Cascades Frog *(Rana cascadae)*

Range and Distribution

Cascades frogs occur throughout the Cascades range from just beyond the Washington-British Columbia border into California. The range extends to the Klamath Mountains through the northern tip of the Sierra Nevada region in California. There is also a population in the Olympic Mountains of Washington.

In Oregon, Cascades frogs are found at elevations ranging from 2,500 to 6,000 feet but occasionally as low as 1,600 feet.

Habitat Characteristics

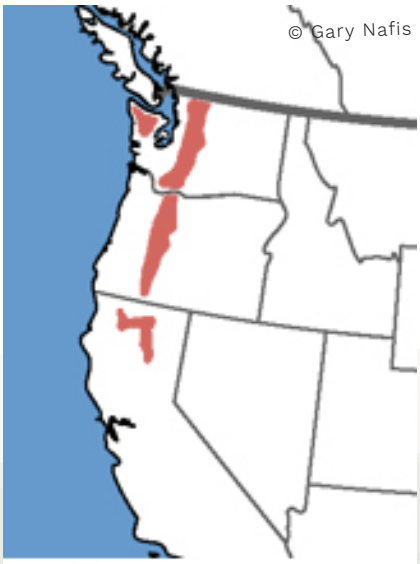
Cascades frogs live in remote mid- to high-elevation waterbodies of the Cascades, including lakes, wet meadows and streams. These frogs are well adapted to wide ranging conditions, able to survive long snowy winters and hot summers in the mountains.

They are found in a variety of aquatic habitats, including wet meadows, lakes, ponds and flowing streams. Outside of the breeding season, large frogs may spend more time in streams than smaller frogs. Still-water habitats with silty bottoms are selected as breeding sites. Preferred microhabitats include open, sunny areas with logs or rocks that provide basking and foraging opportunities, as well as places to hide from predators.

Species Description

Cascades frogs are a medium-sized montane frog species that can be found near still or slow-moving fresh water bodies. They are brown to olive green in color above, and most individuals have angular or round black spots on the back. Underneath, their skin is nearly translucent, with a mottled throat and a yellow-tan belly. Cascades frogs have a distinct dorsolateral fold, a ridge of raised skin that runs the length of either side of their body to their hip. They have distinct facial markings: a dark facemask, golden colored eyes oriented toward the side, and a white upper jaw stripe. Adult females can grow up to three inches in length, while smaller males grow up to 2.5 inches long from snout to vent. Tadpoles are dark brown with coppery speckling, and can grow up to two inches in length. During the breeding season, you may hear males advertising for potential mates in spring with a quiet series of low, grating clucks.

Cascades frogs can look very similar to Oregon spotted frogs and northern red-legged frogs. To distinguish a Cascades frog from these other two species, look for a prominent dorsolateral fold to the hip and a distinct white lip line. The underside of these frogs' belly and thighs can help distinguish between the three species: Cascades frogs are translucent yellow or tan underneath, northern red-legged frogs often have a translucent red color on their thighs, and Oregon spotted frogs have opaque red or orange thighs.



OREGON CONSERVATION

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Diet and Foraging

Cascades frogs are generalist predators that eat a variety of invertebrates including water striders, caddisflies, mayflies, crane flies, ants, grasshoppers, and spiders. They are visual hunters and they will forage on the water surface or terrestrially in wet meadows.

Life History and Ecology

Cascades frogs are diurnal, or active during the day, and are often found near water. Like other amphibians, Cascades frogs are *ectothermic*, or "cold-blooded," which means they rely on the environment to maintain their body at the optimal temperature for metabolism. During the winter, they bury themselves in the sediment of an aquatic habitat that does not freeze over (deep lakes, streams, or flowing springs), preferring deep, loose silt under the water. When they are underwater or buried in sediment during hibernation, they are able to obtain oxygen through their skin. In the spring, they become active as temperatures rise and emerge from their winter refugia.

They breed shortly after the snow begins to melt, just as free water becomes available along the edges of the water source. Males congregate in chorusing groups to attract potential mates, spacing themselves in a regular pattern in suitable habitat. They mate in April to July, depending on seasonal conditions. Egg masses are deposited singly or in communal aggregations and have been found either free floating or attached to emergent vegetation or other substrates. Egg development takes approximately three weeks, depending on water temperature.

Cascades frogs undergo complete metamorphosis. Tadpoles, the immature form that emerge from eggs, are distinctly different in body form from fully mature adults. Tadpoles are fully aquatic, have gills and a tail fin, and do not have legs. They metamorphose (transform) into their adult form the same season they hatch, between August and September. During metamorphosis, they transform drastically; they grow legs, reabsorb their tail, and develop lungs. Recently metamorphosed frogs stay close to their rearing habitats, while juvenile frogs move more freely among habitat patches. Adults exhibit higher fidelity to seasonal habitat patches than juveniles do, often returning to the same habitat each year.

Cascades frogs live a long time, over ten years, and do not reach sexual maturity until two to three years old. They have fairly high annual survival rates and populations can reach high densities in areas where there are ample resources. However, the species occurs in isolated populations and is also vulnerable to chance events which may extirpate individual populations. Likelihood of recolonization is relatively low, even if adjacent habitats are occupied.

Fun Facts

- Cascades frogs are able to recognize their own kin even when they're just tadpoles!
- Their call has been described as a quiet series of low, grating clucks. They call at night and during the day both from above and below water.
- Cascades frogs were one of the earliest amphibians to return to the area surrounding Mount St. Helens after it erupted in 1980
- This frog was considered a subspecies of *Rana pretiosa*, the Oregon spotted frog, until 1939

Conservation

Cascades frogs are an Oregon Conservation Strategy Species (Species of Greatest Conservation Need), and a Sensitive Species in Oregon. Populations have declined dramatically in the California portion of this species' range. In areas where Cascades frog do still occur, populations mostly consist of few individuals with either stable or declining trends. They are vulnerable to the effects of genetic isolation.

Cascades frogs are still abundant in the Klamath Mountains. Habitat management including forest fire suppression and grazing have accelerated the succession of trees into open meadows, altering habitat that the Cascades frog historically used and limiting habitat connectivity. Threats include changes in water availability due to changes in snow pack and melt, sedimentation due to livestock grazing, impacts from nonnative species, and possible waterborne pathogens.

Many frog species and their habitat are vulnerable to disturbance. To help in the conservation of Cascades frogs and other amphibians in wet meadows and other sensitive aquatic habitats, make sure that when you're out in nature you pack out all of your trash, avoid damaging or disturbing wetland habitats by staying on established trails, and keep your pets on leash. Many frogs are sensitive to chemicals that may be on your skin such as sunscreen and insect repellent, so it is important to avoid touching frogs or other amphibians.

For more information about the conservation status of Cascade frogs including special needs, limiting factors, data gaps, and conservation actions, refer to the Oregon Conservation Strategy.