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Chelonia Mydas (Green Sea Turtle) Developmental Migration

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ripped off the neck and hindlimbs, and the peritoneal cavity had a puncture wound (Fig. 3). While these aggressions are perhaps due to higher population densities or behavioral differences in populations, we also observed one male *A. spinifera* killed by a female in an oxbow lake, adjacent to the Pascagoula River, where *A. spinifera* abundance was extremely low (29 September 2019: 30.80925°N, 88.72982°W; WGS 84 [Fig. 4]).

Aggressive behavior was not restricted to female-male interactions, as smaller females also showed evidence of harassment by larger females. This occurred less frequently, with 13% of females from the Tombigbee River drainage showing bite marks compared to 20% from the Pearl River drainage and 8% from the Pascagoula River drainage. Antagonistic behavior between females has also been documented in lab settings, with the larger females being the primary aggressors (Lardie 1965, *op. cit.*). These observations lead us to report the first cases of intraspecific mortalities in wild-caught *A. spinifera* in a hoop-net. This research was approved by the University of Southern Mississippi IACUC (Protocol #17051106.1), and all turtles collected were handled under Mississippi Department of Wildlife, Fisheries, and Parks Collection Permit #0408192.

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CHELONIA MYDAS (Green Sea Turtle). DEVELOPMENTAL MIGRATION. Bermuda is located 960 km ESE of Cape Hatteras, North Carolina, USA and serves as benthic developmental habitat for *Chelonia mydas* (Meylan et al. 2011. B. Am. Mus. Nat. Hist. 357:1–70). On 10 August 2012, a 63.4 cm minimum straight carapace length (SCL) *C. mydas* was captured in an entanglement net by the Bermuda Turtle Project at Wreck Hill (32.2783°N, 64.8859°W; WGS 84). It was the first and only capture of this turtle in Bermuda waters. The turtle was tagged on the trailing edge of both fore-flippers with titanium tags (MM938, MM939, Stockbrands Co. Pty Ltd, Osborne Park, Australia) and with a passive integrated transponder (PIT) tag (054876012; AVID, Norco, California, USA); a blood sample and skin biopsy were collected.

On 8 January 2017, Padre Island National Seashore (PAIS) biologists recovered MM938, cold-stunned but alive, in the Laguna Madre (estuary) in Corpus Christi, Texas, USA, on the west shoreline of PAIS (27.3902°N, 97.3454°W; NAD 83). The *C. mydas* was one of 283 turtles found stranded in Texas during a cold-stunning event from 7–9 January 2017. Both titanium tags and the PIT tag were present in the fore-flippers, identifying the turtle as the *C. mydas* captured in Bermuda on 10 August 2012. The *C. mydas* measured 75.8 cm minimum SCL, and thus was still immature. The turtle had no injuries, and after 4 d of rehabilitation at the Amos Rehabilitation Keep (ARK) in Port Aransas, Texas, USA the turtle was released on 11 January 2017 at PAIS (27.4235°N, 97.2980°W; NAD 83).

The minimum distance of travel of this developmental migration was 3405 km (least-cost path avoiding land from Bermuda to PAIS estimated in ArcGIS; ESRI, Redlands, California). The turtle increased in minimum SCL from 63.4 to 75.8 cm between 10 August 2012 and 8 January 2017, representing an average growth rate of 2.81 cm/yr.

This tag recovery provides the first evidence of connectivity between the *C. mydas* foraging aggregation in Bermuda and that in the coastal lagoons of Texas, in the western Gulf of Mexico.

Previous satellite tracking, tag returns and nesting events involving Bermuda-tagged Green Sea Turtles have shown linkages with numerous other areas in the region, with the majority of tag returns recorded in Nicaragua and Cuba, and a small number of nesting events documented in Mexico (Yucatán) and Costa Rica (Meylan et al. 2011, *op. cit.*; Meylan et al. 2014. Mar. Turt. Newsl. 141:15–17), as well as Florida (Bermuda Turtle Project, unpublished). Mitogenomic sequencing of the tissue sample collected from MM938 revealed the haplotype to be CM-A1.1.1 which occurs in ca. 70% of the *C. mydas* foraging aggregations in south Texas (Shamblin et al. 2017. J. Exp. Mar. Biol. Ecol. 488:111–120) and is represented in the nesting populations of the Western Bay of Campeche (Tamaulipas /Veracruz; Shamblin et al. 2018. Mar. Ecol. Prog. Ser. 601:215–226). Further mitogenomic analysis would reveal the extent to which Bermuda provides habitat for this newly proposed management unit.

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CHELYDRA SERPENTINA (Snapping Turtle). DIET. Snapping Turtles are opportunistic omnivores exhibiting a generalist diet that includes, depending on geographic locale, macrophytes, duckweed, and filamentous algae, invertebrates (aquatic insects, crayfish, snails, leeches), and vertebrates (fishes, amphibians, turtles, snakes, birds, and small mammals, including carrion; Ernst and Barbour 1989. Turtles of the World. Smithsonian Institution Press, Washington, D.C. 313 pp.). In one of the largest studies on the diet of *C. serpentina*, Lagler (1943. Amer. Midl. Nat. 29:257–312) examined 173 stomachs and 261 colons



Fig. 1. Acorns removed from the gastrointestinal tract of a *Chelydron serpentina* from Oklahoma, USA. Scale bar is mm.