



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



FIG. 2. Unhatched *Dermochelys coriacea* eggs, pre-analysis, at Padre Island National Seashore, Texas, USA.

eggs (white exterior, small, and non-yolked). Thirteen eggs were classified as fertile without embryo (white exterior, no blood spot or embryo present). Two eggs were classified as fertile with a blood spot (white exterior, blood spot present). Twenty fertile eggs contained dead embryos varying in developmental stage from 16–29 (Miller et al. 2017. *Chelon. Cons. Biol.* 16:111–122). The one dead hatchling was fully developed, had absorbed the yolk sac, and presented no noticeable injuries. Necropsy of the hatchling was not performed.

Embryonic deaths occurred during the first- (developmental stages 6–21; $n = 4$), middle- (developmental stages 22–27; $n = 9$), and final- (developmental stages 28–31; $n = 5$) third of incubation, based on an incubation duration of 60 d (Miller et al. 2017, *op. cit.*). Two embryos could not be staged due to size and decomposition. Embryos that died during the middle-third of incubation had a mean ($\pm$ SD) SCW of 18.4 ± 2.1 mm ($n = 9$) and during the final-third of incubation had a mean ($\pm$ SD) SCW of 26.5 ± 4.7 mm ($n = 5$). The dead hatchling measured 35.2 mm SCW. Tissue samples collected from four embryos and the dead hatchling have been archived at the NOAA-Fisheries Marine Turtle Genetics Laboratory in La Jolla, California, USA. Gonad samples collected from one embryo and the dead hatchling were sent to the University of Alabama Birmingham in Birmingham, Alabama, USA for histological sex determination.

External and internal black, brown, pink, purple, and/or green fungi were observed on and within most of the unhatched eggs. Plant roots were present on the exterior of 12 fertile eggs, 3 infertile eggs, and 2 spacer eggs from Chamber B. The fungi and presence of vegetation in the nest chamber may have contributed to embryonic death and the relatively low hatching success for this nest.

This is the first documented account of *D. coriacea* nesting on South Padre Island, Texas, the second account of *D. coriacea* nesting in the state of Texas since the 1920s and 1930s, and the first record of successful hatching of *D. coriacea* eggs in Texas and release of viable *D. coriacea* hatchlings into Texas GoM waters since then. The GoM is identified as important high-use foraging habitat and a favored destination for post-nesting *D. coriacea* (Evans et al. 2021. *Ecosphere* 12:e03722). As seasonal migration

of the species into, and prolonged residency within, the GoM continues, we anticipate additional nesting by *D. coriacea* in Texas.

All activities (nest detection, relocation, monitoring, excavation, analysis, and photographs) were conducted under state (Texas Parks and Wildlife Department Scientific SPR-0190-122; SPR-0421-044) and federal (U.S. Fish and Wildlife Service Endangered Species TE840727-3; PER0013385) permits, with ethical approval from the Institutional Animal Care and Use Committee (IACUC) at the National Park Service (201909289).

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EMYDOIDEA BLANDINGII (Blanding's Turtle). HIBERNATION.

Aquatic hibernation sites are most often reported for *Emydoidea blandingii*, where they hibernate partially buried in the deepest portions of wetlands and streams (Ernst and Lovich 2009. *Turtles of the United States and Canada*. Second edition. The Johns Hopkins University Press, Baltimore, Maryland. 827 pp.). Fewer reports of terrestrial hibernation exist, although Conant (1938. *Amer. Midl. Nat.* 20:1–200) reported two *E. blandingii* at the Toledo Zoo spent the winter under wet leaves several feet from water. The following observation was made while conducting a radio-telemetry study of *E. blandingii* in Linn County, Iowa, USA.

On 20 October 2003, an adult female *E. blandingii* (210 mm plastron length) was hand collected crossing a gravel road. The female was measured, marked, fitted with a radio transmitter (HOLOHIL® Systems LTD, Carp, Ontario; model AI-2F) and released at the point of capture. On 31 October 2003, she was found buried under ca. 7.6–10 cm of silt and leaf litter in the bottom of a shallow wet ditch adjacent to an active rail line. At that time, the ditch contained ca. 10–12.7 cm of flowing water coming from a spring located farther up the ditch. Soils where the turtle was buried were composed of mucky silt loam littered with ballast from the railroad embankment and sparse vegetative cover. On 5 November and 19 November 2003, she was relocated in the same location only much deeper. The area was probed, but her exact depth could not be ascertained. She remained in this location for the remainder of the winter of 2003–2004.

By the end of May 2004, the female had not yet emerged from hibernation. All other turtles in the study had emerged over a month earlier and it was thought that she had likely died over the winter due to her seemingly less than optimum hibernation location. On 4 June 2004, we went to the location with the intent of excavating the turtle to document her depth, position, soil conditions, etc., and to recover the transmitter and preserve the specimen. At this time, it was discovered that she had emerged sometime between 30 May and 4 June 2004 and that hibernation in this location had been successful.

The choice of this hibernation site may have been the result of a lack of available hibernation sites and this female may have just simply run out of time to find a more suitable location. Late summer and fall of 2003 were very dry and many of the wetlands in the area lacked water that fall, including one immediately across the railroad tracks from the hibernation location. The area in which this population of *E. blandingii* is found has been subject to increasing pressure from urban development over the last 45 years. As a result, no natural wetlands remain in the area and the only location where water remained in fall 2003 was a small man-made pond located in a residential yard that was kept