

**From:** [Michelle Baker](#)  
**To:** [Britta Muiznieks](#)  
**Subject:** Fw: First Draft  
**Date:** 12/01/2008 01:22 PM  
**Attachments:** [Adaptive Mgt Proposal Sea Turtles.11.26.08.doc](#)

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Britta,

Here are my comments for the adaptave management draft.

Michelle

-----Forwarded by Michelle Baker/CAHA/NPS on 12/01/2008 01:20PM  
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To: Britta Muiznieks/CAHA/NPS@NPS  
From: Mike Murray/CAHA/NPS  
Date: 11/26/2008 05:43PM  
cc: Thayer Broilli/CAHA/NPS@NPS, Michelle Baker/CAHA/NPS@NPS  
Subject: First Draft

Britta,

Attached is a first draft of an Adaptive Management proposal for sea turtle management. To the extent possible I tried to incorporate what we had already identified we would do for sea turtle management in our alternatives (e.g., monitoring frequency, data collection, management actions). I looked at the adaptive management recommendations in the USGS sea turtles protocols (frankly, pretty complicated and labor intensive), then tried to craft something simpler and more manageable. I have no expertise with adaptive management. This draft is entirely a copy-and-paste job, cobbled together (hopefully) by common sense.

Would you and Michelle please review and provide consolidated comments early next week. Particularly focus on the YELLOW highlighted sections, which need your input, but feel free to comment on anything. Feel free to make major changes if you think it will make it more effective or practical to implement.

I'd like your comments. especially on the resources management portions of the document, before I distribute it a little more broadly within NPS (e.g., LE rangers, Darrell, Sandy Hamilton, maybe Tim Pinion). I expect that the rangers will have concerns about the people management part of it, so I want their input on how to make

that part workable. After the second round of NPS input, I'll incorporate comments before sharing a "draft proposal" with the Natural Resource subcommittee.

Thanks,

Mike Murray

Superintendent

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**11/26/08**

## Adaptive Management Proposal for Sea Turtles

### Baseline Management

#### Monitoring:

- Daily sea turtle patrols 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.
- 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.
- 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.
- Once a light filter fence is installed, monitor nests daily for signs of hatchling emergence.

#### Management:

- November 16 - April 30: Designated ORV routes and areas open to ORV use 24 hours a day.
- May 1 – September 15: All potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) will be closed to non-essential ORV use from ½ hour after sunset until (time TBD) after turtle patrol has checked the beach in the morning for crawls, nests, or hatchling emergence. Note: NPS will prioritize and schedule patrols first to key sections of beach open to ORV use to the extent practicable.
- Nest closures and buffers will be established as described in the CAHA ORV Resource Protection Tables, dated 11/15/08 (see page 9).
- Pedestrian access to the ocean beaches after dark is allowed at any location(s) adjacent to the villages or established parking, subject to site specific resource closures as needed for bird breeding activity or sea turtle nests.
- ORV Access for Night Fishing: The following areas are designated as open to ORV access for night fishing from May 1 to September 15, , subject to site specific resource closures as needed for bird breeding activity or sea turtle nests; and subject to the terms and conditions of a permit (see next section) and to the overnight vehicle limit indicated in (parentheses):
  - Bodie Island Spit (vehicle limit: 15)
  - Cape Point (vehicle limit: 30)

**Comment [NPS1]:** We already do this by starting at Cape Point, Bodie Spit, and S. Ocracoke. 27-34, Ramp 55 south, and North Ocracoke are the most susceptible to having missed nests due to ORVs.

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- Hatteras Inlet (vehicle limit: 15)
- South Point Ocracoke (vehicle limit: 15)
- Night Fishing Permits: Between May 1 and September 15, the above areas will be accessible by ORV only during daylight hours, subject to resource closures for bird breeding activity or turtle nests, and subject to terms and conditions of a special use permit, which may include the following:
  - Permitted vehicles must remain parked within the designated area with headlights off
  - Artificial lighting will be restricted (TBD)
  - Night fishing permits will be issued one night at a time and must be obtained in person at a designated NPS permit issuing station (locations TBD)
  - Each vehicle must have a functional portable toilet
  - NPS may impose a limit on the number of nights in a row an individual may obtain a night fishing permit, if it appears that there is routinely more demand for permits than the vehicle limit allows
- September 16 – November 15: Night driving will remain restricted to daylight hours on routes and areas that have unhatched turtle nests (within \_\_\_ meters of an unhatched nest?). Night driving, subject to terms and conditions of a permit, will be allowed to the extent practicable on ocean beaches that do not have unhatched turtle nests as of September 15. Prior to September 16 of each year, NPS to publish a list of areas and routes that will be open to night driving as of September 16.
- Resources Management staff will examine all sea turtle 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. Designated ORV routes and areas will be re-opened to night driving as soon as practical after nests have been excavated, provided no other unhatched nests remain in the area.

**Comment [NPS2]:** I really, really have concerns about the ability for LE to manage this. If they can not enforce it, we should NOT do this. Otherwise this is all on us.

**Comment [NPS3]:** There is not a good measure for this. I do not feel comfortable with saying that night driving is allowed at location A but not at location B unless there is a hard closure to delineate the two (Yay! More signs!)

### **Adaptive Management**

**Objective 1:** To determine the effect of management of human recreation on nesting rate, hatching success, sea-finding by hatchlings (prevalence of misorientation and trapping by obstacles), and proportion of false crawls.

Proposal: Identify the “management category” of each ocean beach segment as one of the following:

1. ORV areas (ORV/pedestrian segments, open to ORV use during daylight hours)
2. Non-ORV areas (pedestrian only segments)
3. Resource Areas that are closed from (date) to (date) to all ORV and pedestrian use (control segments)
4. Other resource closures (i.e., a category # 1 or # 2 segment that is closed during the season for resource protection and then it become a category # 3 segment at that time)

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5. Experimental segments within 500 (1000?) meters of the designated night fishing ORV access areas

Monitor and Document the following information:

1. -Turtle species  
 -Nest vs. false crawl  
 -Location (physical description and GPS location)  
 -Management category (ORV, Non-ORV, Resource Area, other Resource Closures, or Experimental) of the nest site at the time it was laid  
 -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 resource closure violations, predation, hatchling misorientation, or trapping by obstacles  
 -Information regarding any post hatching nest excavation and analysis
2. 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.

Evaluate:

1. Compare the number and proportion of nests, false crawls, undetected nests, hatchling misorientation incidents, predation incidents, and hatchling emergence rate that occur in the respective management categories. Document in annual sea turtle report.
2. Prepare trend analysis every 3 (5?) years and include in annual sea turtle report for the respective year and review results with USFWS and NCWRC.
3. If a significant effect of recreation in an Experimental segment is found, recreational restrictions can be varied systematically to distinguish the effects of type and level of activity. On the other hand, if no effect is detected, then the next round of experiments could entail allowing limited night-time ORV travel from the nearest access ramp to selected experimental segment(s), provided there is no sea turtle nesting history along the access route to the respective Experimental segment during the previous three year period. Any change in management would require consultation with USFWS and NCWRC, prior to implementation.

**Comment [NPS4]:** Umm...that is not possible

**Comment [NPS5]:** We are never going to be able to determine how many

**Comment [NPS6]:** This could be influenced by too many things to relate it back to nighttime ORV use (overwash)

**Objective 2:** To determine the effect of artificial light management on nesting rate and hatchling orientation.

Proposal: Document false crawls and hatchling misorientation incidents within 500 m and 1000 m of artificial light sources on human structures in annual report(s). If turtle-friendly lighting regulations or initiatives are enacted, compare proportion of false crawls and hatchling misorientation incidents within 500 m and 1000 m of same structures before and after turtle-friendly lighting is implemented.

**Comment [NPS7]:** These are made up numbers. Lighting effects can go far further than this.