

# Coastal Tailed Frog

(*Ascaphus truei*)



Photo credit: William Flaxington

## Range and Distribution

Coastal tailed frogs are found from northwestern California northward to the Nass River of British Columbia, at elevations ranging from sea level to approximately 5,900 feet. Their range is bordered to the west by the Pacific coast and to the east by the Cascades. In Oregon, they are found west of the Cascades in the Coast and Cascade Mountain ranges. Within this range, populations are sparsely distributed in suitable habitats.

## Habitat Characteristics

The coastal tailed frog requires cold, fast-moving, well-shaded streams with step-pools and intermediate slopes. Temperatures must remain cool year-round, as all forms of coastal tailed frog are intolerant of warm temperatures. All life stages are always found in or near water. In the winter, coastal tailed frogs require water that does not freeze all the way through. Individuals may move downstream to stream reaches that do not form anchor ice.

## Diet and Foraging

Juveniles and adults eat a wide variety of invertebrates. They forage along stream banks at night, or further into the forest after heavy rains. The tongue of coastal tailed frogs does not extend to catch prey as in many other frog species, instead, adults lunge with their entire body to snap up prey. Tadpoles scrape algae and pollen off of rocks.

## Species Description

Coastal tailed frogs are highly adapted to life in fast-flowing mountain streams: their bodies are flattened, they have hardened toes on their front feet, and they have long back legs with powerful back feet. There are two species of tailed frog that are both found in Oregon: the coastal tailed frog, described here, and the Rocky Mountain tailed frog. Tailed frogs can be identified by their vertical pupils and lack of external ear drums. The two species of tailed frogs are best differentiated by their geographic range, as they look very similar. Coastal tailed frogs are found in the Coast and Cascade mountains, while in Oregon, Rocky Mountain tailed frogs are found in the Blue Mountains in the northeastern corner of the state.

The coloration of coastal tailed frogs varies from olive, green, or reddish with gray or yellow mottling. There is a pale yellow or greenish triangle between the snout and eyes. Their pupils are vertical, and they have dark, horizontal eye stripe. Adults grow up to an average of one to two inches in length, snout to vent, with adult females averaging 50% larger than males. Males have a small "tail," for which the species is named. The tadpoles are slate gray to brownish gray and covered in black flecks, with a white dot on the tip of the tail, and a copper colored bar between the snout and eyes. Their bodies are flattened, and they have mouths oriented on the underside of their body that allow them to adhere to rocks in fast flowing water.



## Life History and Ecology

Coastal tailed frogs are seasonally active between April to October. They are mostly nocturnal, though on occasion they may be observed moving along stream banks in the daylight in humid conditions. Juveniles and adults may move moderate distances into adjacent forests, but mainly stay close to the stream. They are highly intolerant to desiccation, or drying out, so movements are restricted to times with cool wet weather.

Frogs are *ectothermic*, or "cold-blooded," meaning they rely on environmental temperature to maintain their body at the optimal temperature for metabolism. Tailed frogs have an extremely narrow temperature range they can survive in, one of the narrowest of all frog species. Embryos can tolerate temperatures between 5 and 18.5° C (41 to 65.3°F): this is the narrowest known tolerance range and lowest upper limiting temperature to development of North American frog species.

Coastal tailed frogs have a reproductive strategy that is well adapted to the fast-flowing streams they are found in. Courtship and mating occur in the late summer and early fall when stream flow is more predictable. Egg laying occurs from June to August of the following year, depending on elevation, latitude and stream temperature. Males have an extended cloaca used for internal fertilization. This adaptation helps to minimize the risk of eggs being washed downstream during fertilization. Females attach their clutches of big, colorless eggs inconspicuously under large rocks that are well anchored in streams. Clutch size is an average of 40 eggs (range 20 to 96), and egg masses can be laid individually or communally. Data suggest that females breed every second year while males may breed each season.

Coastal tailed frogs are a long-lived species that develop slowly. They have distinct immature and mature body forms and undergo complete metamorphosis, when they transform into their adult form. They emerge from eggs as fully aquatic tadpoles. Tadpoles have a long, broad tail, a complex mouth structure with rows of teeth, gills, and no legs. They can take anywhere from one to four years to reach metamorphosis, when they change into their mature form. During metamorphosis, they develop legs, their tail shrinks, the lungs enlarge, and gills disappear. The time it takes to mature is dependent on food availability and stream temperature. They can take seven to nine years from the time they hatch from eggs to reach sexual maturity. Individuals are known to live over 15 years, up to 20 years total.

Coastal tailed frogs defend themselves from predation by tucking in their limbs, jumping into water, and allowing themselves to be swept downstream away from predators. Known predators include garter snakes, giant salamanders, trout, dippers, and hellgrammites.

## Fun Facts

- Coastal tailed frog tadpoles have a mouth that is on the underside of the head like a stingray. They use these uniquely positioned mouths to anchor themselves to rock surfaces while feeding so that the fast current does not wash them downstream.
- Tailed frogs (including coastal and Rocky Mountain tailed frogs) have a variety of unique prehistoric features that set them apart from all other frog species. They have true ribs, their tongue function is reduced (they can't launch their tongue out to catch insects), and they can't make any noise!
- Tailed frogs don't swim with a typical "frog kick." Instead, they kick their legs alternately while swimming.
- Coastal tailed frogs are endemic to the Pacific Northwest, meaning that they can't be found anywhere else in the world.

## Conservation

The understanding of range-wide population trends for coastal tailed frogs is limited, though their population is likely declining. They are a long-lived frog with low reproductive rates and a limited ability to disperse to new habitats, which means that populations are slow to recover after disturbances. They are habitat specialists, which may make them vulnerable to habitat changes including those that increase water temperature and sedimentation. The quantity and quality of habitat that coastal tailed frogs live in has declined throughout their range, but it is not definitively understood how this impacts their populations.

Coastal tailed frogs live in delicate ecosystems that are vulnerable to the effects of sedimentation and disturbance from hikers. To help in the conservation of this sensitive species, stay on trails, keep your pets on leash, and pack out all of your trash especially when you are in and around their habitat. Like many amphibians, coastal tailed frogs are sensitive to chemicals like sunscreen and insect repellent, so it is best not to touch wild amphibians. Handling amphibians improperly can damage their skin, and needlessly stresses individuals.

Coastal tailed frogs are an Oregon Conservation Strategy Species, and a Sensitive Species in Oregon. They are a Federal Species of Concern. For more information about the conservation status of coastal tailed frogs including special needs, limiting factors, data gaps, and conservation actions, refer to the Oregon Conservation Strategy.