

1268

Cobb, Ashley

From: Fox, Lori
Sent: Tuesday, April 29, 2008 12:26 AM
To: Cobb, Ashley
Subject: FW: ORV EIS Draft Alternatives Telecon - Followup re Night Closures Related to Turtles

Please print for CAHA admin record.

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From: Timothy_Pinion@nps.gov [mailto:Timothy_Pinion@nps.gov]
Sent: Monday, April 21, 2008 12:14 PM
To: Thayer_Broili@nps.gov
Cc: Britta_Muiznieks@nps.gov; Darrell_Echols@nps.gov; Otto, Dana; Wetmore, Doug; Fox, Lori; Michelle_Baker@nps.gov; Mike_Murray@nps.gov; Sandra_Hamilton@nps.gov
Subject: Re: ORV EIS Draft Alternatives Telecon - Followup re Night Closures Related to Turtles

Here are a couple of references that may be of some use (I realize that the formats are different -- the result of quick cutting and pasting). Hatchling emergence from the nest appears to be related to thermal cues; as the sand at the top of the nest cools, the turtles will emerge. This typically happens in the evening hours before midnight, but may also occur in the middle of the day when rain has cooled the sand. Research from NC shows peak emergence activity around 8:00 pm.

Temporal Pattern of Nocturnal Emergence of Loggerhead Turtle Hatchlings from Natural Nests

Author(s): Blair E. Witherington, Karen A. Bjorndal, Cathleen M. McCabe

Source: Copeia, Vol. 1990, No. 4, (Dec. 31, 1990), pp. 1165-1168

... We recorded 157 hatchling emergence events between 1930-0630 h. The timing of hatchling emergence events (Fig. 1) was not significantly different from a normal distribution (Kolmogorov-Smirnov goodness of fit, $D = 0.056$, Pimentel and Smith, 1986) with peak activity between 2300-2400 h. **Hatchling emergence times on a North Carolina beach (n = 51) had a distribution similar to that reported here (Fig. 1), but shifted to earlier in the evening with peak activity at 2000 h (Neville et al., 1988).** This shift may be a result of differences in temperature patterns, but appropriate data are not available to test this hypothesis. Loggerhead hatchlings from 19 clutches buried in individual boxes and maintained in a house trailer on Merritt Island, Florida, emerged between 1900-0200 h (Demmer, 1981).

NEVILLE, A., W. D. WEBSTER, J. F. GOUVEIA, E. L. HENDRICKS, I. HENDRICKS, G. MARVIN AND W. H. MARVIN. 1988. The effects of nest temperature on hatchling emergence in the loggerhead sea turtle (*Caretta caretta*), p. 71-73. In: Proceedings of the eighth annual conference on sea turtle biology and conservation. B. A. Schroeder (comp.). 24-26 Feb., 1988, Fort Fisher, North Carolina, NOAA Technical Memorandum NMFS-SEFC-214, Miami, Florida. (found here: <http://www.nmfs.noaa.gov/pr/pdfs/species/turtlesymposium1988.pdf>)

--Tim

4/29/2008

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04/16/2008 01:12 PM EDT

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This is followup to the discussion of rationale for timing of night closures to minimize impacts. The reference I recalled is contained in the Loggerhead Turtle Recovery Plan, page 29 as follows:

" 2143. Many lighting ordinance requirements do not become effective until 11 P.M., whereas over 30 percent of hatchling emergence occurs prior to this time (Witherington et al., 1990)."

Note that my recollection was a timing issue for impact on false crawls, but in fact it was hatchlings. Michelle Baker of our Buxton staff may have additional info. and can refer you to Dr. Mathew Godfrey, the turtle guy with N.C. Wildlife Resources Commission, who is a loggerhead expert. You may also want to contact Tim Pinion, NPS SER Wildlife Biologist to see if he has any info.

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