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Testudines - Turtles

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Federal, Brazil. One was holding a *Proceratophrys* sp. in its beak (Fig. 1). The White-eared Puffbird digs in the ground or in banks to construct a gallery as an entrance for the nest chamber, and could have captured the frog in its diurnal retreat on the soil. It is a common Cerrado bird that is mostly insectivorous, although other food items including lizards and vegetable matter have been reported (Del Hoyo et al. 2002. Handbook of the Birds of the World. Cotingas to Pipits and Wagtails. Lynx Edicions, Barcelona). This is the first record of a White-eared Puffbird predated a frog.

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SCAPHIOPUS COUCHII (Couch's Spadefoot). **PREDATION.** Predation upon larval *Scaphiopus couchii* by vertebrate and invertebrate predators has been well documented (Duellman and Trueb 1986. Biology of Amphibians. McGraw-Hill, New York. 670 pp.). Predation upon adults is likely common as well, especially during active periods such as the breeding season. However, there are few comprehensive studies detailing predation upon adult *S. couchii*. On 3 Aug 2006 at ca. 2400 h during a trip through Bottomless Lake State Park (Chaves Co., Roswell, New Mexico, USA: 33.31583°N, 104.32307°W; WGS84) we found a single adult male *S. couchii* on a road being consumed by an adult Common Barn Owl (*Tyto alba*). The owl had pinned down the toad with one talon piercing the midsection and had already created a large wound on the toad's back using its beak. The owl immediately flew away when our vehicle headlights illuminated the area from ca. 10 m away. The toad was still alive when collected, but expired shortly thereafter. The specimen was deposited in the University of Texas at Arlington Amphibian and Reptile Diversity Research Center (UTA-A57962).

To our knowledge, this is the first documented instance of predation upon *Scaphiopus couchii* by an avian predator. Common Barn Owls prey heavily upon small mammals, but have been known to eat other prey, including frogs (del Hoyo et al. 1999. Handbook of Birds of the World: Volume 5: Barn-owls to Hummingbirds. Lynx Edicions, Barcelona). This observation suggests that Common Barn Owls living in arid regions may utilize *S. couchii*, or desert breeding anurans in general, as a seasonally abundant food resource. *Scaphiopus couchii* adults may be attractive prey items during the breeding season owing to their large numbers, increased activity, and conspicuous advertisement calls.

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SCINAX FUSCOMARGINATUS (NCN). **PREDATION.** Batrachophagy between adult anurans is not frequently documented. Cardoso and Sazima (1977 *Ciência e Cultura* 29:1130–1132) reported predation of *Chaunus granulatus* by *Leptodactylus labyrinthicus* in Parque Nacional de Sete Cidades, in state of Piauí, Brazil. Can-



FIG. 1. An adult *Scinax fuscomarginatus*, captured by an adult *Leptodactylus furnarius*.

nibalism of nests and tadpoles of other species has been reported by *Leptodactylus labyrinthicus* tadpoles (Silva et al. 2005. *J. Nat. Hist.* 39:555–566). On 13 Dec 2006, at 1000 h (air temp. 21°C; water temp. 24°C) we observed an adult *Scinax fuscomarginatus* (20.5 mm SVL), being captured by an adult *Leptodactylus furnarius* (30.7 mm SVL). This observation occurred beside a pond, located in Botucatu (22.923°S, 48.458°W, 800 m elev, WGS84), State of São Paulo, Brazil. The pond was filled with water, the soil around the pond was sandy, and there were small grasses along the shoreline. The *S. fuscomarginatus* was captured by its posterior left leg as it walked close to the *L. furnarius* (Fig. 1). Both individuals were collected and deposited at the Departamento de Zoologia, Instituto de Biociências da UNESP-Botucatu (*S. fuscomarginatus* CCJJ 7816; *L. furnarius* CCJJ 7817).

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TESTUDINES – TURTLES

CHELYDRA SERPENTINA SERPENTINA (Common Snapping Turtle). **NESTING BEHAVIOR AND SITE SELECTION.** On 31 May 2008, we observed a ca. 36 cm CL *Chelydra serpentina serpentina* in unexpected nesting circumstances. Observations were made from 0908 to 1027 h on clear day with ambient temp ca 24°C. The nest site near Longmont, Colorado, USA (40.1599528°N, 105.1259861°W; WGS84) was 4.3 m from a seasonal ditch running north-south to connect two lakes, one on either side of a busy road. The intriguing aspect of the nest location was that it was immediately adjacent to a heavily traveled concrete sidewalk that bordered a road with a high volume of traffic. The frequent foot traffic on the sidewalk and virtually constant vehicle traffic on the adjacent road did not deter the turtle from the particular nest loca-

tion, even though virtually identical soils, gradients, and directional aspects were available equidistant from the ditch, but away from constant human activity. In fact, aside from the potential for nesting disruption, the particular nest location might hold incubation advantages. The position adjacent to the sidewalk might yield thermal advantages from radiant heat from the sidewalk, both above and below ground. The depth of the nest was ca. 15 cm, similar to the thickness of the sidewalk, and probably allowing the entire depth of the nest to be warmed by heat stored in the concrete. The nest was also on a west-facing side of the ditch, allowing it to receive maximal effect of solar radiation during the summer. Altitude is a limiting factor in Colorado for the range of *C. s. serpentina*, with the species only distributed below 1680 m elev. (Hammerson 1999. Amphibians and Reptiles in Colorado. 2nd ed. University Press of Colorado, Niwot). At 1518 m, the elevation of the nest site might be high enough such that any thermal advantages could be important.

Assuming the turtle lives in the pond on the same (south) side of the road as the nest, and can only use the ditch, which connects the ponds on the north and south sides of the road on a seasonal basis (spring only), then there are ca. 3–4 ha of open area for nest building. Unlike turtles that live in city parks where the body of water is often surrounded by sidewalks or bike paths, this turtle had >99% chance to choose a less traveled location to lay her eggs. Using the ditch to gain access to her nesting site provided many opportunities to exit the ditch anywhere along its ca 30 m length to lay her eggs in a non-traveled and secluded area. The ditch embankments are such that they would not inhibit her ability to climb out of the ditch at any location along the way.

At the time observations were initiated, ca. 20 eggs appeared to have already been deposited in the nest. Egg laying was completed at 0932 h. During the 24 min from initiation of observations, 15 additional eggs were added to the clutch already in the nest (average inter-egg interval: 1 min. 36 sec). By 1025 h (53 min after final egg was laid), the turtle had completed covering the nest to the extent it could not be distinguished from the neighboring ground. By 1027 h the turtle had re-entered the ditch.

Unfortunately, this nest was destroyed by a Raccoon (*Procyon lotor*) on 30 August 2008 (predator identification based on tracks and scat), so we were unable to determine if the nest would have produced viable hatchlings. The adjacent ditch, which is often dry by late summer, had been filled during an unusual heavy rain event, so it seems possible that hatchlings might have successfully dispersed if the nest had not been predated.

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CLEMMYS GUTTATA (Spotted Turtle). **DISPLACEMENT.** *Clemmys guttata* utilizes a wide variety of shallow wetland habitats including streams, marshlands, and swamps (Ernst et al. 1994. Turtles of the United States and Canada. Smithsonian Institution Press, Washington, DC. 578 pp.). Juveniles of this species (≤ 6 cm carapace length) tend to be secretive and are observed less often than adults (Ernst 1976. J. Herpetol. 10:5–33). On 16 May

2008, I observed a juvenile *C. guttata* (carapace length 5 cm, with 3–4 annuli) swimming westward across the Patuxent River (38.7839222°N, 76.7093278°W) in Maryland. The river at this location is ca. 110–120 m wide, with a depth of 3 m. On the east side of the river, a 400-m wide freshwater tidal marshland dominated by Spatterdock (*Nuphar advena*) separates the main channel from the adjacent floodplain, where adult *C. guttata* are commonly sighted. The juvenile was captured while swimming close to the water's surface and was photographed for verification.

This unusual occurrence might be explained by a major flood that took place on 14 May 2008. A late northeastern storm caused the river's channel to expand significantly, with strong currents that deposited large amounts of debris along the banks. This turtle might have been displaced by the effects of the storm, and was possibly attempting to return to its place of origin. Other species of semi-aquatic and terrestrial turtles were also sighted adjacent to or swimming across the Patuxent River following the storm, suggesting that the displacement of turtles as a result of major weather events is not uncommon. Previous investigators have found that strong current velocity associated with floods might displace turtles from their home ranges (MacCulloch and Secoy 1983. J. Herpetol. 17:283–285; Moll and Legler 1971. Bull. Los Angeles Co. Mus. Nat. Hist. 11:1–102). Moll and Moll (2004. The Ecology, Exploitation, and Conservation of River Turtles. Oxford University Press, pp. 23–24) suggest that displacement as a result of flooding is more likely to affect juvenile age class individuals of semi-aquatic turtle species. Ernst (1968. Herpetologica 24:77–78) reported that of 25 adult *C. guttata* relocated a distance of 310 m from the original capture point, 14 were later recaptured within 27 m of their capture point, suggesting that this species might have some homing ability.

This observation was made while conducting research at the Jug Bay Wetlands Sanctuary in Lothian, Maryland. Chris Swarth, Sanctuary Director, assisted in identifying and measuring *C. guttata*, and provided additional local observational records of the species.

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GLYPTEMYS INSCULPTA (Wood Turtle). **DIET.** North American Wood Turtles are omnivores that feed on a variety of sources, including green leaves, fruits, algae, moss, fungi, insects, slugs, snails, and earthworms (Ernst et al. 1994. Turtles of the United States and Canada. Smithsonian Institution Press, Washington D.C. 578 pp.; Harding 1997. Amphibians and Reptiles of the Great Lakes Region. University of Michigan Press, Ann Arbor, Michigan. 378 pp.). Wood Turtles feed opportunistically, as the abundance and availability of food items changes seasonally, and are known to scavenge animal carcasses, including fish (Harding 1997, *op. cit.*; Farrell and Graham 1991. J. Herpetol. 25:1–9). As part of a population genetics study, we collected morphometric data and DNA samples from 47 *Graptemys insculpta* in Berkeley County, West Virginia during May 2008 and noted feeding events and food items when possible. Wood Turtle food sources in Berkeley County (listed in order of frequency of observation) included grasses,