

LITERATURE

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Reproductive biology of female rattlesnakes (*Crotalus viridis*) in British Columbia; J. Malcolm Macartney & Patrick T. Gregory. *Copeia*, 1988 (1): 47-57.

Age and sexual maturity, mating behavior, reproductive cycles and litter characteristics of female northern Pacific rattlesnakes (*Crotalus viridis*) were documented in a 3 year mark-capture study of populations in British Columbia near the northern limits of the species' range. Sexual maturity was attained at 5-7 years and first litters were produced at 6-8 years. Mating occurred during late summer and follicles of mated females underwent vitellogenesis prior to hibernation. Ovulation occurred in June and parturition followed in September or October. Females generally did not feed during the year they were gravid and fat body reserves were low at the time of parturition. the frequency of reproduction depended on a female's ability to regain body mass during nongravid years. Postpartum females that were able to double their body mass in one active season reproduced biennially; however, most females followed a triennial or longer cycle.

Nest site selection and water relations of eggs in the snake, *Opheodrys aestivus*; Michael V. Plummer & Howard L. Snell. *Copeia*, 1988 (1): 58-64.

When given a choice among nest boxes differing in water potential of the substrate, female Green snakes (*Opheodrys aestivus*) preferred to nest in moister substrates of -200 and -300 kPa rather than in substrates ranging -600 to -2000 kPa. Green snake eggs incubated in six substrates with moisture levels from -200 to -2000 kPa increased in size and mass. There was no difference in frequency of developmental abnormalities or hatchling success among substrate treatments. hatchlings from eggs incubated on the -2000 kPa substrate were smaller in length and mass than those from all other substrates. However, because substrates in natural nests are subject to drying during incubation, it may be advantageous to nest in the wettest available site within the favourable range to mini-mize drying at the end of incubation.

Venom ontogeny in the Pacific rattlesnake *Crotalus viridis helleri* and *Crotalus viridis oregonus*; Stephen P. Mackessy. *Copeia*, 1988 (1): 92-101.

The author examined the ontogenetic variation in venom composition in the Pacific rattlesnakes *Crotalus viridis helleri* and *Crotalus viridis oregonus*. Young snakes eat lizards until the snakes reach approximately 500 mm in total length; above this size, mammals are taken exclusively. As snakes increase in size, they feed on larger mammalian prey, and a functionally different venom is produced.

Courtship and mating of *Agkistrodon contortrix*; Gordon W. Schuett & James C. Gillingham. *Copeia*, 1988 (2): 374-381.

Courtship and mating of *Agkistrodon contortrix* were studied in the laboratory. Sexual behavior occurred from late August till October and from late February till April. Courtship was always initiated and performed by males. Courtship and mating are extensively described.

Striking and other offensive and defensive behaviour patterns in *Atractaspis engaddensis* (*Ophidia, atractaspididae*); Ilan Golani & Elazar Kochva. *Copeia*, 1988 (3): 792-797.

The authors give a detailed description of offensive and defensive behavior of *Atractaspis engaddensis*. The main features of the striking patterns are: establishment of contact between the ventral aspect of the snake's head and the substrate which is to be bitten; erection of one fang which emerges through a narrow slit formed between the two closed lips; piercing of the substrate; and ejection of venom, which is performed simultaneously with the movement of the fang to a diagonally backward position (in relation to the substrate).

Timber rattlesnakes (*Crotalus horridus*) of the Pine Barrens: their movement patterns and habitat preference; Howard K. Reinert & Robert T. Zappalorti. *Copeia*, 1988 (4): 964-878.

Radiotelemetry was used to monitor the movements and habitat use of Timber rattlesnakes (*Crotalus horridus*) in the Pine Barrens of southern New Jersey. Males generally exhibited the largest active ranges. Time series analyses indicated that movement patterns of males and non-gravid females consisted of constantly shifting, non-overlapping activity areas and shorter dispersal distances from hibernacula. Males and non-gravid females utilized non-forested habitat with greater than 50% canopy closure, thick surface vegetation (approximately 75%) and few fallen logs. Gravid snakes utilized less densely forested sites with approximately 25% canopy closure, an equal mixture of vegetation and leaf litter covering the surface, frequent fallen logs, and warmer climatic conditions.

Thermoregulation of free-ranging Diamond pythons, *Morelia spilota* (*Serpentes, Boidae*); David J. Slip & Richard Shine. *Copeia*, 1988 (4): 984-995.

Temperature-sensitive radiotransmitters were implanted in 18 free-ranging pythons (*Morelia spilotes*), and the snakes were monitored for 4-34 months. Body temperatures rose during a period of morning basking to between 28 and 30°C, then fell gradually until the following morning. Unlike many other heliothermic reptiles, Diamond pythons generally showed only one period of basking each day. Body temperatures were lower on cloudy days than on clear days, mainly because of reduced opportunities for basking. Mean body temperatures on clear days were lower in winter than in other seasons, mainly because of higher cooling rates. On clear days, snakes under cover were relatively cool (23.6°C), and much warmer when they were active (27.7°C). On cloudy days body temperatures were lowest when snakes were coiled in the open (20.9°C) and highest when snakes were basking (25.4°C) and moving (25.4°C).