



SOUTH COAST CONSERVATION PROGRAM

Protecting and Restoring at Risk Species and Ecological Communities on BC's South Coast

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Oregon Spotted Frog

Rana pretiosa

Ranidae ("true frogs"), have smooth, moist skin, large, powerful legs and extensively webbed feet. Oregon Spotted Frog originally grouped with its close relative, Columbia Spotted Frog has shown significant declines across its entire range.



Adult William P. Leonard



Adult William Flaxington



Adult USFWS



Egg mass & tadpoles Andy O'Connor



Metamorphosing tadpoles Scott Barrett



Adult ventral colouration William P.
Leonard



Froglet Scott Barrett



Mating pair in "amplexis" k. Robbins



Juvenile R. Cloutier



Isabelle Groc

Characteristics

Snout to vent length 6-9 cm, females larger than males. Dorsal colour of adults ranges from reddish-brown to tan or olive with irregular-shaped black spots with light centers. An extensive, light- coloured stripe down extends along the upper lip to the shoulder. Light brown to orange “dorsolateral” folds extend from behind the eyes to the middle of back. Hind legs have black, mottled striping or blotching. Ventral colouration ranges from cream on the lower jaw transitioning to a rust orange colour on the chest, belly, upper and lower legs all the way to tips of the toes. Some individuals have heavy olive mottling throughout the ventral areas with only small amounts of rust colouration on the ventral area of each leg. No mottling is found in the groin areas. Webbing on the hind feet is extensive, extending to almost the tip of each toe. Oregon Spotted Frog have relatively short hind legs. Males develop a “nuptial pad” on each thumb to assist in gripping females (“amplexus”) during breeding. The snout is pointed and eyes are turned upward laterally. Juveniles are olive-green or light brown and lack the bright ventral colouration, large spots and blotches on the hind legs. The olive-brown tadpoles have a tail about twice the length of the body, with a colourless tailfin containing scattered flecks. Belly is white or slate in colour and small raised bumps on the side.

Status

Global Status:	G2
Provincial Status:	S1
SARA Status:	Endangered
BC List Status:	Red (Candidates for- Extirpated, Endangered, or Threatened status)

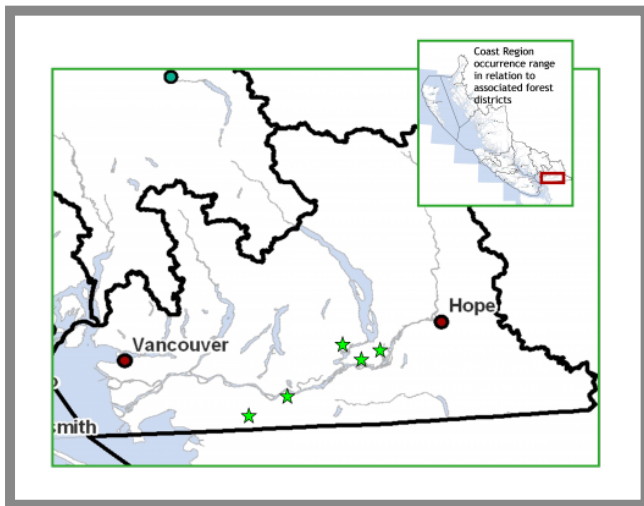
Similar Species



Northern Red-legged Frog Walter Siegmund wiki

Oregon Spotted Frog shares distribution with other “Ranid” frogs including Northern Red-legged Frog, Green Frog and Bullfrog. Coloured ventral area on Northern Red-legged Frog tends to be a distinct bright red while Oregon Spotted Frog is more of a dark, rust-orange colour. Northern Red-legged Frog tadpoles have yellow to washed out red bellies with gold flecks while Oregon Spotted Frog tadpoles have white or slate coloured bellies. Oregon Spotted Frog tends to sit with its belly low to the ground while most other Ranid species sit upright. The upturned eyes and extensive webbing on the hind feet are key diagnostics for Oregon Spotted Frog. Skin on legs is opaque, as opposed to Northern Red-legged Frog where skin is transparent with muscles / bones visible through skin

Range



Ecology

Elevation: <50m (unlikely to occur over 200m in BC, found up to 1700m in Oregon). Oregon Spotted Frog populations have declined 70-90% across their range OR, WA, southwest BC, and are extirpated from California. In BC, there is a handful of disjunct populations and at least 50% of populations have become extirpated. This may be closer to 90% as many populations may have gone unreported historically. Sightings are from the Salmon River headwaters area

Langley/Aldergrove), Maria Slough (Seabird Island), Matsqui Prairie (north Abbotsford), Mountain Slough (District of Kent), and Morris Valley (District of Kent). Three known extirpated populations occurred in Campbell Valley Regional Park (Langley), Nicomen Island and Sumas Prairie (Chilliwack).

Captive breeding programs have been underway for a number of years. Release programs to existing and restored sites on Seabird Island and Aldergrove have been ongoing since 2003 with goals to establish approximately 20 viable populations in BC.

Habitat

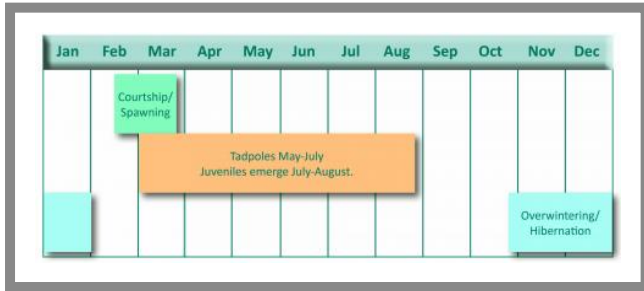
Oregon Spotted Frog is typically associated with medium to large wetlands (>4 ha), that are shallow, slow moving and support abundant native emergent vegetation (e.g. grasses, sedge and rush). Slow moving streams and sloughs with sufficient vegetation attributes may also be used. Mixed forests are often found in association with upland perimeter areas. In Washington, frogs moved to deeper permanent pools during dry periods. During cold periods or when ice cover occurs, frogs will burrow into soft substrate at the base of vegetation. Oregon Spotted Frog may venture into adjacent forests or shrub thickets when water levels are high and surrounding areas have moist saturated soils. While shallow wetlands are often subject to seasonal fluctuations in inundation levels, those that support Oregon Spotted Frog populations typically have a component of permanent water. Water Temperature is a key factor in habitat use, most populations are found in wetland complexes that warm substantially during periods when frogs are most active at the surface (spring through fall), though activity may begin in late winter at temperatures as low as -5°C. Wetlands that cover larger areas tend to support larger frog populations. Different areas within a wetland appear to be used for breeding and non-breeding. Breeding sites are generally associated with seasonally flooded, shallowly sloping

benches that are vegetated with the previous year's emergent vegetation and have low shade."

Diet

An opportunistic feeder, this species feeds while floating at the surface, consuming a wide variety of insects as well as snails, freshwater shrimp, spiders. In Oregon adults have been known to predate on juvenile Western Toad. Tadpoles graze on algae, organic debris and plant tissue.

Life Cycle



Adult females lay a single egg mass per year. Eggs are laid communally during mid-afternoon and at night, sometimes on top of each other.

Threats

- Habitat loss from draining and infilling of wetlands, and hydrological disruption of surface and groundwater due to urbanisation.
- Egg mortality from vulnerability of breeding sites (large shallow wetlands) to fluctuating water levels causing stranding and washing away of egg masses. May become an increasing issue with climate change.
- Population isolation and reduced dispersal of remaining populations.
- Disturbance of hydrological processes and isolation of populations due to roadways.
- Predation by introduced Bullfrog and potential competition impacts from Green Frog
- Habitat alteration from invasion of non-native plant species (e.g. species of reed canary grass).
- Cumulative impacts from disease. Chytridiomycosis, caused by the chytrid fungus *Batrachochytrium dendrobatidis*, has been linked to dramatic population declines or even extinctions of amphibian species in western North America and has been found to occur w
- Sensitivity to water chemistry (i.e. conductivity), especially during embryonic development. This species may require specific conditions for optimal reproductive success.
- Sensitivity to water chemistry (i.e. conductivity), especially during embryonic development. This species may require specific conditions for optimal reproductive success.
- Direct mortality or sub-lethal impacts throughout all life history phases from fertilizer and pesticide applications in urban and agricultural areas as well as for silviculture management.

Conservation and Management

Please consult the Recovery Strategy for the Oregon Spotted Frog (*Rana pretiosa*) in Canada (2015), and "Develop with Care's BMP's for Amphibians and Reptiles in Urban and Rural Environments in British Columbia". Complementary objectives can be found in "A Conservation Assessment for the Oregon Spotted Frog *Rana pretiosa*" through the USDA Forest Service Region 6 and USDI Bureau of Land Management, Oregon and Washington. Inventory and monitoring resources include standardized methods (Resource Information Standards Committee) # 37 Inventory Methods for Pond-breeding Amphibians and Painted Turtle (Version 2.0)", "Measuring and Monitoring Biological Diversity - Standard Methods for Amphibians", "Suitability of Amphibians and Reptiles for Translocation" and amphibian survey methodologies developed for the "Wetlandkeepers Handbook".

Resources

[Predation by Oregon Spotted Frogs \(*Rana pretiosa*\) on Western Toads \(*Bufo boreas*\) in Oregon](#)

[Habitat associations of the Oregon spotted frog \(*Rana pretiosa*\): A literature review. Final Report](#)

[Pocket Identification Guide to Frogs and Toads in the Fraser Valley](#)

A handy guide to our local frogs developed by Monica Pearson of Balance Ecological (excludes Pacific Tailed Frog).

South Coast Frogs and Toads ID Guide (with egg masses)

South Coast ID guide for common and at risk amphibians, including identification tips for egg masses.

Defining Conservation-relevant Habitat Selection by the Highly Imperiled Oregon Spotted Frog, *Rana pretiosa*

Results from captive-reared animals corroborate findings from habitat-selection studies that used wild-collected animals. Differences in selection at the macrohabitat scale between years suggest that a wide range of wetland types could be considered as candidates for reintroduction efforts. Our results emphasize the need for methods that transcend site-specific floristic differences among wetlands to inform potential reintroduction sites and guide habitat restoration activities.

For further information see

Washington Herp Atlas

BC Frogwatch Program

Save the frogs

BC Species and Ecosystems Explorer: Species and Ecosystems Search

A source for authoritative conservation information on thousands of plants and animals and hundreds of ecological communities in BC. From here connect to all provincial and federal recovery plans (including the SARA Registry), COSEWIC (Committee on the Status of Endangered Wildlife in Canada), Identified Wildlife guidance and conservation requirements for specific species and ecological communities of conservation concern impacted by forestry activities) and links to E-Flora and E-Fauna (the Electronic Atlas of the Plants and Wildlife of British Columbia).

Develop With Care Guidelines (see BMP's for Herptiles)

Environmental guidelines for urban and rural land development in BC.

Species at Risk & Local Governments a Primer for BC

Learn what species are at risk in your area, search by name, habitat type, regional district and forest district.

Sources

BC Conservation Data Centre. 2011. [Internet] [Updated December 15 2010] Conservation Status Report: *Rana pretiosa*. BC MoE. -

BC Frogwatch Program. 2010. [Internet] Environmental Stewardship Division. BC Ministry of Environment. -

BC Ministry of Environment. 2012. [Internet] Canadian Oregon Spotted Frog Recovery Team. 2012. Recovery strategy for the Oregon Spotted Frog (*Rana pretiosa*) in British Columbia. Victoria, BC. 59 pp. -

BC Ministry of Environment Lands and Parks. Resources Inventory Branch 1998. [Internet] Inventory Methods for Pondbreeding Amphibians and Painted Turtle (Version 2.0). Standards for Components of British Columbia's Biodiversity No. 38. -

California Herps.com 2011. [Internet] Oregon Spotted Frog *Rana pretiosa*. -

Haycock, R.D. 2000. COSEWIC status report on the Oregon spotted frog *Rana pretiosa* in Canada, in COSEWIC assessment and status report on the Oregon spotted frog *Rana pretiosa* in Canada Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 47 pp. -

Cushman, Kathleen. A and Christopher A. Pearl. 2007. [Internet] A Conservation Assessment for the Oregon Spotted Frog (*Rana pretiosa*). March 2007, USDA Forest Service region 6. -

Environment Canada. 2015. Recovery Strategy for the Oregon Spotted Frog (*Rana pretiosa*) in Canada. *Species at Risk Act* Recovery Strategy Series. Environment Canada, Ottawa. 21 pp. + Annex.

Germano, J.M. and P.J. Bishop. 2008. [Internet] Suitability of Amphibians and Reptiles for Translocation. *Conservation Biology* 23:7-15. -

- Hayes, Mark P. et al. 2009. [Internet] Amphibian Chytridiomycosis in the Oregon Spotted Frog (*Rana pretiosa*) in Washington state USA. *Northwestern Naturalist* 90:148–151. -
- Hayes, Mark P. et al. 2005. [Internet] Exploratory Evaluation of Nutrient Enrichment and Frog Response at Conboy Lake National Wildlife Refuge. Environmental Contaminants On-Refuge Investigation Project ID: 1N56. -
- Heyer, W.R., et al. 1994. *Measuring and Monitoring Biological Diversity. Standard Methods for Amphibians*. Smithsonian Institution Press, Washington. -
- Matsuda, B.M. 2002. [Internet] *The Wetlandkeepers Handbook: Section 5, Module 2.4. Conducting an Amphibian Inventory*. BC Wildlife Federation, Surrey, BC. -
- McKibbin R, et al. 2008. The influence of water quality on the embryonic survivorship of the Oregon Spotted Frog (*Rana pretiosa*) in British Columbia, Canada. *Science of the Total Environment*. 395: 28-40. -
- Nathan, D. et al. 2007. [Internet] Oregon Spotted Frog (*Rana pretiosa*) Movement and Demography at Dilman Meadow: Implications for Future Monitoring. USGS Forest and Rangeland Ecosystem Science Center. -
- Olson, D.H., Leonard, W.P., Bury, R.B. 1997. *Sampling Amphibians in Lentic Habitats: Methods and Approaches for the Pacific Northwest*. Northwest Fauna Number 4. Society for Northwestern Vertebrate Biology, Olympia, WA. -
- Oregon Fish and Wildlife Office. 2011. [Internet] Species Fact Sheet Oregon spotted frog *Rana pretiosa*. -
- Ovaska, Kristiina et al. 2004. [Internet] Best Management Practices for Amphibians and Reptiles in Urban and Rural Environments in British Columbia. BC Ministry of Water, Land and Air Protection. Nanaimo. -
- Pearson, Monica. 2010. [Personal comm.] South Coast Oregon Spotted Frog Recovery Project. BC Conservation Foundation. -
- Sielecki, Leonard E. 2010. [Internet] Wildlife identification field guide: red and blue listed amphibians and reptiles in British Columbia. -
- Pearl, C. A, and M. P. Hayes. 2004. [Internet] Habitat associations of the Oregon spotted frog (*Rana pretiosa*): A literature review. Final Report. Washington Department of Fish and Wildlife, Olympia, Washington, USA. -
- Proulx, Gilbert et al. 2003. *A Field Guide to Species at Risk in the Coast Forest Region of British Columbia*. Published by International Forest Products and BC Ministry of Environment. Victoria (BC). -
- Washington Herp Atlas, 2009. [Internet] Oregon Spotted Frog *Rana pretiosa*. Washington Natural Heritage Program, Washington Dept. of Fish & Wildlife, U.S.D.I. Bureau of Land Management and US Forest Service

Credits

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Source URL: <http://sccp.ca/species-habitat/oregon-spotted-frog>

Links

[1] <http://www1.dnr.wa.gov/nhp/refdesk/herp/>

[2] <http://www.env.gov.bc.ca/wld/frogwatch/>

[3] <http://savethefrogs.com/amphibians/rana-pretiosa.html>

[4] <http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/explore-cdc-data/species-and-ecosystems-explorer>

[5] <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-standards-and-guidance/best-management-practices>

[6] <http://www.speciesatrisk.bc.ca/>

[7] <http://www.sfiprogram.org/>

[8] <mailto:info@sccp.ca>