

COMMON ENSATINA (Ensatina, Eschscholtz Salamander, Eschscholtz's Salamander, Redwood Salamander)

*ENSATINA ESCHSCHOLTZII* (GRAY, 1850)

NATURAL HISTORY SUMMARY BY MAYA BAMBA

## Classification

**Kingdom:** Animalia

**Phylum:** Chordata

**Class:** Amphibia

**Order:** Caudata

**Family:** Plethodontidae

**Genus:** *Ensatina*

**Species:** *E. eschscholtzii*

## Description

The Common Ensatina (*Ensatina eschscholtzii*) is a small salamander, growing to about 3-8 cm. Within the species there is a lot of color variation, but the majority have orange or yellow on the dorsum of their legs. Most adults have brown or orange bodies, while the juveniles are dark brown with bright orange spots on the dorsum of their limbs. Ensatinas have large eyes and usually 12 to 13 costal grooves along the body. They are part of the lungless family of salamanders which conduct respiratory processes through their thin skin. Males have a larger upper lip than females and very unique tails. Their tails appear swollen and round, with a visible constriction at the base, making this part appear thinner than the rest. Females usually have shorter tails (Hallock and McAllister 2005).

## Distribution

Ensatinas can be found from the southwestern tip of British Columbia, Canada, down the North American coast to the top of Mexico's Baja California Peninsula. They also live on the western slopes of the Cascade and Sierra Nevada mountain ranges (IUCN SSC Amphibian Specialist Group 2015). While Ensatinas are officially considered a ring species, meaning that there are many subspecies that can be found in all of these areas, other research has questioned this conclusion. Some research states that they

are actually part of a superspecies (a group of species that once had the same parent species) that experienced allopatric speciation and are able to breed with each other (Highton 1998). *Ensatina eschscholtzii's* [range map](#) is available at IUCN SSC Amphibian Specialist Group 2015.

## **Diet**

Ensatinas eat small spiders, beetles, worms, snails, and various other organisms. They spot their prey and exhibit crouching/stalking behavior. With their protruding tongues, they capture their prey and bring it into the mouth. Studies have shown that these and other salamanders can use sensory information to assess the size of their prey and then use this information to finely control the function and speed of their jaw and tongue movements. It has been reported that the salamander will actually respond more quickly and actively to larger prey, sensing them through a nerve in their tongue pad that carries sensory information (Deban 1997).

## **Habitat and Ecology**

Adults and juveniles live in the same terrestrial habitat. Though there are many subspecies, Ensatinas tend to live in coniferous/deciduous forests, woodlands, and scrubs (where there is moderate rainfall), most commonly under rocks, logs, mossy bark, and leaf litter. Right before reproduction, they have also been known to live in animal burrows. They are extremely susceptible to desiccation and therefore must live in moist soil environments. Because of this susceptibility, Ensatinas also tend to enter a period of estivation during the summer months, in other animal burrows and inside logs.

Ensatinas share a habitat with many different animal species, and therefore may have to share and/or compete for different environmental resources. There are many other salamander species with which they must live, so they have developed patterns that allow them to co-exist. The most important of these patterns is resource partitioning and the Ensatinas have developed specific feeding habits that allow for this. All of these salamander species eat the same types of food, but they partition the prey species by size. While some salamander species tend to eat larger prey, Ensatinas eat significantly smaller-sized prey of the same species.

Ensatinas also serve as food for larger species such as garter snakes, raccoons, and other small organisms. In order to reduce their chances of being eaten, when threatened, they will stiffen their legs, arch their backs downward, and curl their heads and tails toward the body. They will also flip their tail in the direction of the predator and secrete a white substance out of the poison glands located on the top of the tail. In order to defend themselves even further, Ensatinas can remove their own tails, wiggling them back and forth with repeated force. The tail continues to move and distracts the predator while the salamander escapes. In time, they are able to grow back a new tail (AmphibiaWeb 2017).

### **Reproduction and Life Cycle**

Ensatinas do not have a migration cycle, usually staying in the same habitat to reproduce. They live in places where there is a distinct rainy season between the months of September and April. During these months, males begin to produce a large amount of sperm. Nests have been found in the burrows of other animals and under logs. Females lay between 3 and 25 eggs. They watch over the eggs until they hatch and the juveniles disperse into the environment.

Extensive research exists on how Ensatinas find their mates. There is a distinct pattern that all reproductive individuals go through. First, the male exhibits a stalking behavior by crouching and moving towards the female. Then, the male rubs his head against the female's snout and throat. The pair engages in a "tail walk" where the male arches his back and inserts his tail between the female's legs. There is sacral contact at this point and the sperm is deposited. The "tail walk" continues and the female squats over the sperm previously released by the male while the male strokes the female's back with his tail (Stebbins 1949).

### **Conservation Status**

In 2015, the International Union for Conservation of Nature Red List of Threatened Species listed *E. eschscholtzii* as a species of "Least Concern" due to the large extent of occurrence, large number of sub-populations and localities and presumed large population size (IUCN SSC Amphibian Specialist Group 2015). They are currently not endangered, and no significant conservation efforts are underway.

## Cultural Significance

There is no cultural significance reported at this time, however *Ensatina* are an important model system for studying to process of speciation.

## Specimen Specific Detail

The *Ensatina* (*E. eschscholtzii*) specimen from the Burton Ostenson Museum of Natural History at Pacific Lutheran University was collected on March 27, 1959 at Kapowsin Lake, Pierce County, Washington. The collector is listed as “Freeman”, but no further information is known about the collector. There was lots of research being published at this time about *Ensatina*s and their evolutionary process. Even though Gray first described *Ensatina*s in 1850, a century later there was still much left to learn about it, which is why this specimen might have been important and sought after.

## Literature Cited

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