

H U S B A N D R Y

The Pale Milksnake (*Lampropeltis triangulum multistrata*): Natural History and Captive Husbandry

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Photographs by the authors.

With shining scales of red, black and white, the Pale Milksnake (*Lampropeltis triangulum multistrata*) is an unmistakable, yet seldom seen denizen of the northern Great Plains and parts of the Rocky Mountain Front Range of North America. Its adaptability and tenacity are as plainly evident as its beauty.

Natural History

The Pale Milksnake is one of 25 generally recognized subspecies of *Lampropeltis triangulum*, which collectively range from Canada to Ecuador and Venezuela, and from the Atlantic Coast to the Great Basin of North America. This subspecies inhabits canyons, prairies, sandhills, semi-deserts, open pine forests, and Rocky Mountain foothills in the states of Nebraska, South Dakota, Wyoming, Montana, and likely a portion of southwestern North Dakota.

One trait these diverse habitats share is a harsh climate with hot summers, long, cold winters, and scant precipitation — all of which contribute to the largely fossorial nature of Pale Milksnakes. They are only active when conditions are optimal, and even then they are almost entirely nocturnal. Moisture, generally in the form of recently fallen rain, can stimulate surface activity in these snakes.

Observations of the Pale Milksnake are uncommon. The lack of sightings does not necessarily indicate actual population size, though various sources have mistakenly characterized this subspecies as rare. In fact, if sought under the right conditions, they can be found to be abundant, albeit secretive animals.

Pale Milksnakes generally emerge from brumation (a period of dormancy induced by cool temperatures) in late April or early May. Upon emergence, males use olfactory cues to locate females with which to mate. Egg-laying typically occurs in late June or early July. Clutches usually consist of 2–8 elongate, leathery-shelled eggs. Hatchlings emerge from late August through early September, and measure 13–23 cm (5–9 in) in length. Pale Milksnakes re-enter brumation in late September or early October. Den sites may be shared with Prairie Rattlesnakes (*Crotalus viridis*), Eastern Yellow-bellied Racers (*Coluber constrictor flaviventris*), Bullsnares (*Pituophis catenifer sayi*), and garter snakes (*Thamnophis* spp.).

Pale Milksnakes are dietary generalists, feeding on a variety of small rodents and reptiles. Hatchlings often show a marked preference for lizards. The snakes are in turn preyed upon by birds, mammals, and other reptiles — possibly including their own kind. The availability of surface water is not a limiting factor for populations of Pale Milksnakes. In addition to moisture obtained from prey items, precipitation, dew, and subsurface moisture likely all play a role in providing the animals with a source of water in more arid regions.

The Pale Milksnake intergrades with neighboring subspecies along the periphery of their ranges. In southern Nebraska and northern Colorado, it intergrades with the very similar Central Plains Milksnake (*L. t. gentilis*), and it is sometimes regarded as a clinal variant of that form. The Pale Milksnake also intergrades with the Red Milksnake (*L. t. sypila*) along the Missouri River Valley in eastern Nebraska and South Dakota. These intergrade zones are characterized by animals intermediate in appearance between the two subspecies.



A male Pale Milksnake from Sheridan County, Nebraska.

A Note on Conservation: Based on our experiences and those of others, the Pale Milksnake is a relatively abundant form throughout most or all of its range. Due to its secretive, fossorial nature, as well as the remoteness and vastness of its preferred habitats, this subspecies appears unlikely to be threatened by commercial collection for the pet trade. Habitat damage and urban sprawl, however, can pose a serious threat to local populations. These animals have been found near and even in urban areas throughout their range, suggesting a resilience to altered habitats.

Description

The Pale Milksnake is a small to medium-sized snake, with adults averaging 60–75 cm (24–30 in) in total length. Scales are smooth and glossy, giving the animals a shiny appearance, and are found in 21 (rarely 23) rows at mid-body (Williams 1988). Their bodies are beautifully ringed in the typical tricolored red, black, and white shared with many subspecies of milksnake as well as relatives such as the Sonoran Mountain Kingsnake (*Lampropeltis pyromelana*) and the California Mountain Kingsnake (*Lampropeltis zonata*). The colored “rings” often are actually saddles in the Pale Milksnake, with the red rings not closing across the belly, although fully banded animals are seen from time to time.

Upon closer inspection of many individuals, it becomes apparent that the “red” actually ranges from scarlet through orange and to more earth-toned terra cotta and brick-red. The “white” can be bone-colored, cream, butter yellow, or a shade of gray, and can be immaculate (very rarely) or have varying amounts of dark pigment infused along the flanks. This dark pigment is affectionately referred to as “news-printing” by Pale Milksnake aficionados, and does not necessarily detract from the appearance of the animal. The black bands vary considerably as well. They can be very narrow or broad, and occasionally encroach on the red bands in what are referred to as “cross-overs” by milksnake enthusiasts. Pale Milksnakes from each locality where the species is found have their own “look,” although considerable variation exists within each population.



A “spotted” male from Pennington County, South Dakota.



A female from Thomas County, Nebraska.



A female from Bighorn County, Montana.

With so much natural variation, hobbyists can pursue plenty of directions in their breeding projects. Many Pale Milksnake keepers are strict in keeping bloodlines pure, and only breeding animals from the same locality. A number of current breeding projects include reducing the amount of “news-printing” that develops as the individuals age, producing strongly yellow-banded snakes and reducing the head marking to produce white-headed animals. White-headed animals are particularly stunning, and a number have been found in the wild as well as in captivity. Pale Milksnakes are truly one of nature’s works of art.

Captive Husbandry

Despite its reputation to the contrary, the Pale Milksnake is fairly easy to maintain for the experienced herpetoculturist. However, a number of ecological considerations must be kept in mind. The first and foremost is feeding. Many juvenile (and some adult) Pale Milksnakes show a marked preference for lizards. For this reason, hobbyists are encouraged to acquire captive-bred specimens that are established feeders on frozen/thawed rodents. A breeder offering this subspecies should be expected to provide robust, readily feeding stock, as well as valuable information on lineage and husbandry. Frozen/thawed rodents should form the basis of a captive milksnake’s diet.

Occasionally, individuals may refuse to feed. While well-established, captive-bred specimens generally feed voraciously, some individuals cease feeding in late summer or early fall regardless of the temperatures at which they are kept. This is especially true of adults, and in nature this behavior is an adaptation to the harsh and early winters experienced by Pale Milksnakes. An individual caught in a sudden cold spell with a full digestive tract is likely to incur health problems. A captive animal that has gone off feed should be brumated as described in the section on breeding below. Upon warming in the spring, the animals generally resume their lust for food.

Security is another concern of Pale Milksnake husbandry. Members of the genus *Lampropeltis* are notorious escape artists, and escape-proof housing is necessary. Plastic storage containers with sturdy lids and locking mechanisms are adequate once ventilation holes have been provided. Animals should be housed separately other than during the breeding season. Security for the animals themselves is also a necessity. Overturned plates, folded newspaper, sections of cardboard, and small, plastic storage containers all work



A female (left) and male (right) from Stillwater County, Montana.

well. A hide-box filled with moist moss is frequently used by captive milksnakes, especially as ecdysis nears. Substrates should be inert, sterile, and as dust-free as possible. Readily available and frequently used options include aspen shavings, newspaper, and paper towels. Cedar and pine shavings should be avoided because of the toxic phenols they contain.

Adequate temperatures for the Pale Milksnake range from 21–32 °C (70–90 °F) during the active season. Access to a thermal gradient covering this range is ideal, although some herpetoculturists have had great success maintaining their entire collection of animals at or near the middle of this range. A thermal gradient can be achieved with the use of thermostatically-controlled heat tapes, cables, or pads placed under one end of an enclosure.

Breeding

Brumation is necessary for successful captive reproduction. Brumation should consist of a winter cooling period of three to five months at 5–13 °C (41–55 °F). Clean water and adequate ventilation are essential for brumating snakes. Animals of both sexes should be fed heavily through the active season. Beginning approximately two weeks after brumation ends, pairs should be placed together overnight several times each week until the females are noticeably gravid or cease to be receptive to males' advances. As oviposition approaches, females generally enter what is referred to as a "pre-lay

shed," an ecdysis cycle that occurs one to two weeks prior to depositing their eggs.

Small, plastic storage containers (1–5 liters, depending on the size of the animal) with an appropriately sized hole cut into them and filled with dampened *Sphagnum* moss provide an ideal oviposition chamber, and an ideal moist hiding place throughout the snakes' active season. Following oviposition, eggs should be removed and incubated in damp, additive-free perlite or vermiculite at 24–28 °C (75–82 °F). Hatching commences approximately six to eight weeks later, depending on incubation temperature.

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A female from Cherry County, Nebraska.

A Note on the Acquisition of Stock: Although Pale Milksnakes are abundant in most habitats in which they are found, they are extremely secretive animals and considerable time, physical effort, and financial expenditure are often necessary to locate these animals in the wild. Additionally, some wild-collected individuals fail to acclimate to captive conditions and refuse to feed on readily available food sources. Parasitism is another concern when dealing with wild-collected animals, and any such individuals should undergo a full evaluation by a qualified veterinarian. If wild snakes are to be collected, be sure to obtain all necessary permits and comply with state regulations. With these issues in mind, acquiring snakes from knowledgeable captive breeders is far preferable to collecting them in nature.



The “Snake Dance” is performed even today, although this picture of a Snake Priest is circa 1890.