

of *C. guttata* in the near future if alternative nesting habitats are not available.

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DEIROCHELYS RETICULARIA MIARIA (Western Chicken Turtle). EFFECTS OF DISKING. Disking is a method of tilling soil that is often used as a management technique to improve habitat for ground-nesting birds and waterfowl (Lopez et al. 2017. Applied Wildlife Habitat Management. Texas A&M University Press, College Station, Texas. 218 pp.). However, little is known about the effects of disking on fossorial species or species that aestivate underground. The subspecies *Deirochelys reticularia miaria* has been petitioned for listing and its range in Texas is under imminent urbanization threat (Ryberg et al. 2017. Herpetol. Con. Bio. 12:307–320). Research suggests that the most critical stages for maintaining stable aquatic turtle populations are likely to be mature adults and subadults (Brooks et al. 1991. Can. J. Zool. 69:1314–1320; Congdon et al. 1993. Conserv. Biol. 7:826–833), so understanding anthropogenic causes of mortality in mature individuals may be important for chelonian conservation.

During a telemetry monitoring and capture-mark-recapture study in western Harris County, Texas, USA, we observed six

incidents where disking caused mortality, injury, or otherwise affected the behavior of *D. r. miaria* that were aestivating in upland habitats (Bowers 2020. M.S. Thesis, Texas A&M University, College Station, Texas. 95 pp.). On 27 September 2020, we found the remains (Fig. 1A) of one subadult female (12.2 cm carapace length) in a strip that had been disked, likely as a firebreak. On 11 April 2018, we captured a subadult female (12.4 cm carapace length) active in a nearby wetland that had sustained a major injury due to disking (Fig. 1B, C), probably during the prior aestivation period. On 2 June 2021, we captured an adult male and a subadult female (16.0 and 14.2 cm carapace lengths, respectively) with similar injuries in the same wetland. On 20 May 2020, we observed that an upland tract where two mature female *D. r. miaria* were aestivating underground had been disked with a shallow (≤ 10 cm) disk. Both individuals survived uninjured but moved to the nearest non-disked upland area and re-buried for continued aestivation. One individual (20.2 cm carapace length) moved 97 m over land to relocate. The other individual (19.4 cm carapace length) moved 117 m over land to relocate. Both individuals had been dormant underground in the prior position since a telemetry monitoring session on 15 October 2019 (218 days). Prematurely inducing movements over land might cause increased predation risk and unnecessary exhaustion of energetic resources during the aestivation period. It is unclear whether the benefits of disking to other wildlife species outweigh the costs to aestivating turtle species in adult mortality, injury, and exposure to predation.

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DEIROCHELYS RETICULARIA MIARIA (Western Chicken Turtle). PREDATION. Striped Skunks (*Mephitis mephitis*) are significant turtle egg predators (Hamilton 1936. J. Mammal. 17:240–246). However, research suggests that the most critical stages for maintaining stable aquatic turtle populations are likely to be mature adults and sub-adults (Brooks et al. 1991. Can. J. Zool. 69:1314–1320; Congdon et al. 1993. Conserv. Biol. 7:826–833). Little is known about predators of adult *Deirochelys reticularia miaria* or about predation during periods of aestivation. The subspecies *D. r. miaria* has been petitioned for listing under the U.S. Endangered Species Act, and its range in Texas is under imminent urbanization threat (Ryberg et al. 2017. Herpetol. Con. Bio. 12:307–320).

During a telemetry monitoring study in western Harris County, Texas, USA, we aimed trail cameras set to expose every minute on five aestivating *D. r. miaria* (Bowers 2020. M.S. Thesis, Texas A&M University, College Station, Texas. 95 pp.). At 1743 h on 1 January 2019, we observed a Striped Skunk on camera (Fig. 1) excavating an aestivating mature male *D. r. miaria* (11.9 cm carapace length) in what appeared to be an unsuccessful predation attempt. At 1757 h (14 min later), the *D. r. miaria* left the aestivation site. This individual had been underground at that aestivation site since 5 September 2018 (119 days). It is unclear whether the predation attempt was unsuccessful because of the *D. r. miaria*'s body size or because the camera exposure startled

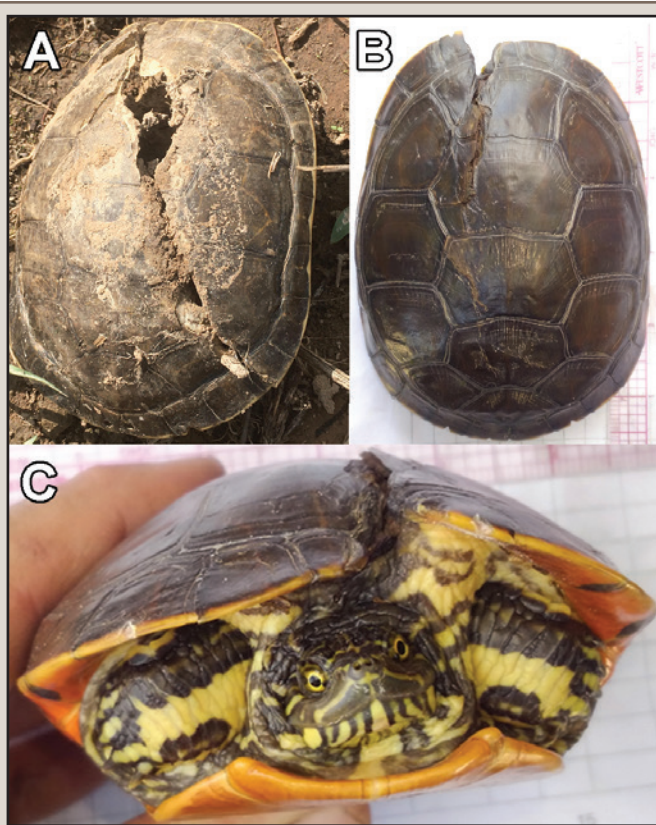


FIG. 1. Effects of disking on aestivating *Deirochelys reticularia miaria*: A) remains of a subadult female that was disked in an upland habitat; B) dorsal view of disking injury sustained by a subadult female; C) anterior view of the same injury.



FIG. 1. Predation attempt of an aestivating *Dermochelys reticularia* by a striped skunk (*Mephitis mephitis*) on 1 January 2019. At 1742 h the individual was aestivating underground. At 1743 h the skunk attempted excavation. Between 1744 h and 1756 h the turtle dug itself out of the ground. At 1757 h the turtle left the aestivation site.

the skunk. We observed no other predation attempts among the four other individuals monitored via trail camera. We have collected *D. r. miaria* remains within aquatic habitats during the active season, at upland sites directly adjacent to wetlands, and at upland sites far enough from wetlands that they were likely either excavated by predators during aestivation, preyed upon while changing aestivation sites, preyed upon while migrating to wetlands, or carried long distances by predators.

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DERMOCHELYS CORIACEA (Leatherback Sea Turtle). REPRODUCTION. Texas, USA supports nesting activity by five species of sea turtles documented in the Gulf of Mexico (GoM; National Marine Fisheries Service [NMFS] and U.S. Fish and Wildlife Service [USFWS]. 2008. Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea Turtle (*Caretta caretta*), Second revision. 325 pp.; Shaver and Frandsen 2019. Herpetol. Rev. 50:350–351; Shaver et al. 2016. Gulf Mex. Sci. 33:158–178; Shaver et al. 2019. Herpetol. Rev. 50:350; Shaver et al. 2020. Front. Mar. Sci. 7:673). Historic *Dermochelys coriacea* nesting activity was documented in the 1920s and 1930s at Little and Big Shell Beaches on North Padre Island, Texas (Hildebrand 1963. Cien-cia 22:105–112). In 2008, a *D. coriacea* nest was documented on North Padre Island at Padre Island National Seashore (PAIS), further south than the historic records. Eight eggs were located, however, only two of the eggs were viable, and no hatchlings were produced (Shaver et al. 2019, *op. cit.*). Herein, we report the first viable *D. coriacea* nest recorded in Texas since the 1930s.

On 9 June 2021 at ca. 1013 h, a biologist searching for evidence of sea turtle nesting activity located tracks left in the sand by a nesting turtle between mile markers 6 and 7 on South Padre Island, Cameron County, Texas, USA. The tracks were over 152.0 cm wide,



FIG. 1. *Dermochelys coriacea* hatchling released into the Gulf of Mexico on South Padre Island, Texas, USA.

as measured across opposite flipper impressions, and led from the tidal zone across a relatively flat section of beach to the nest location in a disturbed area of sand at the base of the foredunes.

A total of 97 eggs were discovered within the nest chamber. All eggs were relocated to the corral (i.e., an enclosed portion of the nesting beach) located on South Padre Island for protected incubation. The clutch was split into two nest chambers within the corral, each chamber containing a mix of yolked and non-yolke eggs (Chamber A contained 49 eggs, including 12 small, non-yolke eggs; Chamber B contained 48 eggs, including 10 small, non-yolke eggs), and buried at a depth of ca. 65 cm. A temperature data logger (Onset Computer Corporation, HOBO Pendant Temperature) was placed into the center of the egg mass within each chamber.

On 5 August 2021, the 58th day of incubation, when six hatchlings emerged from Chamber A, species identity was discovered to be *D. coriacea* and not Green Sea Turtle (*Chelonia mydas*) as previously believed. Chamber B emerged over two days, from 7–8 August 2021, with one hatchling emerging the first night and two hatchlings emerging the following evening. On 10 August 2021, Chamber A was excavated and inventoried. Chamber A contained one live hatchling, one dead hatchling, and 41 unhatched (non-viable) eggs. Chamber B was excavated on 11 August 2021 and contained 45 unhatched (non-viable) eggs. In total, 10 hatchlings were successfully released into the GoM (Fig. 1). Hatchlings had a mean (\pm SD) straight carapace length (SCL) of 55.8 ± 2.3 mm and a mean (\pm SD) straight carapace width (SCW) of 37.5 ± 3.2 mm ($n = 10$). The five hatchlings weighed had a mean (\pm SD) weight of 40.1 ± 5.7 g. Due to equipment malfunction, five hatchlings could not be weighed.

On 21 August 2021, PAIS biologists conducted an analysis of the excavated clutch contents (86 unhatched eggs and 1 dead hatchling; Fig. 2). Twenty-nine eggs were classified as apparently infertile (collapsed, non-white exterior, and no blood spot or embryo present). Twenty-two eggs were classified as spacer