California Wildlife Habitat Relationships System
California Department of Fish and Wildlife
California Interagency Wildlife Task Group

RINGNECK SNAKE *Diadophis punctatus*
Family: COLUBRIDAE Order: SQUAMATA Class: REPTILIA
R048

Written by: S. Morey
Reviewed by: T. Papenfuss
Edited by: R. Duke

DISTRIBUTION, ABUNDANCE, AND SEASONALITY

This common, but somewhat secretive, small snake is widespread in California, absent only from large portions of the Central Valley, high mountains, desert (except in the Providence Mountains, San Bernardino Co.), and those regions east of the Sierra-Cascade crest. Elevation sea level to 2100 m (7000 ft). Ringneck snakes are most common in open, relatively rocky areas within valley-foothill, mixed chaparral, and annual grass habitats.

SPECIFIC HABITAT REQUIREMENTS

Feeding: Ringneck snakes forage on the surface and under surface objects taking earthworms, salamanders, treefrogs, small lizards, and small snakes. Slender salamanders (Batrachoseps) are often suggested as important prey items (Stebbins 1954, 1972, Basey 1976), and this is surely so in many areas. The range of ringneck snakes in California largely overlaps with that of the various species of slender salamanders.

Cover: Ringneck snakes are often encountered during the day under boards and flat rocks. They are also known to use rotting logs, woodpiles, stable talus, and small holes in the ground. These snakes tend to avoid moving through open or barren areas by restricting their movements to areas of surface litter or herbaceous vegetation. In the coldest areas ringneck snakes aggregate at dens for winter hibernation (Parker and Brown 1974), but in coastal regions periods of winter inactivity are passed under surface objects or in other suitable refuges.

Reproduction: Eggs are laid in loose aerated soil, in stabilized talus, or in rotting logs (Nussbaum et al. 1983).

Water: Henderson (1970) found that captive snakes kept on moist substrates developed blisters, but that they are subject to desiccation, especially at high temperatures. Under natural conditions ringneck snakes are often encountered in somewhat moist microhabitats often near intermittent streams.

Pattern: Ringneck snakes are most common in open, relatively rocky areas.

SPECIES LIFE HISTORY

Activity Patterns: Although some diurnal activity has been observed, this little-studied snake is often found during the day beneath surface objects. Crepuscular and, at least some, nocturnal behavior during warmer periods is expected.

Seasonal Movements/Migration: In Utah, ringneck snakes make annual movements to and away from known hibernacula (Parker and Brown 1974). It s possible that this also occurs at inland montane localities in California. Over much of the rest of the range ringneck

snakes spend periods of winter inactivity in or near the area of warm-season activity.

Home Range: Fitch (1961) was unable to find much evidence for fixed home ranges in Kansas but other workers, notably Blanchard et al. (1979), found that certain individual snakes could be located at the same locality for several years. The characteristics of home range of California ringneck snakes is unknown.

Territory: No evidence for the territorial defense of resources has been reported.

Reproduction: About three eggs are laid from April to July depending on local conditions. Hatching probably occurs from August to October. In courtship, males apparently bite the female at the neck ring (Nussbaum et al. 1983).

Niche: Although Fitch (1961) characterized ringnecks from Kansas as having a relatively short life span and high rate of population turnover, evidence from other studies (Parker and Brown 1974, Blanchard et al. 1979) indicates that ringneck snakes are long-lived, slow-growing snakes with low juvenile mortality. Ringneck snakes are probably taken as prey by a few other snakes, diurnal birds, and possibly by some small mammals. Blanchard et al. (1979) suggest mice, shrews, and chipmunks as possible enemies.

REFERENCES

Basey, H. E. 1976. Discovering sierra reptiles and amphibians. Yosemite Natural History Association. 50pp.

Blanchard, F. N., M. R. Gilreath, and F. C. Blanchard. 1979. The eastern ring-neck snake (Diadophis punctatus edwardsii) in northern Michigan (Reptilia, Serpentes, Colubridae). J. Herpetol. 13:377-402.

Fitch, H. S. 1961. Longevity and age-size groups in some common snakes. Pages 396-414 in W. F. Blair, ed. Vertebrate Speciation. Univ. Texas Press, Austin.

Henderson, R. W. 1970. Feeding behavior, digestion, and water requirements of Diadophis punctatus arnyi Kennicott. Herpetologica 26:520-526.

Nussbaum, R. A., E. D. Brodie, Jr., and R. M. Storm. 1983. Amphibians and reptiles of the Pacific Northwest. Univ. Press of Idaho. 332pp.

Parker, W. S., and W. S. Brown. 1974. Notes on the ecology of regal ringneck snakes (Diadophis punctatus regalis) in northern Utah. J. Herpetol. 8:262-263.

Stebbins, R. C. 1954. Amphibians and reptiles of western North America. McGraw-Hill, New York. 536pp.

Stebbins, R. C. 1972. California amphibians and reptiles. Univ. California Press, Berkeley. 152pp.

Life history accounts for species in the California Wildlife Habitat Relationships (CWHR) System were originally published in: Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California. Updates are noted in accounts that have been added or edited since original publication.