

CLONOPHIS KIRTLANDII (Kirtland's Snake). **AGGREGATING BEHAVIOR** and **SITE FIDELITY**. Little is known about reproductive cycles or social behavior in *Clonophis kirtlandii*. Most information is anecdotal; a published report of communal denning in *C. kirtlandii* exists (Conant 1943. Amer. Midl. Nat. 29:313--341). Fitch (1970. Univ. Kansas Mus. Nat. Hist. Misc. Pub. 52:1--247) did not mention fall copulation in *C. kirtlandii*, but Ernst and Barbour (1989. Snakes of Eastern North America. George Mason University Press, Fairfax, Virginia. 282 pp.) suggested females may produce more than one litter per year. Minton (2001. The

Amphibians and Reptiles of Indiana. Indiana Academy of Sciences, Indianapolis, Indiana. 404 pp.) mentions a 30 July parturition date, which may indicate fall copulation, and refuge/site fidelity.

At 1410 h on 17 September 2001 we encountered four adult *C. kirtlandii* occupying a single crayfish burrow in Will County, Illinois, USA. The sky was overcast with sporadic light rain and an air temperature of 19.6°C. The site is graminoid-dominated restored prairie with a perched water table and numerous crayfish (*Fallicambarus fodiens*, *Procambarus gracilis*) burrows. The first snake encountered (adult male, 315 mm SVL, 25.5 g) was found at the surface with ca. 1/3 of its anterior down a 22 mm diameter crayfish burrow. Closer inspection revealed a second snake beneath the first, with its anterior half partially concealed within the burrow. This snake, also an adult male (313 mm SVL, 27.5 g) and the other were removed from the burrow for examination. Upon removal of the two snakes, the head of a third immediately appeared at the burrow entrance. This snake vacated the burrow during observation and was another adult male (320 mm SVL, 28.5 g). After capturing this snake, a fourth *C. kirtlandii* appeared at the burrow opening and slowly began to exit when tapped lightly behind the head by one of us. This snake proved to be an adult female (355 mm SVL, 27.05 g). Temperature in the burrow at a depth of 19 cm was 18°C. The four snakes were retained in the laboratory for data collection and photographs. The female shed her skin in the collecting bag en route to the laboratory. While confined in a 2-1/2-gallon aquarium with paper towel substrate, all three males exhibited courtship behavior, e.g., chin rubbing, frequent tongue-flicks along the female's body, and tail wrapping. When inactive, the snakes coiled in a compact mass under the substrate. The courtship behavior continued intermittently until 21 September, when the four snakes were released at the capture site.

At the same locality in April, two adult female *C. kirtlandii* were found under separate (4 m apart) 1.3 x 1 m corrugated tin sheets positioned to survey snakes. Both were identified by unique dorsal patterns and scale-clipped subcaudals. The first female (374 mm TL, 13 g) found 24 April was not recaptured, but the second (250 mm SVL, 9.5 g) found 25 April, was found under the same cover panel on 26, 27, and 30 April. Similar observations occurred previously (D. Mauger, unpubl. data), however four *C. kirtlandii* found under cover panels on successive days from April to June 1996 were not marked; it was therefore unknown whether they represented one or more individuals.

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