Diego counties (McCoid 1976, 1985; McCoid and Fritts 1980a, b, 1989, in press; St. Amant and Hoover 1969; St. Amant et al. 1973).

On 29 and 30 June 1992, we visited known sites of former *Xenopus* occurrence in San Diego and Riverside counties. These sites had harbored dense populations in the past, but some had not been surveyed since the late 1970's or the mid-1980's. Survey techniques consisted of visual observations and dip-netting. Drainages surveyed (San Diego Co.) were Sweetwater River, Tijuana River, Tecolote Canyon, and (Riverside Co.) Santa Margarita River (=Arroyo Seco Creek). Additionally, the stream below Lake Murray Reservoir (San Diego Co.) was surveyed in 1990.

Adequate aquatic habitat was present at most sites with the exception of one in the Sweetwater River drainage (Avocado and Valencia Streets) and Arroyo Seco Creek (Riverside Co.). The site in the Sweetwater drainage had been dry for a number of years and Arroyo Seco Creek (upstream from a known occurrence site) was dry. While the actual site in Riverside Co. was not surveyed, the creek above the site was flowing during *Xenopus* investigations in the late-1970's. This site was, however, trapped in 1989 and no frogs were collected (R. Tinsley, pers. comm.). No *Xenopus* were observed at any of these sites.

It is unlikely that *Xenopus* has been extirpated from many sites in southern California. Had successful reproduction occurred, however, dip-netting and visual observations should have yielded either larvae or recently metamorphosed frogs at the localities we surveyed (see McCoid and Fritts 1989 for a discussion of seasonal reproduction). More likely, frog populations have declined and there was little or no successful reproduction at the surveyed sites in 1992, despite above normal rainfall the previous winter. There are several 1992 anecdotal (but reliable) reports of adult *Xenopus* in both the Sweetwater drainage and Otay Mesa area (San Diego Co.).

Reasons for the apparent decline may be due to the extended drought in southern California from 1987 to 1991 which probably inhibited successful reproduction and recruitment. Additionally, at one site that maintained adequate habitat (Tijuana River), predaceous centrarchids (*Micropterus salmoides*) were observed. Predaceous fishes may control larval populations of *Xenopus* (McCoid and Fritts 1980a; Prinsloo et al. 1981).

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LIFE HISTORY NOTES

Life History Notes is analogous to Geographic Distribution. Individual notes should, with few exceptions, concern only one species, and authors are requested to choose a keyword which best describes the nature of their note (e.g., Reproduction, Longevity, Morphology, etc.). Figures are permissible to illustrate any data, but should **replace** words rather than embellish them. The section's intent is to convey information rather than demonstrate prose. Articles submitted to this section will be reviewed and edited prior to acceptance. Send two copies of manuscripts, double-spaced, directly to the section editor.

Standard format for this section is as follows: SCIENTIFIC NAME (in caps), COMMON NAME (lower case, in parentheses) as it appears in Collins (1990. *Standard Common and Current Scientific Names for North American Amphibians and Reptiles*, 3rd ed., Herp. Circ. 19:1-41), KEYWORD (in caps). DATA on the animal. Place of deposition or intended deposition of specimen(s), and catalog number(s). Then skip a line and close with SUBMITTED BY (Name(s) in caps, and address(es) in full). (NCN) should be used for common name where none is recognized. References may be briefly cited in text (refer to a recent issue for citation format).

ANURA

RANA CATESBEIANA (Bullfrog). **PREDATION**. Although Tester (1932. Univ. Toronto Stud. Ser. 36. Pub. Ontario Fish Res. Lab. 46:171-203) includes tadpoles in the normal diet of the smallmouth bass, *Micropterus dolomieu*, little is known of bass predation behavior on tadpoles.

On 25 May 1986 a concentrated aggregation of about 50 *Rana catesbeiana* tadpoles was noticed in ca. 30 mm of water at Ward Lake, Pontiac Z.E.C., Pontiac Co., Quebec, Canada. The site was located on the NW side of a sandy peninsula at the NE end of the lake. The air temperature was 33°C, and there was no cloud cover. To either side of this tadpole cluster were large rocks which formed natural barriers. Aquatic vegetation or other suitable cover was absent. One large tadpole darted away from the group towards deeper water. Upon reaching 300-350 mm of water, the tadpole was consumed by a *M. dolomieu*. Further investigation

revealed that two bass were in the immediate area. Both fish were about 300 mm total length. This behavior was observed for 15 minutes, and three more tadpoles were taken by the fish.

It is unknown whether or not the smallmouth bass played a role in forming the aggregation of tadpoles. No other aggregations were seen. Fourteen *R. catesbeiana* tadpoles were collected and deposited in the herpetology section of the Canadian Museum of Nature (NMC 28490).

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RANA CLAMITANS (Green Frog). **ALBINISM**. On 6 June 1991, an albino *Rana clamitans* tadpole was collected (Canadian Museum of Nature NMC 33885) on the Kazabazua River, Pontiac County, Quebec. The tadpole was collected in an inlet of a meandering river. Aquatic vegetation consisted of a few scattered clumps of tape grass, *Vallisneria*. Substrate consisted of a sand and gravel mixture with heavy siltation. A normally pigmented specimen of similar developmental stage was also collected at the site. Green frogs are the most common frog along the river. During eight years of observations at this site, no other abnormally pigmented tadpoles have been observed. Only one other report of albinism in this species has been located (Dyrkacz 1981. SSAR Herp. Circ. 11, 31 pp.).

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TESTUDINES

APALONE FEROX (Florida Softshell). **REPRODUCTION**. Iverson (1985. Florida Sci. 48(1):41-44) reported the range for single clutch size in *Apalone ferox* as 9-24 eggs. In this note we report an unusually large single clutch size and unique nest site.

An *A. ferox* nest containing 32 eggs was discovered on 8 May 1991 in the apron of a recently abandoned *Gopherus polyphemus* burrow located at Boyd Hill Nature Park, St. Petersburg, Pinellas Co., Florida. The nearest body of water (0.186 ha) was located 103 m north. The intervening habitat is classified as scrubby flatwoods (Myers and Ewel 1990. Ecosystems of Florida. Univ. Central Florida Press, Orlando, 765 pp.). The center of the nest was located 71 cm from the burrow mouth. The egg chamber measured approximately 9 cm diam and 14 cm deep.

Sixteen of the eggs were collected, measured (to the nearest 0.5 mm using metric dial calipers), and incubated in sand collected from the nest site at outdoor ambient temperature. Egg diameter measurements on 8 May 1991 were 27.0–33.5 mm ($\bar{x}$ = 29.4 mm, N = 16)

Hatchlings began emerging on 26 July 1991. Twelve emerged at 79 days and one at 80 days post-discovery (81.25% hatch success rate). On 28 July 1991 hatchling carapace length (measured to the nearest 0.1 mm using metric dial calipers) was 36.2–44.3 mm ($\bar{x}$ = 41.2 mm, N = 13), carapace width at mid-point was 29.1–36.4 mm ($\bar{x}$ = 34.2 mm, N = 13), and mass (measured to the nearest 0.1 g using a triple beam balance) was 8.4–11.0 g ($\bar{x}$ = 9.7 g, N = 13).

The *G. polyphemus* burrow system, including its excavated sand mound, provides important habitat for a large number of vertebrates and invertebrates (Campbell and Christman 1982. *In* N. J. Scott, Jr. (ed.), Herpetological Communities. USFWS Wildl. Res. Rpt. 13, pp. 163-171; Jackson and Milstrey 1989. *In* J. Diemer et al. (eds.), Gopher Tortoise Relocation Symposium Proceedings. Florida Game and Freshwater Fish Commission Nongame Wildl. Prog. Tech. Rpt. No. 5, pp. 86-98). In addition, the excavated sand mound serves as an open site for seedling establishment (Laessle 1942. Univ. Florida Publ. Biol. Sci. Ser. 4(1):1-143).

Although *G. polyphemus* generally construct their nests in the excavated sand mound (Iverson 1980. Am. Midl. Nat. 103(2):353-359), this note documents another chelonian species utilizing this site for nesting and reiterates the importance of the burrow apron.

We thank P. A. Meylan for comments that greatly improved an early draft of this note and the staff and volunteers of Boyd Hill Nature Park for assistance during ongoing research.

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KINOSTERNON FLAVESCENS (Yellow Mud Turtle). **MULTIPLE NESTING**. Dividing a clutch of eggs into two or more nests is a strategy that has been documented for very few turtle species. The Malaysian river terrapin, *Batagur baska*, divides its clutch of eggs between two or more nests (Moll 1980. Malays. J. Sci. 6:23-62). Fitch and Plummer (1975. Isr. J. Zool. 24:28-42) attributed the discrepancy between small nest complements and large oviductal complements of eggs in smooth softshell turtles (*Apalone mutica*) to division of some clutches between two or more nests.

During a 1992 radiotelemetry study of a population of *K. flavescens* in Henry Co., Illinois, two females divided clutches of eggs between two nests. One female laid two eggs in a nest on 21 June and two eggs in another 3 m away on 22 June. A second female laid 3–4 eggs in one nest on 25 June and about 2 eggs in another nest 2 m away on 26 June. Both nests were destroyed by foxes soon after deposition. Johnson (1987. The Amphibians and Reptiles of Missouri. Conservation Commission of the State of Missouri, Jefferson City, 368 pp.) reported that clutch sizes of *K. flavescens* ranged from 2–6 eggs. This estimate may be low if clutch division is a common behavior of this species.

Predation is a common source of nest mortality for turtles. Multiple nesting is a strategy which may increase nest survivorship by spreading the risk of total clutch failure to predation.

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LEPIDOCHELYS KEMPII (Kemp's Ridley Sea Turtle) and ***CARETTA CARETTA*** (Loggerhead Sea Turtle). **DIET**. Juvenile Kemp's ridley (*Lepidochelys kempii*) and loggerhead (*Caretta caretta*) sea turtles seasonally utilize Long Island Sound and the estuarine embayments of eastern Long Island, New York as feeding grounds (Burke et al. 1991. Copeia 1991:1136-1138; Morreale et al. 1992. J. Herpetol. 26:301-308). Piscivory is not commonly reported for sea turtles. Additionally, we have located only one documented case of a seahorse consumed by a sea turtle. A loggerhead stranded in Nova Scotia had a single seahorse (*Hippocampus hudsonius* = *H. erectus*) among numerous food items contained within the gut (Bleakney 1967. Can. Field Nat. 81:269-272). Since 1985 we have examined the dietary components of many sea turtles from Long Island. Here we report three Long Island turtles, two Kemp's ridleys and one loggerhead, that consumed seahorses. Seahorses in all samples represented *H. erectus*. The intestinal tract of the