

Species	Ecoregion(s)	Special needs	Limiting factors	Data gaps	Conservation actions
Cascades frog (<i>Rana cascadae</i>)	EC WC	Mountain meadows, bogs, ponds or potholes above 2,400 feet elevation. Lays eggs in shallow sunny edges of ponds, or on low vegetation near ponds where warm sunlight speeds egg development and spring rains allow hatchlings to swim into ponds. Larvae “school” in large masses.	Montane species vulnerable to genetic isolation. Experiencing substantial reductions in southern parts of range (e.g., CA).	Feeding habits. Possible effects of introduced fishes, pathogens, and airborne environmental pollution. Habitat characteristics that could enhance migration and gene flow. Feasibility studies on reintroduction at historic sites.	Maintain connectivity of habitat. Monitor effects of fish stocking and water quality on populations. Carefully manage livestock grazing in occupied wet meadows. Use prescribed burning or hand-felling of trees periodically to set plant succession. Reintroductions should use individuals from nearby populations; use results feasibility studies to guide further actions. Conservation actions in Oregon are particularly valuable given reductions in other parts of range.
Cascade torrent salamander (<i>Rhyacotriton cascadae</i>)	WC	Cold, fast-flowing, clear, permanent headwater streams, seeps and waterfall splash zones in forested areas. Gravel or small cobble substrate with continuous but shallow water flow for larvae and adults foraging and hiding. May only occur in streams on basalt rock. Continuous access to cold water.	Larvae take several years to reach sexual maturity. Small clutch size (7-16 eggs) and long time to hatch (up to 10 months). Larvae have minute gill surface area, so very sensitive to increased temperature and sediment.	Species-specific breeding habits (because of relatively recent taxonomic split of torrent salamanders). Dispersal	Maintain stream buffers to maintain cool water temperatures and water clarity. Little or no sediment coating or embedding rocky substrates. Replace culverts as needed to remove barriers in continuous, natural streambed and streambank habitats.
Clouded salamander (<i>Aneides ferreus</i>)	CR KM WC	Forest habitats or burned areas. Require large decaying logs, especially Douglas-fir	Limited range (occurs primarily in Oregon). Loss of large logs	Habitat relationships with burns; effects of fires on populations	Maintain large logs during forest management activities
Coastal tailed frog (<i>Ascaphus truei</i>)	CR KM WC	Cold, fast-flowing, clear streams within forested areas. Adults need streambanks, logs, headwater springs, and gravelly seeps for foraging and hiding, and small boulders in streams for egg laying. Tadpoles need permanent streams with moss- and sediment-free cobble and boulder substrate for clinging to rock surfaces while scraping diatoms and algae. <i>In Coast Range, may be limited to streams with hard-rock substrate rather than sandstone.</i>	Limited range (northwest endemic). Low reproductive rate due to several-year larval stage. Remains close to water source; low dispersal abilities may limit recovery of populations. Sedimentation. Increases in water temperature.	Growth rates after metamorphosis. Internal reproduction dynamics	Maintain stream buffers to maintain cool water temperatures and water clarity. Little or no sediment coating or embedding rocky substrates. Replace culverts as needed to remove barriers in continuous, natural streambed and streambank habitats.
Columbia spotted frog (<i>Rana luteiventris</i>)	BM NBR	Permanent ponds, marshes and meandering streams through meadows for breeding and foraging, especially with bottom layer of dead and decaying vegetation	Slow to reach reproductive maturity. Predation and competition by invasive fish and bullfrogs. Siltation. Lowering of water tables through down-cutting of stream channels	Impacts of invasive species, document dates/locales of past locales and survey to determine range status and trend. Impacts of grazing on habitat and populations.	Maintain vegetation buffers around known populations. Control bullfrogs and invasive fish at priority sites

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Columbia torrent salamander (<i>Rhyacotriton kezeri</i>)	CR	Cold mountain streams, spring heads and seeps. Require loose gravel stream beds with specific geologic characteristics. Specific requirements for stream gradients.	Limited dispersal. Adults are highly sensitive to drying. Larvae sensitive to changes in stream flow.	Distribution. Response to management activities at varied scales	Maintain stream buffers to maintain cool water temperatures and water clarity. Minimize disturbance at known suitable sites.
Cope's giant salamander (<i>Dicamptodon copei</i>)	CR WC	Cold, fast-flowing, clear, permanent streams in coniferous forests. Deep cobble and small boulder substrate for foraging and hiding. Rocky streambanks or in-channel logs with crevices for eggs and larvae.	Limited range in Oregon. Rarely or never metamorphose, so highly vulnerable to channel dewatering and barriers to stream connectivity; very small gill surface area, so sensitive to increases in temperature and sediment.	Information on reproduction (parental care, number of clutches per female per year). Frequency of naturally occurring terrestrial individuals	Maintain stream buffers to maintain cool water temperatures and water clarity. Little or no sediment coating or embedding rocky substrates. Replace culverts as needed to remove barriers in continuous, natural streambed and streambank habitats.
Foothill yellow-legged frog (<i>Rana boylei</i>)	CR KM WC WV	Slow-moving streams with coarse-substrate gravel bars, bedrock substrate with potholes, and low-flow backwaters	Range in Oregon has shrunk due to habitat loss from inundation and other hydrologic modifications. Loss of gravel bars and low-flow nursery areas. Sedimentation	Current distribution. Non-breeding season habitat. Identify overwintering habitat. Feasibility studies on reintroduction at historic sites. Compare population dynamics and natural history between populations towards center of range (Klamath Mountains ecoregion) and those that at the northern end of the range (Willamette Valley and West Cascades ecoregion).	Maintain natural water flow patterns and streamside vegetation and protect from other impacts at priority breeding sites. <i>Especially for populations in West Cascades and Willamette Valley: Use results of feasibility studies to guide specific conservation actions and management decisions for reintroductions.</i>
Inland tailed frog (<i>Ascaphus montanus</i>)	BM	Stream breeding. Prefer clear, cold habitat with cobbles and boulders for larvae, which are adapted to cling to rocks and scrape diatoms. Adults forage for insects at night	Low reproductive rate (multi-year larval development; small number of eggs per female). Sedimentation of streams from roads or forest practices; increased temperatures due to degraded riparian habitat	Population dynamics	Modify activities to provide continual riparian cover and minimize sedimentation; maintain shade for cooler temperatures
Larch Mountain salamander (<i>Plethodon larselli</i>)	WC	Basalt talus slopes of Columbia River Gorge and northern Cascade Mountains. Adapted to well-drained, gravel to small cobble-sized talus with a significant component of fine litter and debris. May occur in late-successional forest especially with gravel or fractured rock in the soil	Specialized habitat. Low dispersal capability. Relatively small clutch size. Pesticides or fertilizers can affect salamanders and their food supply	Distribution and abundance. Reproduction and nesting ecology. Location of southern edge of species range	Avoid disturbance of talus habitats (which can cause local extinctions); consider effects of potential ground-disturbing activities. Avoid use of pesticides adjacent to talus
Northern leopard frog (<i>Rana pipiens</i>)	NBR	Wet meadows, potholes, and riparian areas with high vegetative cover. Ponds and slow streams for hibernation	Predation by invasive bullfrogs. Habitat loss particularly at edge of range	Current distribution. Population trends. Habitat requirements. Effects of contaminants (pesticides, herbicides) on populations	Control bullfrogs at known nesting areas

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Northern red-legged frog (<i>Rana aurora</i>)	KM WV	Ponds and wetlands with shallow areas and emergent plants. Access to forested habitats (forested wetland, upland)	Loss of egg-laying habitat. Predation and competition by invasive fish and bullfrogs	Identify overwintering habitat. Clarify impacts of pollutants, ultraviolet radiation and parasites on populations.	Maintain wetland habitat with emergent plants. Maintain adjacent forested habitats. Control bullfrogs and invasive fish at key sites
Oregon slender salamander (<i>Batrachoceps wrightorum</i>)	WC	Late successional and second-growth forest where there are abundant mid to advanced decay stage, large diameter Douglas fir logs and bark debris mounds at the base of snags. Talus and lava fields that retain moisture. Can clump together in groups to remain damp.	Endemic to Cascade Mountains of Oregon. Restricted distribution; vulnerable to random events. Columbia River limits dispersal. Require habitat complexity characteristic of old-growth and unmanaged younger forests. High site fidelity for reproduction.	Maternal care, and life history. Habitat requirements. Effects of habitat fragmentation on genetics. Improved survey methods	Maintain habitat with late successional attributes suitable for this species.
Oregon spotted frog (<i>Rana pretiosa</i>)	EC WC	Permanent ponds, marshes and meandering streams through meadows for breeding and foraging, especially with shallow water and a bottom layer of dead and decaying vegetation. Springs and other sites with low, continuous water flow for overwintering	Slow to reach reproductive maturity. High fidelity to egg-laying sites. Predation and competition by invasive fish and bullfrogs. Siltation. Some populations are isolated and vulnerable to inbreeding and extinction. Livestock grazing removes cover along stream edges and allows sediment and excessive aquatic vegetation to decrease habitat value.	Impacts of invasive fish and bullfrogs. Documentation of historic sites, and current range status. Feasibility studies on reintroduction at historic sites.	Maintain vegetation buffers around known populations; control bullfrogs and invasive fish at priority sites. Carefully manage livestock grazing at occupied montane wet meadows. Install small predator exclosures over parts of isolated breeding sites. Use results of feasibility studies to guide specific conservation actions and management decisions for reintroductions.

Headwater Amphibians



Often secluded high in Oregon's mountains, headwater streams provide naturally outstanding water and habitat quality. In these often cool stream ecosystems, amphibians are cornerstone as both predators and prey. Several of Oregon's amphibians are specially adapted to life in the headwaters: Pacific giant salamanders, southern torrent salamanders, Columbia torrent salamanders,

and the unique tailed frog. All prefer large amounts of large, rocky substrate in the streams, with a substantial forest buffer nearby.

Tailed frogs, recently separated into two separate species (the coastal tailed frog in the mountains of western Oregon and the inland tailed frog in northeastern Oregon), are a true evolutionary relic. Unlike any other living frog, males have a protruding 'tail' that is used for reproduction. Tadpoles have oral discs designed for sucking diatoms (microscopic algae) from rocks and boulders. Females usually produce about 50 eggs per breeding season, and larvae spend at least a year in

the water before they metamorphose. At higher elevations, larvae can spend up to four years in the water and may require five to six additional years before they are sexually mature. These unique traits slow the reproductive rate and can make tailed frogs vulnerable to habitat changes.

