



WILDLIFE NOTES

Salamanders of New Mexico

Webster's Collegiate Dictionary gives two definitions of a salamander. One is a "mythical animal having the power to endure fire without harm." More appropriate, however, is the second definition: "Any of numerous amphibians resembling a lizard...". The key word is resembling, because salamanders are not lizards, though many people erroneously think of them as such.

There are significant differences between salamanders and lizards: The cold-blooded salamanders have soft skin and are moist to the touch; they breathe by gills in the larval stage and through the skin in the young and adult stages. Lizards have lungs, and are scaled and dry.

New Mexico is home to three species of salamanders – but they belong to two different families – family Ambystomatidae and family Plethodontidae (New Mexico's two endangered salamanders belong in this family.)

Two subspecies of tiger salamander (*Ambystoma tigrinum*) are found in New Mexico: the barred tiger salamander and the Arizona tiger salamander. The tiger salamander averages three to 6 1/2 inches (75 - 162.5 mm). Oddly enough, however, the less developed and generally younger age classes can reach up to twice the length of adults.

The tiger salamander is stocky, has small eyes, a broad rounded snout, and bumps on the underside of the front and hind feet. Coloration depends upon its

habitat. Over much of its range – California, eastern



and southern United States, and Mexico – the tiger salamander has spots and bars of white, cream, or yellow on a black background. In other areas, their black ground color may be dusky spots or a more or less broken network of 'tiger' markings.

The barred salamander is black on its back, with an average of 17 bright yellow to olive vertical bars or large spots between its fore- and hind limbs.

The Arizona tiger salamander has yellow to dark olive spots on its back – averaging 32 in number – that may be irregular and extend between their fore- and hind limbs. In northwestern New Mexico, the Arizona tiger salamander may also be dull olive with yellow mottling or spots.

Old adults of all tiger salamanders tend to darken and develop a less distinct pattern, making subspecific recognition more difficult.

The tiger salamander lives in quiet ponds, reservoirs, lakes, temporary rain pools, and streams, from arid sagebrush plains and rolling grassland to mountain meadows and forests. Adults can be found under objects near water or crawling at night to and from breeding sites. Movement generally occurs during or shortly after rains, and in cold areas soon after ice begins to melt from ponds.

Adults spend much of their time underground, in burrows of ground squirrels, gophers, and badgers. They usually emerge only for brief periods to breed; in New Mexico, and much of the arid southwest, breeding is generally spring and summer during periods of rain; fall through spring in mild winters. In cold areas larvae may overwinter and sometimes reach sexual maturity while still in the larval stage.

The tiger salamander is native to New Mexico, but extensive use of live tiger salamander larvae as fish bait and expanding irrigation in arid lands have resulted in the spread of this species outside its natural range.

Endangered Salamanders

The state's endangered salamanders are the Jemez Mountains salamander (*Plethodon neomexicanus*) and the Sacramento Mountain salamander (*Aneides hardii*). The Sacramento Mountain salamander, which is native to southeastern New Mexico, is the only member of the family Plethodontidae in the highlands of southeastern New Mexico. The Jemez Mountains salamander is the only member of its family in the Jemez Mountains.

Both species live in high-elevation forests with a substantial canopy, along with cover such as rocks and various kinds of organic litter. In addition, old talus slopes are important types of cover for the Jemez Mountains salamander. Both species eat invertebrates such as spiders, ants, and beetles.

The upperparts of the Sacramento Mountain Salamander are light to dark brown, with some greenish-gray to bronze mottling. The under parts are mainly light brown, fading to a cream color on the throat. The front teeth of the larger males project beyond the lips when the mouth is closed, and the head is somewhat triangular in outline, particularly

in adult males. There are 14 to 15 lines, called costal groves, on the sides of the body. The adult is three to four inches (76.5 to 102 mm) long.

The Jemez Mountains salamander generally has 19 costal groves on its side. It is brownish in color on its back, with fine brassy shadowing. The throat and undertail are lighter in color. Adults are two to 4 1/2 inches (50 to 110 mm) long, of which about half is tail.

Both the Sacramento Mountain and Jemez Mountains salamanders lack lungs, breathing instead through their skin. As a consequence, these animals spend much time below the ground surface, coming out when conditions are humid. The period of greatest activity is from the end of June until early September. It is believed that this salamander moves to subterranean cavities to avoid freezing temperatures.

In both species, mating and egg-laying take place underground or within rotted logs. Young start hatching in July. A female will lay eggs only every other year – generally four in a clutch for the Sacramento Mountain salamander – usually early in the active season and generally during summer rains.

Male Jemez Mountains salamanders reach sexual maturity at two to three years, and females after three years.

Logging, overgrazing, and forest fires reduce habitats of these salamanders.

That fact, in itself, would seem to eliminate the first Webster definition of salamander: An animal with the power to endure fire without harm.

Revised 5/02

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**Wildlife Notes is published by
the Department of Game and Fish.
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Santa Fe, NM 87504
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