Juvenile Green Turtle Tagged in Florida Recorded at Tortuguero, Costa Rica

Sebastian Troëng1, Robert Wershoven2 & Emma Harrison1

1Caribbean Conservation Corporation, Apdo. Postal 246-2050, San Pedro, Costa Rica (E-mail: sebastian@cccturtle.org)
2Audubon Society of the Everglades, PO Box 16914, West Palm Beach, FL 33416-6914, USA

The green turtle population nesting at Tortuguero, Costa Rica (10º35'N, 83º31'W) is the largest remaining nesting aggregation in the Atlantic Ocean and one of the largest green turtle (*Chelonia mydas*) rookeries worldwide (Seminoff in review). Only one of 1,110 tag returns from females tagged at Tortuguero and reported by Carr et al. (1978) was recaptured in-water in Florida, USA. However, genetic studies of green turtles indicate that juveniles from the Tortuguero population disperse throughout the Wider Caribbean, including into Florida waters (Bagley et al. 2000). This year, the connection between developmental habitats in Florida and the nesting beach in Tortuguero was confirmed by a green turtle tag return. On 30 September 2002, research assistants with the 2002 Green Turtle Program encountered a green turtle measuring 103.5 cm curved carapace length (CCLmin; Bolten 1999) at Tortuguero Beach. The turtle made a half-moon and was checked for tags and measured as it returned to the sea. The tag number NNY956 and return address of the tag identified it as a green turtle tagged on 14 July 1986 in Florida waters, 1.2 km offshore and 8 km north of Port Everglades Inlet in Fort Lauderdale, Florida (approx. 26º09'N 80º05'W) and measured 46cm in curved carapace length (CCLn-t; Bolten 1999). It had also been recaptured on 6 April 1988 very close to its original tagging site and measured 58.5cm CCL(n-t). Both Florida captures were made using scuba gear and at a water depth of ~4.5 m. The minimum water-traveled distance between the Florida capture site and Tortuguero is approx. 2,000 km.

Estimates of minimum growth rates between consecutive sightings for green turtle NNY956 are 7.2 cm CCLn-t/year and 3.1 cm CCLn-t/year between the first and second and second and third sightings respectively. These are within the range of estimates reported for green turtles studied in developmental habitats in the Bahamas (Bjorndal et al. 2000).

The developmental habitat where the green turtle was originally tagged is hard bottom with a mix of hard and soft corals and an abundance of red algae. Necropsies of stranded animals have indicated that their preferred food at this site is red algae of the genus Gelidiella sp. (Wershoven & Wershoven 1992). Unfortunately, a beach nourishment project has negatively impacted this site and an additional 11 ha of hard bottom green turtle developmental habitat may be destroyed if a recently approved renourishment project goes ahead as planned.

Acknowledgements: Research assistants Cory Matthews, Dagnia Nolasco and Ross Towers are acknowledged for their professional interception of green turtle NNY956,

without their notes this article would not have been possible. Peter Elizar is thanked for facilitating communication between the tagging projects.

Bagley, D.A., A.L. Bass, S.A. Johnson, L.M. Ehrhart & B.W. Bowen. 2000. Origins of juvenile green turtles from an East Central Florida developmental habitat as determined by mtDNA analysis. In: F.A. Abreu-Grobois, R. Briseño-Dueñas, R. Márquez & L. Sarti (compilers), Proceedings of the Eighteenth Annual Symposium on Sea Turtle Biology and Conservation. U.S. Dep. Commer. NOAA Tech. Memo. NMFS-SEFSC-436. pp 37.

Bjorndal, K.A., A.B. Bolten & M. Y. Chaloupka. 2000. Green turtle somatic growth model: evidence for density dependence. Ecological Applications 10: 269-282.

BOLTEN, A.B. 1999. Techniques for measuring sea turtles. In: K.L. Eckert, K.A. Bjorndal, F.A. Abreu-Grobois & M. Donnelly (editors), Research and Management Techniques for the Conservation of Sea Turtles. IUCN/SSC Marine Turtle Specialist Group Publication No. 4, pp. 110-114.

Carr, A., M.H. Carr, & A.B. Meylan. 1978. The ecology and migrations of sea turtles, 7. The west Caribbean green turtle colony. Bulletin of the American Museum of Natural History 162: 1-46.

Seminoff, J. In review. 2002 IUCN Red list global status assessment, green turtle Chelonia mydas. IUCN Marine Turtle Specialist Group Review. 93 pp.

Troëng, S. 1997. Report on the 1997 Green Turtle Program at Tortuguero, Costa Rica. Unpublished report to Caribbean Conservation Corporation. Gainesville, FL. 28 + xiii pp.

WERSHOVEN, R.W. & J.L. WERSHOVEN. 1992. Stomach content analysis of stranded juvenile and adult green turtles in Broward and Palm Beach Counties, Florida. In: M. Salmon & J. Wyneken (compilers), Proceedings of the Eleventh Annual Workshop on Sea Turtle Biology and Conservation. U.S. Dep. Commer. NOAA Tech. Memo. NMFS-SEFC-302. pp. 124-126