

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Animal Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Chionactis occipitalis annulata* (Baird)
COMMON NAME: Colorado Desert Shovelnose Snake, Colorado Shovel-nosed Snake
SYNONYMS: *Lamprosoma annulatum* Baird, *Chionactis saxatilis* Funk
FAMILY: Colubridae

AUTHOR, PLACE OF PUBLICATION: *Chionactis occipitalis annulata* (Baird, 1859), U.S. Mex. Bound. Surv. Vol. 2, Rept., Pt. 2, p. 22, pl. 21.

TYPE LOCALITY:

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: One of four subspecies in the species *C. occipitalis* (*C. o. klauberi*, *C. o. occipitalis*, *C. o. annulata*, and *C. o. talpina*). According to Mahrtd et al. (2001 in NatureServe 2007), the present subspecific taxonomy appears to be based on color pattern ecomorphs and probably does not reflect the evolutionary history of the species.

DESCRIPTION: This is a small snake with adult measurements between 25-42 cm (10-17 in) in total length, and a shovel shaped snout that is generally flatter than most other snakes. The scales are smooth, shiny and not keeled; the dorsal scales are usually in 15 rows at the mid-body. The belly is concaved. The ground color is cream or yellowish, with narrow black bands; usually less than 45 bands but more than 25. The posterior black bands usually completely encircle the body but the anterior bands do not. Narrow orange to red crossbands are present between them. The snout is cream or light yellow. A black mask crosses the top of the head and covers the eyes. The head (which is a little wider than the neck) is narrow with a large spade-like scale on the tip of a flat shovel-like snout, has a lower countersunk (deeply inset) jaw, and well developed nasal valves; the pupils are round. The internasals are not separated by the rostral. The anal plate is divided. (Behler and King, 1979; Stebbins, 2003; Brennan, 2006; Brennan and Holycross, 2006).

AIDS TO IDENTIFICATION: In the subspecies *C. o. annulata*, the bands are black and narrower with more space between each band. There are fewer than 45 bands on the body plus unmarked front band positions on lower surface. There are usually narrow "clean" (no speckles present) orange to red crossbands present. The light colored snout of *Chionactis occipitalis*, distinguishes it from the similar looking Sonoran Coral Snake (*Micruroides euryxanthus*), which has a black snout. Other similar species include the Variable Sandsnake (*Chilomeniscus cinctus*), which has 13 scale rows at the midbody, and the rostral separates the internasals; and the Western

Ground Snake (*Sonora semiannulata*) which has dark pigment at the base of most of the dorsal scales, and less extreme flattening of the snout (Stebbins 2003).

ILLUSTRATIONS:

Color photos (Behler and King 1979: plates 604 and 612)

Color drawing (Stebbins 1985: plate 38. 2003: plate 45)

Color photo (Brennan and Holycross 2006: p. 99)

Color photo (Randy Babb, in Brennan 2006

<http://www.reptilesfaz.com/Snakes-Subpages/h-c-occipitalis.html>)

Color photos of snake and habitat

<http://www.californiaherps.com/snakes/pages/c.o.annulata.html>)

Color photo (Glenn & Martha Vargas, 2002 CAS, in CalPhotos

http://calphotos.berkeley.edu/cgi/img_query?)

Color photos (William Flaxington 2004, in CalPhotos

http://calphotos.berkeley.edu/cgi/img_query?)

Color photos (Jeremiah Easter 2005, 2006, in CalPhotos

http://calphotos.berkeley.edu/cgi/img_query?)

Color photo (Robert Potts, 2002 CAS, in CalPhotos

http://calphotos.berkeley.edu/cgi/img_query?)

Color photo (Erik F. Enderson, in Tucson Herpetological Society Snakes

<http://www.arts.arizona.edu/herps/CHOC.html>)

Color photo (Suzanne L. Collins, 2005, in CNAH <http://www.cnah.org/detail.asp?id=40>)

Color photo (In <http://www.herpscope.com/cgi/herpguide.cgi?>)

TOTAL RANGE: Southeastern California (desert base of mountains) to southwestern Arizona, south into northeast portion of Baja California along the Gulf of Mexico, and into extreme northwest Sonora, Mexico.

RANGE WITHIN ARIZONA: Southwestern part of Arizona including La Paz and Yuma counties.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: *Chionactis occipitalis annulata* is nocturnal, burrows underground in the daytime, but occasionally is found by day in shaded areas. Most surface activity occurs in the spring. Adaptations that allow for a quick swimming movement (“sand swimming”) through loose sand, with an s-shaped, side-to-side movement includes smooth scales, flat snout (inset lower jaw), concave abdomen, and nasal valves. The angular, concave abdomen is also thought to reduce slippage when crawling on surfaces. This species is inactive in cold temperatures and extreme heat. It is rarely seen on the surface except at night, where it is often observed crossing desert roads. It spends most of its time under the sand/soil hunting for inverts. It has a natural

resistance to scorpion stings. *Chionactis occipitalis* is non-venomous, however their saliva is considered to be mildly toxic.

REPRODUCTION: Males fight for access to receptive females. They mate in the spring, and lay a clutch of 2-4 eggs (maybe as high as 9) in early summer.

FOOD HABITS: They feed on invertebrates such as insects, spiders, scorpions, centipedes, larval insects, moths, buried chrysalids (moth pupae), and reptile eggs, often while the snake is burrowing.

In a feeding behavior study of *Chionactis occipitalis klauberi* conducted by J.K. Glass (1972), the “size of food accepted ranged from a termite (4 mm) to a cricket (32 mm). Soft-bodied invertebrates were preferred over hard-bodied prey although three hard bodied Junebugs were eaten. Prey were subdued by one of two means: One method, which was to strike and grasp with the mouth, usually associated with the vertical stance form of pursuit. The other method, usually following horizontal pursuit, was ‘looping’, i.e. throwing the anterior third of the body in a single loop over the prey and pressing it against the substrate or some object. The snake then seized the prey with its jaws.”

HABITAT: Restricted to the desert where it frequents sandy washes, dunes, sandy flats, loose soil, and rocky hillsides where there are sandy gullies or pockets of sand among rocks, often with little vegetation.

ELEVATION: For the species: In Arizona, they are found at elevations ranging from near sea level to about 2,500 feet (762 m). (Brennan 2006).

PLANT COMMUNITY: Lower Colorado River Sonoran Desertscrub. Usually found in association with sandy washes or dunes in the desert flats or on gently sloping bajadas, often with little vegetation. (Brennan 2006). Vegetation may include creosote bush, desert grass, cactus, or mesquite. Prefers areas with scattered mesquite-creosote bush (Behler and King 1979).

POPULATION TRENDS: Unknown

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: None
OTHER STATUS: None

MANAGEMENT FACTORS: No major threats have been identified for *Chionactis occipitalis*. It is likely that some local populations have declined as a result of conversion of habitat to human uses. (NatureServe 2006).

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Annuals surveys for distribution and trend information.

LAND MANAGEMENT/OWNERSHIP: Unknown.

SOURCES OF FURTHER INFORMATION**REFERENCES:**

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ADDITIONAL INFORMATION:

The genus name *Chionactis* is Greek, where *chion* means snow and *aktis* means ray or beam. The species name *occipitalis* is Latin, pertaining to the back of the head, and the subspecies *annulata* is Latin meaning ringed, referring to the banded body. (Californiaherps.com)

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