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## GREAT HORNED OWL PREDATION OF ATLANTIC LOGGERHEAD TURTLE HATCHLINGS

BRIAN TOLAND

*Florida Game and Fresh Water Fish Commission,  
Office of Environmental Services,  
110 43rd Avenue, Vero Beach, Florida 32968*

The Atlantic loggerhead turtle (*Caretta caretta caretta*) is the most abundant of the three species of endangered or threatened marine turtles that regularly nest in Florida (Ehrhart and Witherington 1987, Dodd 1988). The most extensive nesting by this species in the Western Hemisphere occurs along the Atlantic coast between Cape Canaveral and Juniter Inlet. Along this stretch of coast, sand compaction from motorized beach sweeping machinery often has an adverse impact on the reproductive success of loggerhead turtle nests (Conley and Hoffman 1986, Ehrhart and Witherington 1987, Iverson and Etchberger 1989).

To minimize compaction-related damage to loggerhead turtle nests from beach-sweeping machinery on 3.5 mi (2.2 km) of city beaches of Vero Beach in Indian River County, the state required the relocation of egg clutches out of the path of the machinery. Since 1987, relocated nests have been placed either in a chain-link hatchery or concentrated near the dune line along an approximately 400 m stretch of South Beach with intact sand dunes. The 100-200 nests relocated to the hatchery each year were, for the most part, protected from predators. However, the response by nest predators to concentrating 50-100 nests into the 400 m section of dune line was undocumented. In June 1989, I began monitoring this section of beach for signs of predation on loggerhead eggs and/or hatchlings via morning, evening, and nocturnal pedestrian surveys. In this note I report predation by Great Horned Owls (*Bubo virginianus*) on post-emergent loggerhead turtle hatchlings concentrated during the nest relocation project in Vero Beach, Florida.

On 2 August 1989, at 1950 h, I observed an adult Great Horned Owl perched 4 m high in a dead cabbage palm (*Sabal palmetto*) on the dune about 25 m from the marine turtle nest relocation hatchery. At least 1 nest emergence had occurred in the hatchery and approximately 75 hatchlings were moving around the hatchery cage perimeter prior to their scheduled release at nightfall. The owl intently observed the crawling loggerhead hatchlings, intermittantly bobbing and swaying its head. About 4 min later the owl flew down and landed on the wire roof of the turtle hatchery where it continued to peer down at the hatchlings for about 45 s. The bird then flew back to its perch in the cabbage palm snag for another 10 min before it flew north up the dune line. On 12 August, at 2200 h, I used a flashlight to check relocated turtle nests along the base of the dunes. At a nest site about 150 m north of the turtle hatchery, I illuminated an adult Great Horned Owl standing in the sand as loggerhead hatchlings emerged. The owl snatched a hatchling with its foot and transferred it to its beak, then quickly flew to an Australian pine (*Casuarina equisetifolia*) snag on the dune about 25 m away. I periodically spotlighted the owl as it consumed the hatchling during the subsequent 7 min.

On 20 August, at 2115 h, I discovered an adult Great Horned Owl perched in the aforementioned Australian pine snag, eating a loggerhead turtle hatchling. After the owl left, I inspected the substrate around the base of the snag for prey remains and/or pellets. A total of 4 hatchling carapaces and 9 pellets was collected. Pellets contained mainly rodent remains, including cotton rat (*Sigmodon hispidus*) and southeastern beach mouse (*Peromyscus polionotus niveiventris*), as well as 2 anterior skull fragments and 3 intact skulls of loggerhead turtle hatchlings. These observations suggest that Great Horned Owls

dissect hatchling soft parts from the shell and do not swallow whole hatchlings as they do with similar-sized rodent prey.

During the summer of 1990 a pair of Great Horned Owls was observed preying on post-emergent loggerhead hatchlings at least 12 times. The owls hunted from several cabbage palm snag perches adjacent to the relocated loggerhead turtle nests. During hatchling emergence an owl would make short (less than 50 m) flights down to the dune line or beach to make easy captures of hatchlings.

Great Horned Owls have a diverse diet reflecting locally available food resources (Craighead and Craighead 1956, Rusch et al. 1972). The diet of this euryphagus owl may vary from year to year and/or seasonally (Korschgen and Stuart 1972, Toland 1985). Reported prey items of Great Horned Owls range in size from 1 to 3000 g (Johnsgard 1988), including insects and scorpions, Canada Geese (*Branta canadensis*), grouse, and herons among birds, and woodchucks (*Marmota monax*), striped skunks (*Mephitis mephitis*), and domestic cats (*Felis catus*) among mammals (Bent 1938, Rusch et al. 1972, Marti 1974, Toland 1985). Most studies of Great Horned Owl food habits report relatively low percentages of reptilian prey (< 2.0% occurrence; Korschgen and Stuart 1972, Jaksic and Marti 1984, Toland 1985). This is the first report of Great Horned Owls preying on Atlantic loggerhead turtles.

The localized, opportunistic predation of loggerhead hatchlings by Great Horned Owls may only minimally impact the region's nesting marine turtle population. However, my observations revealed that a variety of potentially important predators were attracted to the linear nest relocation site, including bobcat (*Felis rufus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), gray fox (*Urocyon cinereoargenteus*), domestic dog (*Canis familiaris*), domestic cat (*Felis catus*), ghost crab (*Ocypode quadrata*), and fire ants (*Solenopsis* sp.). An array of animals prey upon Atlantic loggerhead turtle eggs and hatchlings prior to their entering the ocean (Dodd 1988). Dodd (1988) summarized terrestrial species preying on loggerhead nests throughout the turtle's range, including 7 crabs, 1 ant, 2 lizards, 10 mammals, and 14 birds (mainly corvids and larid gulls). In Florida the major predator of loggerhead eggs is the raccoon which may be responsible for over 90% nest mortality on certain beaches (Ehrhart 1979). Predation on eggs by ghost crabs is also common in Florida, and the crustacean may be the most important predator of post-emergence hatchlings in some areas (Ehrhart and Witherington 1987). Loggerhead hatchling mortality is also inflicted by Fish Crows (*Corvus ossifragus*), Laughing Gulls (*Larus atricilla*), Ring-billed Gulls (*L. delawarensis*), domestic dogs, and fire ants (Ehrhart and Witherington 1987, Dodd 1988, pers. observ.).

I estimated that at least 25% of the relocated, concentrated loggerhead nests were depredated during either the egg or hatchling stages. The cumulative impacts of predation on loggerhead turtle nests relocated to artificially high densities along linear transects could be of local significance on certain nesting beaches, and should be discouraged by permitting agencies. Limiting municipal beach sweeping programs to the use of hand rakes would eliminate the need to relocate sea turtle nests, while facilitating removal of flotsam.

The Vero Beach office of the U.S. Fish and Wildlife Service provided marine turtle nest relocation data. The manuscript benefited from the review by P. Merritt and an anonymous referee.

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## REPORT

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**FOS Records Committee Report.**—This is the eighth report of the Florida Ornithological Society Records Committee, covering 1990. Table 1 contains 33 records of which 26 were accepted and 7 were not accepted. Committee members are Jocelyn Lee Baker (secretary), Wally George, Larry Hopkins, William Robertson and Henry Stevenson.

Sightings of rare birds in Florida should be submitted to the secretary of the Records Committee. All records published thus far have been placed in a permanent file in the FOS Archives at the Florida Museum of Natural History in Gainesville where they are available for research. Documentation for accepted birds listed in this report was submitted by: Barbara Center, Linda Douglas, Robert Duncan, Bernardine English, Wally George, Dave Goodwin, Wayne Hoffman, Howard P. Langridge, Bruce Neville, Steve Nord, Joseph Ondrejko, Thomas Palmer, Harry Robinson, Robert Sargent, P. William Smith and L. W. Timmer.—**Jocelyn Lee Baker**, Secretary, 851 North Surf Road, Apartment #302, Hollywood, Florida 33019.

## ERRATA

In the FOS Records Committee Report (1991, Fla. Field Nat. 19(2): 56-57), record No. 88-138, Allen's Hummingbird, the date observed "27 December 88" should read "27-28 February 88." In the FOS Field Observation Committee Report (1991, Fla. Field Nat. 19(3): 90-95), the title "Winter Report: March-May 1991" should read "Winter Report: December-February 1991."