

## **Assessment of Coastal Habitat and Listed Species along Archie Carr National Wildlife Refuge**

**Margaret M. Lamont**<sup>1</sup>, Raymond R. Carthy<sup>1</sup>, Jennifer Solis<sup>1</sup>, and Paul Tritaik<sup>2</sup>

<sup>1</sup> Florida Cooperative Fish and Wildlife Research Unit, University of Florida, Gainesville, FL

<sup>2</sup> Archie Carr National Wildlife Refuge, Vero Beach, FL

It has been suggested that warming of the world's oceans will result in sea level rise which will increase coastal erosion. Coastal communities employ many methods to reverse, slow or stop beach erosion including sea walls, revetments, nourishment and armoring. Coastal species, such as sea turtles, must adjust not only to increased erosion but also to man-made changes that may alter the dynamics of the beach system. Sea turtles spend most of their life at sea however critical life-history stages, such as nesting and hatching, occur on land. Beach characteristics have been shown to influence nest placement within the beach. When optimal, these factors may allow turtles to expend less energy locating nesting sites that will provide the greatest reproductive success. Along dynamic beaches, these cues are constantly changing, which may reduce a turtle's ability to identify high quality nesting sites.

To determine how erosion, and the human activities that follow, have affected coastal species along Archie Carr National Wildlife Refuge (ACNWR), we defined the following goals: 1. assess dynamics of selected portions of ACNWR including winds, longshore drift, and changes to beach profiles, 2. compare current and historical sea turtle nesting patterns, 3. assess success of turtle nests deposited along selected portions of ACNWR. This is an on-going study. Data were collected in 2006 and 2007 and will continue to be collected in 2008 before final analyses will be available. Here, we present preliminary results of this research.

Surveys for nesting sea turtles were conducted along 8-km of beach in ACNWR in 2006 and 2007. Historically, the study area has been divided into 8 zones of uneven length and we continued to use those zones for cohesiveness throughout this study. Sea turtle nesting data from 1989 through 2005 was gathered from the Florida Fish and Wildlife Conservation Commission. In 2006, 1,295 sea turtle nests were recorded within our study area, and in 2007, 1,285 nests were recorded. These numbers represent the third and fourth lowest numbers of nests deposited along this 8-km stretch of beach since 1989. Average number of nests from 2006-2007 was lower in every zone (except zone 6 where numbers were equal) as compared to historic numbers. In 2006 and 2007 there was a mean 1,253 false crawls, and from 1989 to 2005 there was a mean 1,605 false crawls. The percentage of false crawls was similar in 2006 (50%) and 2007 (48%) to percentages from 1989 to 2005. We are currently analyzing hatching success to compare success in 2006 and 2007 to historical success numbers. In addition, we will enter all nest locations from 1989 through 2008 into the GIS to spatially analyze nesting data. In light of the increasing development of coastal areas and reduction of available habitat for coastal species, this research can provide important information for the proper management of remaining habitat.

Contact Information: Margaret Lamont, Florida Cooperative Fish and Wildlife Research Unit, PO Box 110485, University of Florida, Gainesville, FL 32611, USA; Phone: 352-392-1861; Fax: 352-846-0841; E-mail: [mmlamont@mindspring.com](mailto:mmlamont@mindspring.com)