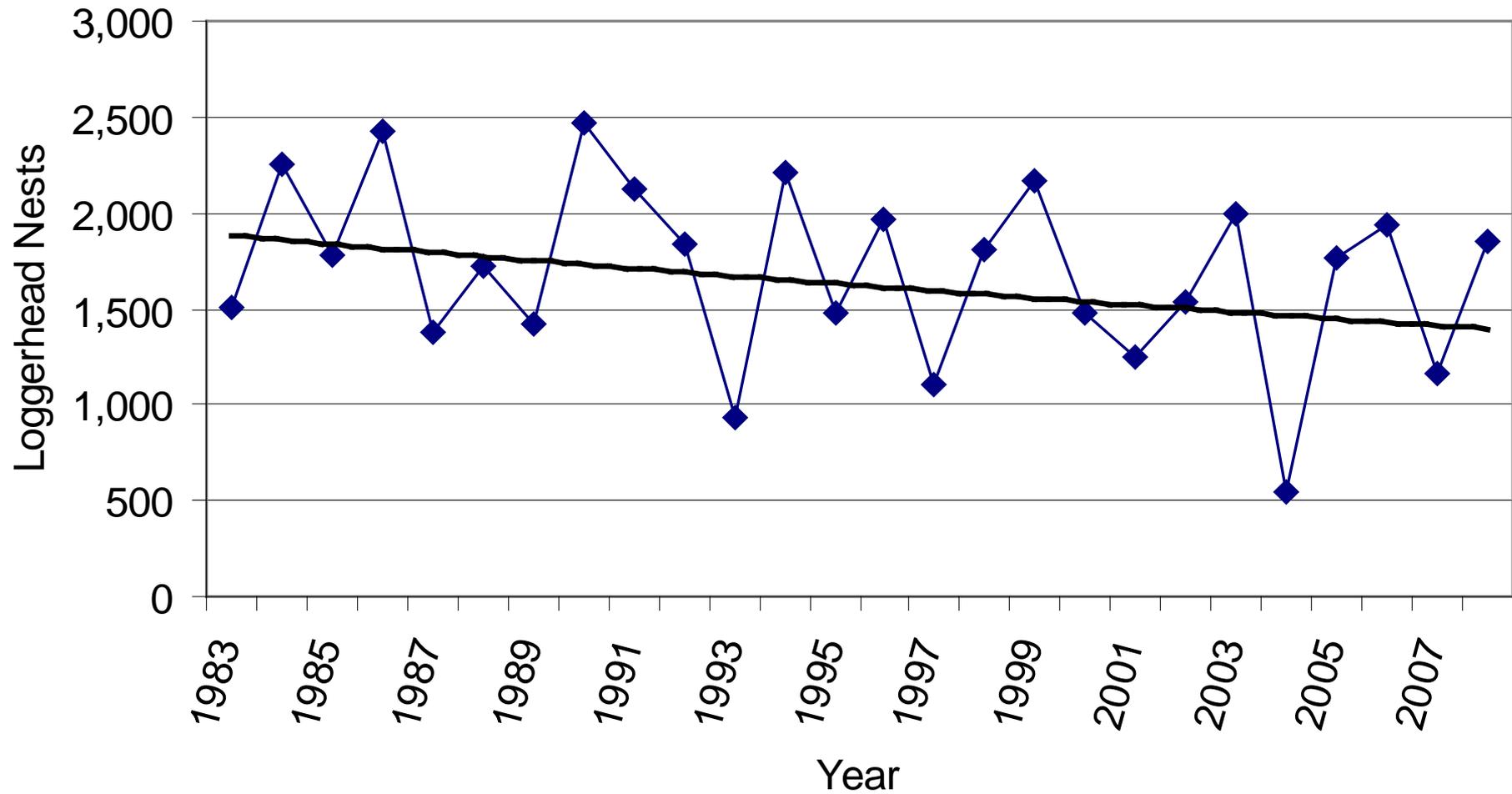


Northern Recovery Unit

Georgia - South Carolina - North Carolina

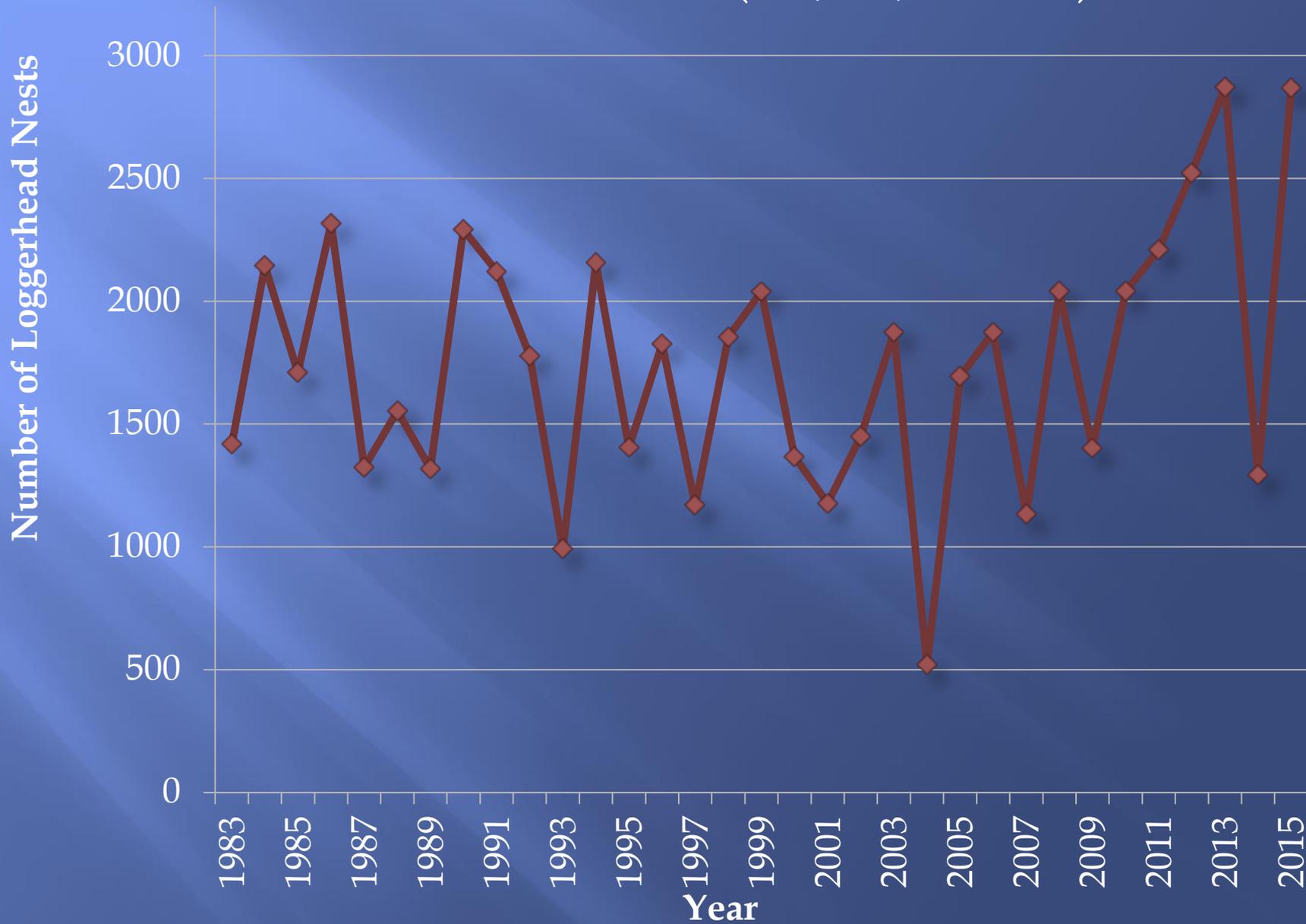


Loggerhead Northern Recovery Unit Population Trend





Northern Recovery Unit Loggerhead Nest Counts on Index Beaches (NC, SC, and GA)





Beach Driving and Sea Turtles



POTENTIAL IMPACTS

▣ Direct

- Collisions: Adults, Hatchlings, and Live Stranded Turtles
- Impacts to Sea Turtle Nests
- Hatchling Rut Encounters

▣ Indirect

- Changes in Physical Beach Conditions
- Contaminants



Direct Impacts

- Deterrence to Nesting
- Decreased Nesting Success
- Collisions with Turtles
- Crushing of Nests
- Entrapment in Tire Ruts
- Disorientation by Vehicle Lights

Deterrence to Nesting





Aborted Nesting Attempts





Collisions





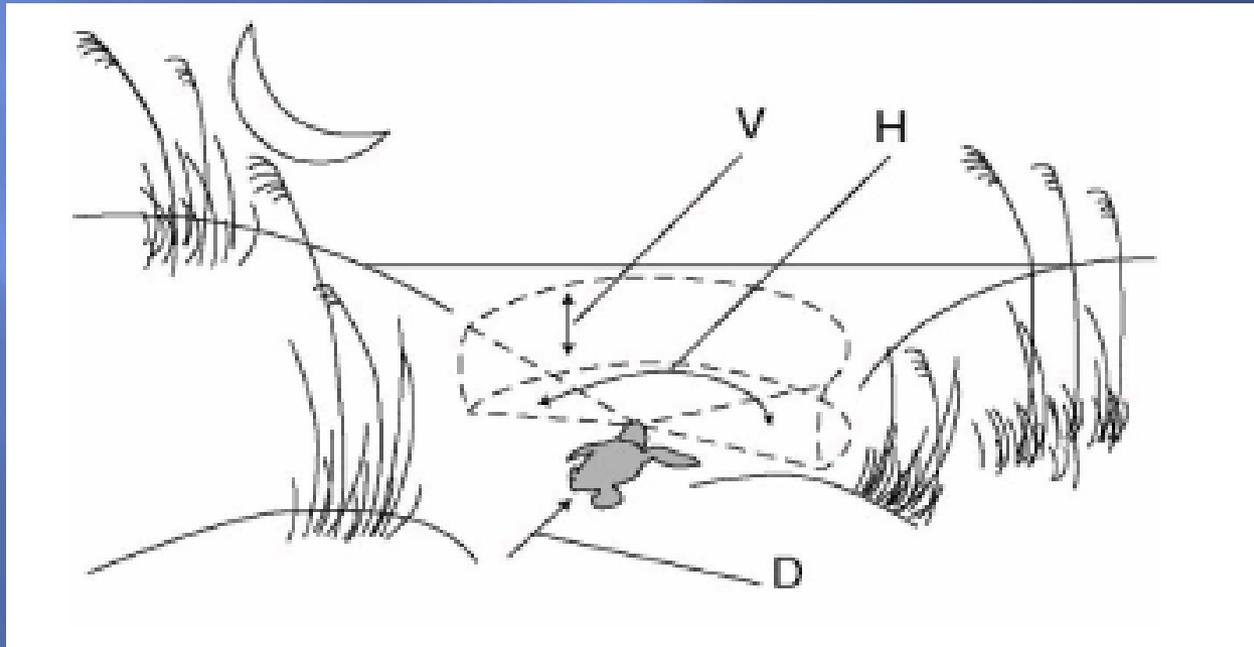
Misorientation in Ruts



Effects on Hatchlings

Hatchlings rely on multiple visual cues to find the water

- ▣ TOWARD bright open areas/horizons
- ▣ AWAY from dark silhouettes i.e. dunes and vegetation.



Hatchling Disorientations

Hatchlings have a limited energy reserve for their “frenzy” period.

Any delay on the beach results in increased dehydration, exhaustion, predation and death.



Effects on Nesting Females

- Lighting can deter females from emerging from the water to nest
- Lighting can interfere with females finding their way back to the water
- Disoriented females may be harmed or even killed





Indirect Impacts

- Compaction
- Contaminants
- Dune vegetation

Compaction





Contaminants



Impacts to Dune Vegetation





Solutions

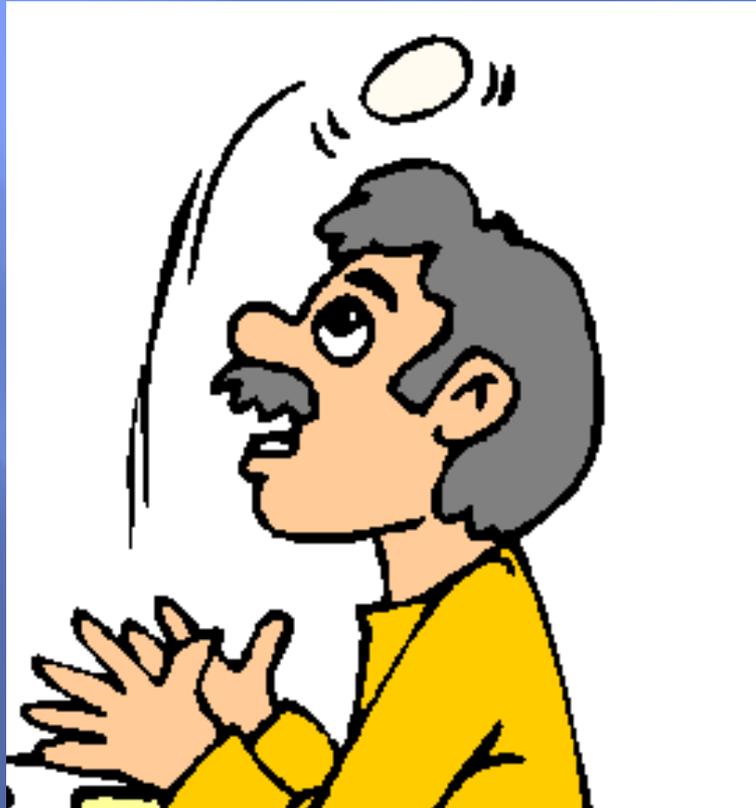


Why Don't We Relocate Sea Turtle Nests?



Nest Relocation: Handling Mortality

Handling Mortality





Nest Relocation:

Changes to the Incubation Environment

- Incubation Temperature
- Gas Exchange
- Moisture Content
- Hatching Success
- Hatchling Emergence



Changes to Incubation Environment

- Temperature
- Gas Exchange
- Moisture Content



Changes to Incubation Environment

- Temperature
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Changes to Incubation Environment

- Temperature
- Gas Exchange
- Moisture Content



Moisture Content Influences:

- Nitrogen excretion
- Mobilization of calcium
- Mobilization of yolk nutrients
- Hatchling size
- Energy reserves in the yolk at hatching
- Locomotory ability of hatchlings



Impacts at Species Level

- ▣ Nest placement is critical to maintaining sex ratios
- ▣ Overwashed nests- hatchlings more robust
- ▣ Maintaining a healthy gene pool
- ▣ FWS and NMFS- emphasis on management that ensures healthy populations of sea turtles and a less manipulative approach



What's Been Done to Address Beach Driving and Sea Turtle Interactions Elsewhere?



Areas where Beach Driving Occurs

- NE FL - Nassau, Duval, St. Johns, & Volusia Cos.
- NW FL - Gulf Co.
- GA - Cumberland, Little Cumberland, and Sapelo Islands
- NC - Fort Fisher State Recreation Area, Carolina Beach, Freeman Park, Onslow Beach, Emerald Isle, Indian Beach/Salter Path, Pine Knoll Shores, Atlantic Beach, Cape Lookout National Seashore, Cape Hatteras National Seashore, Nag's Head, Kill Devil Hills, Town of Duck, and Currituck Banks
- VA - Chincoteague NWR and Wallops Island



THE ATTRACTION CONTINUES





Minimization

Separate Turtles from Vehicles

- Vehicle Access Times
- Beach Management Areas
- Conservation Measures



Separate Turtles from Vehicles

- *Vehicle Access Times*
- Beach Management Areas



Public Access Hours

November 16–April 30: ORV routes are open to night driving 24 hrs a day;

May 1–September 14: ORV routes on ocean beaches are closed to ORVs from 9 pm to 7 am to protect nesting sea turtles; and

September 15–November 15: ORV routes will reopen when there are no sea turtle nests remaining on that route or portion of route



Separate Turtles from Vehicles

- Vehicle Access Times
- Beach Management Areas



Separate Turtles from Vehicles

- Vehicle Access Times
- Beach Management Areas
 - Seasonal and year-round vehicle-free areas



MINIMIZATION

- Mark and Protect All Nests
- Conduct Rut Removal Program
- Train Beach Personnel Annually
- Conduct a Public Education Program

