

*Chelonian Conservation and Biology*, 1999, 3(3):490–491  
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## Occurrence of the Furrowed Wood Turtle (*Rhinoclemmys areolata*) on Turneffe Atoll, Belize

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The furrowed wood turtle (*Rhinoclemmys areolata*) is found at low elevations from southern Veracruz through Tabasco and northern Chiapas, to Yucatán and Quintana Roo (including Cozumel Island) in Mexico, southward through Belize and eastern Guatemala, and possibly to eastern Honduras (Ernst and Barbour, 1989; Lee, 1996). In Belize, *R. areolata* occurs in a wide variety of habitats throughout the mainland but has not been reported from any offshore cays (islands) or atolls (Iverson, 1992; Lee, 1996). Records exist from Ambergris Cay, but this is actually a mainland extension of the Xcalak Peninsula of Mexico and as such does not represent true insular habitat (Hartshorn et

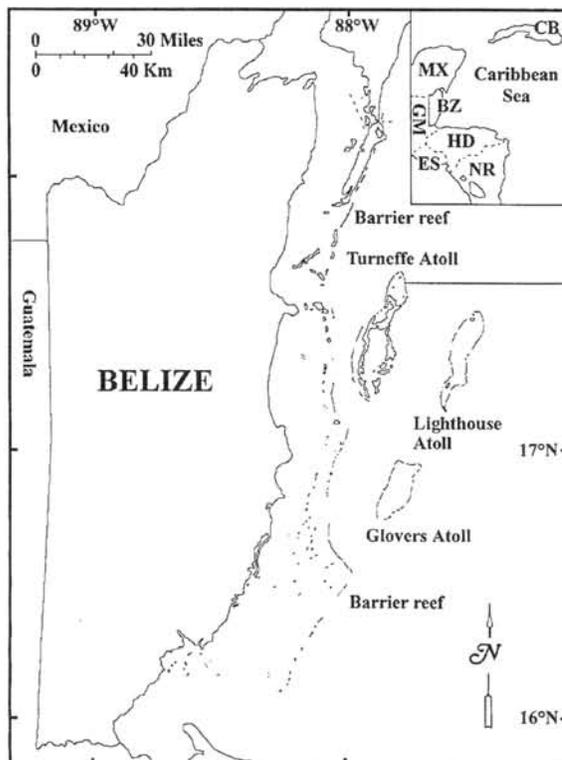
al., 1984). We herein report evidence for the occurrence of a population of *R. areolata* on Turneffe Atoll, an isolated group of islands approximately 35 km from the mainland of Belize (Fig. 1).

Turneffe Atoll is one of three atolls found outside of the Belize barrier reef and the only atoll containing significant terrestrial habitat (Stoddart, 1962). Turneffe Atoll is approximately 50 km long and 16 km wide and consists of a chain of cays partially enclosing a shallow lagoon. Most of the cays are low-lying and dominated by mangrove (*Rhizophora* and *Avicennia*) swamp, but a nearly continuous beach ridge extends along the eastern shoreline and supports relatively extensive tracts of cay littoral forest (*Metopium*, *Chrysobalanus*, *Cocoloba*, *Bursera*, and *Thrinax*). This is considered the most critically endangered habitat type in the coastal zone of Belize (McField et al., 1996). Fresh surface water is scarce on the atoll and may be completely absent during the annual dry season from February to mid-June.

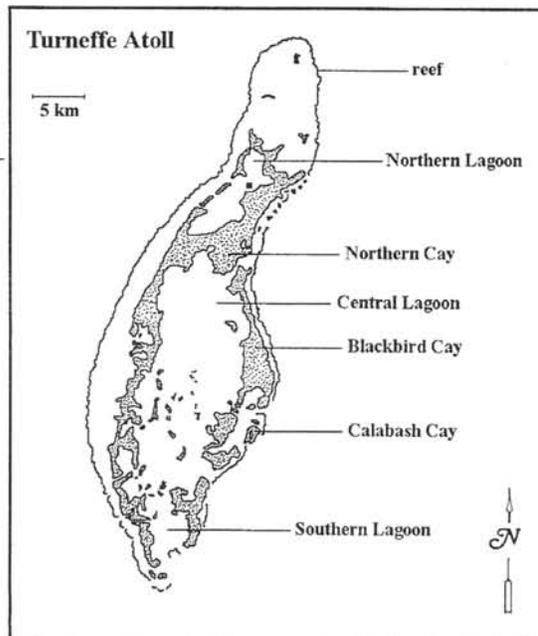
*Rhinoclemmys areolata* was previously reported from Turneffe Atoll by Zisman (1992) who stated that a "black-bellied turtle [local name for *R. areolata*] was found in mangrove at Turneffe Islands," but no further details were provided, and the disposition of this specimen is unknown.

In 1994, Matt McField (Dept. of Fisheries, Belize City, Belize, *pers. comm.*) reported encountering two adult *R. areolata* feeding on fallen fruit beneath a seagrape (*Cocoloba uvifera*) on Blackbird Cay, Turneffe Atoll. This cay contains the largest tract (> 200 ha) of intact cay littoral forest on the atoll.

Additionally, on 23 November 1996, the fresh remains of a juvenile *R. areolata* were flushed from the stomach of a subadult American crocodile (*Crocodylus acutus*; total length, 106 cm) captured in Northern Lagoon, Turneffe



**Figure 1.** Map of Turneffe Atoll, Belize. Square denotes the location in Northern Lagoon where an American crocodile containing *Rhinoclemmys areolata* remains was captured. Inset shows the location of Turneffe Atoll in relation to the mainland and Belize in relation to Central America.



Atoll, as part of a crocodile survey of the atoll (Platt and Thorbjarnarson, 1997). These remains consisted of a fore-foot and pieces of shell with attached skin and were deposited in the Campbell Museum, Clemson University, Clemson, SC, USA (CUSC 1382).

It is believed this turtle originated on Turneffe Atoll as the nearest known mainland populations of *R. areolata* are approximately 45 km from the capture site. Given the rapid digestion of flesh and bone in the crocodilian stomach (Davenport et al., 1990), the undigested state of the remains indicates the turtle had been consumed very recently. In addition, the probable population of *R. areolata* reported from Blackbird Cay is only ca. 10 km from the capture site.

These observations constitute a significant range extension for the species, and we suggest that *R. areolata*, albeit rare on the island, should henceforth be considered a member of the atoll's terrestrial fauna. While nothing is known concerning the ecology of this insular population, *R. areolata* on the mainland feed extensively on various fruits. On Turneffe Atoll, the turtles are probably dependent on littoral forest as a source of fruit for both food and water. Significantly, the Turneffe Atoll population may be threatened if clearance of littoral forest for the construction of tourist facilities and fishing camps continues unabated.

**Acknowledgments.**— Support for SGP, WBK, and JBT was provided by Wildlife Conservation Society. Support for TRR was provided by Lamanai Field Research Center, Indian Church, Belize. Coral Cay Conservation and the University College of Belize provided logistic assistance on Turneffe Atoll. Scientific research and collection permits were issued by Rafael Manzanero, Conservation Division, Forestry Department, Belmopan, Belize. Mark and Monique Howells, K. Mustafa Toure, Matt McField, Michael Sabal, John Scavo, Travis Crabtree, Stanlee Miller, and numerous Coral Cay Conservation Volunteers are thanked for their assistance. Julian C. Lee is thanked for reviewing a draft of this manuscript.

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Received: 25 March 1998

Reviewed: 8 September 1998

Revised and Accepted: 20 October 1998

*Chelonian Conservation and Biology*, 1999, 3(3):491-495  
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## Size Differences in Hind Limbs and Carapaces of Hatchling Green Turtles (*Chelonia mydas*) from Hawaii and Florida, USA

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For decades biologists have commented on morphological differences in green turtles (*Chelonia mydas*) from the Atlantic and Pacific Ocean basins. A number of investigators have enlisted morphological differences in arguments to separate *C. mydas* (a polymorphic species) into several subspecies or races (e.g., *C. m. agassizii*, *C. m. carrinera*, *C. m. japonica*). Deraniyagala (1939) felt that differences noted between Atlantic and Indo-Pacific forms were ontogenetic variations. Carr (1952, 1964, 1972) described two morphs of *C. mydas* in the Pacific. One morph was characterized by a deep body as well as dark pigmentation on the scales and plastron; the other had yellowish pigmentation and a flatter profile. He made brief mention that Pacific green turtles differed in form from Caribbean turtles. Caldwell (1962) listed a number of carapace, plastron, and scalation features that distinguished the different Pacific and Atlantic morphs. He felt that these differences were sufficient to justify their designation as subspecies. Kamezaki and Matsui (1995), using skull morphology, described 5 distinct geographic groups from the Atlantic, Pacific, and Indian Ocean basins. Pritchard and Trebbau (1984) noted that some populations of *C. mydas* had pigmen-