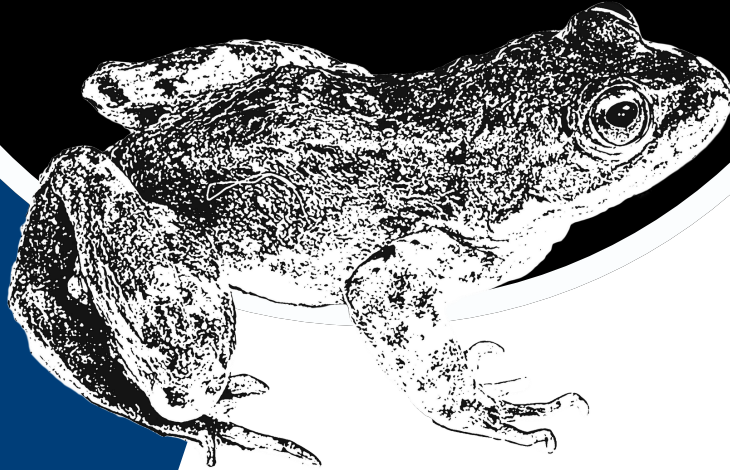




FRASER VALLEY
CONSERVANCY

FROG & TOAD TADPOLE

Identification Guide



Author: Jennifer Barden

Updated: October 17, 2024

from low-elevation wetlands of
the Fraser Valley, BC



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What this Guide Covers

This document provides guidelines for identifying frogs, from tadpole to juvenile, in the low-elevation wetlands of the Lower Fraser Valley of British Columbia. It focuses on features that differentiate similar species.

The main focus of this guide is on two native ranid frogs that are similar and easily confused: the Endangered **Oregon Spotted Frog** (*Rana pretiosa*) and the Threatened **Northern Red-Legged Frog** (*Rana aurora*).

Commonly encountered native species mentioned in this guide are the **Western Toad** (*Anaxyrus boreas*) and the **Pacific Treefrog** (*Pseudacris regilla*). Both are found in a wide variety of wetland habitats and forested habitats in the Fraser Valley. Non-wetland species like the **Coastal Tailed Frog** (*Ascaphus montanus*), found in steep mountain streams, are not covered in this guide.

Invasive **American Bullfrogs** (*Lithobates catesbeianus*) and **Green Frogs** (*Lithobates clamitans*) are now common in the Fraser Valley and are also mentioned in this guide.



Glossary

Common terms you may need to know

Term	Definition	Term	Definition
Dorsal	Top view	Mottled	Random markings or a pattern of different darker and paler shades
Ventral	Underside or belly view	Blotched	Multiple, irregularly shaped spots, relatively large
Lateral	Side view	Speckled	Many small marks, whether randomly or uniformly arranged.
Dorsolateral Ridge	Twin raised lines of skin running down the back or dorsal surface	Spots	Roughly circular markings, smaller and more uniform than mottling.
Dorsolateral Fold	Twin raised lines of skin that fold behind the tympanum	Reticulated	Marked like a net or network.
Tympanum	Behind the eye; functions similar to an eardrum for frogs	Tail Musculature	The trunk or muscular part of the tail
Opaque	Not able to be seen through; not transparent	Tail Fin	The thin part of the tail surrounding the tail musculature

Species Acronyms

Acronym	Definition	Acronym	Definition
RAPR	<i>Rana pretiosa</i> ; Oregon Spotted Frog	LICA	<i>Lithobates catesbeianus</i> ; American Bullfrog
RAAU	<i>Rana aurora</i> ; Northern Red-Legged Frog	ANBO	<i>Anaxyrus boreas</i> ; Western Toad
LICL	<i>Lithobates clamitans</i> ; Green Frog	PSRE	<i>Pseudacris regilla</i> ; Pacific Treefrog

OTHER WETLAND FROG SPECIES



*Not Oregon Spotted Frog
or Northern Red-legged Frog*



Green Frog

(Lithobates clamitans, LICL)



American Bullfrog

(Lithobates catesbeianus, LICA)



Western Toad

(Anaxyrus boreas, ANBO)



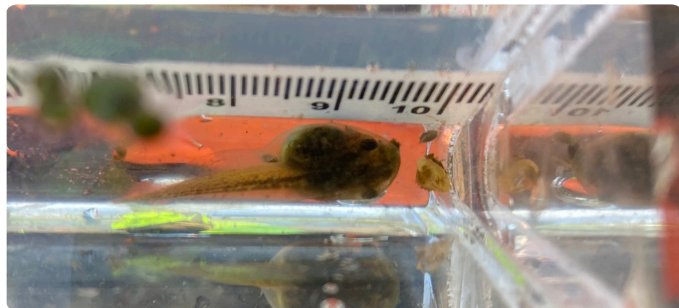
Pacific Treefrog

(Pseudacris regilla, PSRE)



Tadpoles

Pacific Treefrog (*Pseudacris regilla*, PSRE)



Mouth small, oriented forwards. Body < 20mm, pale rounded belly, short tail. Eyes protrude beyond body line when viewed from above.

Western Toad (*Anaxyrus boreas*, ANBO)



Very small and dark with uniformly black or charcoal tail trunk and body. Tail fins are translucent or cloudy. Usually in large congregations.

Green Frog (*Lithobates clamitans*, LICL)



Dark brown to black. Upper and lower fin mottled.

American Bullfrog (*Lithobates catesbeianus*, LICA)



Dorsal fin and tail muscles spotted with distinct dots, ventral fin often unmarked.

When this Life Stage Occurs (by Month)



*This timeline is approximate and depends on weather, habitat type, elevation, and habitat suitability. Yellow = present.

Late-Stage Tadpoles & Metamorphs

Pacific Treefrog (*Pseudacris regilla*, PSRE)



Variable dorsal patterns becoming visible. Round toe pads clearly visible.

Western Toad (*Anaxyrus boreas*, ANBO)



Bumpy texture to skin visible. Less black over time. Dorsal stripe visible in adults is starting to develop.

Green Frog (*Lithobates clamitans*, LICL)



Olive green to brown with dark blotches; cream ventral surface and mottled green to brown tail.

**Metamorphs already have a developing dorsolateral ridge.*

American Bullfrog (*Lithobates catesbeianus*, LICA)



Brown, green, olive colour with blotches; cream to yellow ventral surface. Clear and small spots on dorsal surface and dorsal tail fin. Some metamorphs have visible spots even when tail is absorbed.
**Metamorphs do not have a dorsolateral ridge.*

When this Life Stage Occurs (by Month)

J	F	M	A	M	J	J	A	S	O	N	D	PSRE	J	F	M	A	M	J	J	A	S	O	N	D	LICA
J	F	M	A	M	J	J	A	S	O	N	D	ANBO	J	F	M	A	M	J	J	A	S	O	N	D	LICL

**This timeline is approximate and depends on weather, habitat type, elevation, and habitat suitability. Yellow = present.*

Juveniles

Pacific Treefrog (*Pseudacris regilla*, PSRE)



Variable dorsal colouration and patterns (green, brown, grey etc.). Dark “mask” extending from nostril to shoulder.

Western Toad (*Anaxyrus boreas*, ANBO)



Bumpy skin, paratoid (toxin) gland behind the eye visible but small; dorsal stripe visible on adults is present but not always clear in juveniles.

Green Frog (*Lithobates clamitans*, LICL)



Dorsolateral ridge extends from behind the eye to the hip. Clear, large tympanum compared to native species.

American Bullfrog (*Lithobates catesbeianus*, LICA)



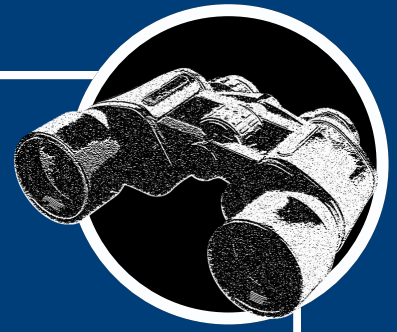
Dorsolateral fold tucks behind the tympanum. Clear, large tympanum compared to native species.

If the frog has a prominent tympanum (eardrum) it is an American Bullfrog or a Green Frog, both invasive species in the Fraser Valley. In adults, the tympanum get to be the size of the eye or larger.

When this Life Stage Occurs (by Month)

J	F	M	A	M	J	J	A	S	O	N	D	PSRE	J	F	M	A	M	J	J	A	S	O	N	D	LICA
J	F	M	A	M	J	J	A	S	O	N	D	ANBO	J	F	M	A	M	J	J	A	S	O	N	D	LICL

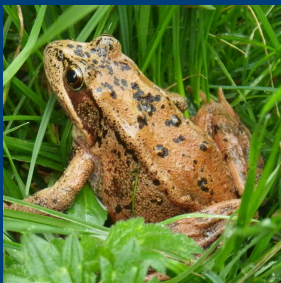
**This timeline is approximate and depends on weather, habitat type, elevation, and habitat suitability. Yellow = present.*



Differentiating Between Two Similar Species



**Oregon
Spotted Frog**
(*Rana pretiosa*, RAPR)



**Northern
Red-Legged Frog**
(*Rana aurora*, RAAU)



Early-Stage Tadpoles

The two main diagnostic features to help differentiate between Oregon Spotted Frog and Northern Red-legged Frog tadpoles are ventral surface pattern (not colour) and tail pattern (not colour)

Oregon Spotted Frog

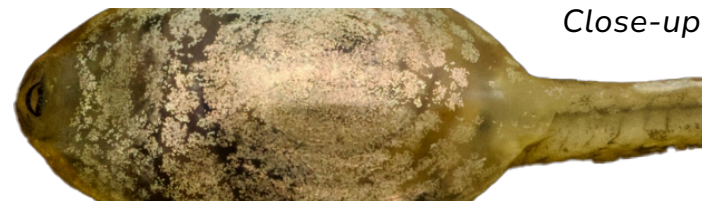
(*Rana pretiosa*, RAPR)

Northern Red-Legged Frog

(*Rana aurora*, RAAU)



Close-up



Close-up

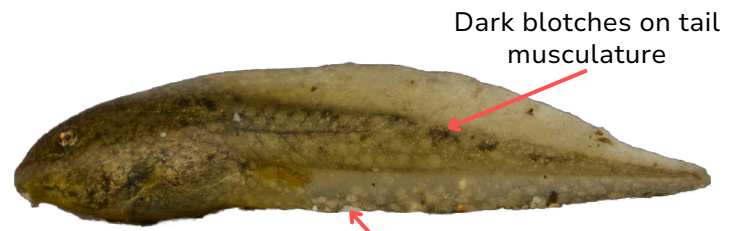
Ventral surface has fine-grained markings or speckles; can be a pale off-white to cream-colour.

Ventral surface is mottled with irregularly shaped pigmented blotches on a dark background.



Speckling

Tail fin has dark speckles. No large blotches on the tail.

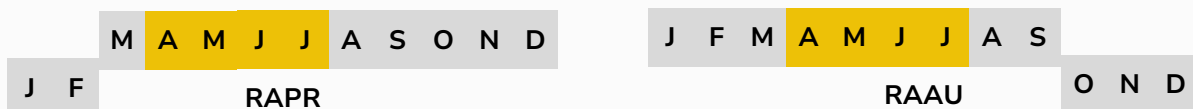


Dark blotches on tail musculature

Light, rounded spots

Tail fin has round light-coloured spots and the tail has dark blotches.

When this Life Stage Occurs (by Month)



*This timeline is approximate and depends on weather, habitat type, elevation, and habitat suitability

Early-Stage Tadpoles

Oregon Spotted Frog
(*Rana pretiosa*, RAPR)

Northern Red-Legged Frog
(*Rana aurora*, RAAU)

Younger Tadpoles
(~2 weeks post-hatching)



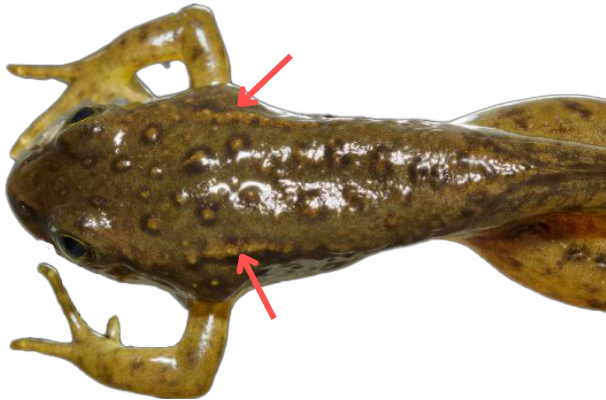
Older Tadpoles
(>7 weeks post-hatching)



(Photo angles from top to bottom: ventral, dorsal and lateral views)

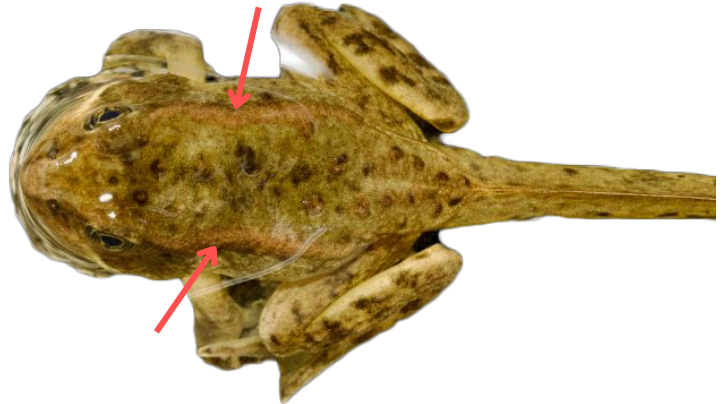
Late-Stage Tadpoles and Metamorphs

Oregon Spotted Frog
(*Rana pretiosa*, RAPR)

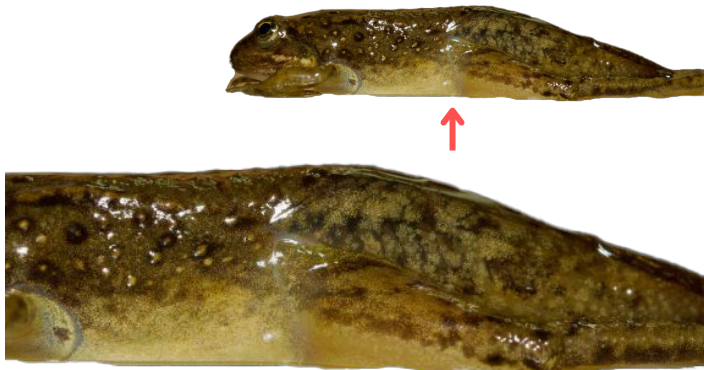


Dorsolateral ridges a little behind the eye, has a bumpy texture and breaks up closer to the hip. Colour varies.

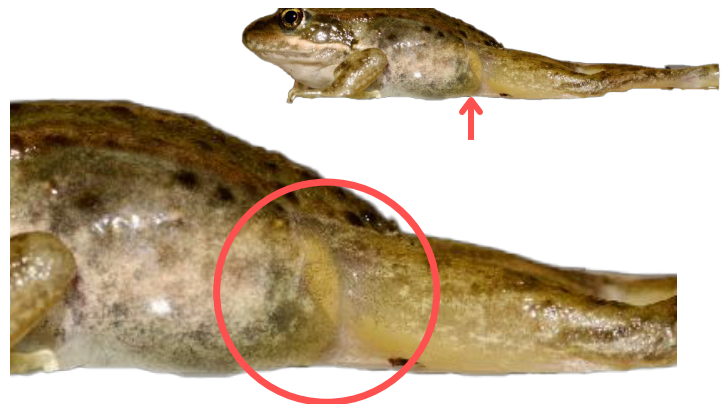
Northern Red-Legged Frog
(*Rana aurora*, RAAU)



Dorsolateral ridges are prominent from the eye to the hip. Colour varies.



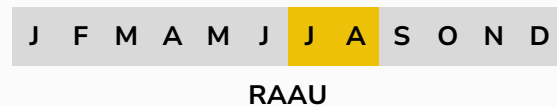
No yellow hip patch; not diagnostic at this life stage.



Yellow hip patch starting to develop; not diagnostic at this stage.

Note: that distinct 'harness' shaped pattern on chest (per Corkran & Thoms 2006) is *NOT* indicative of species, and is present on all recently-metamorphosed ranid individuals.

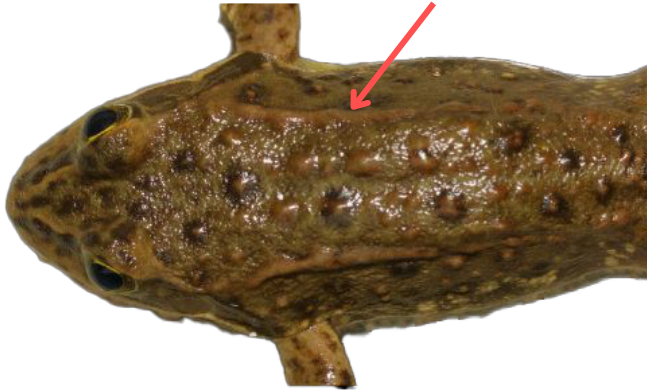
When this Life Stage Occurs (by Month)



**This timeline is approximate and depends on weather, habitat type, elevation, and habitat suitability*

Juveniles

Oregon Spotted Frog (*Rana pretiosa*, RAPR)

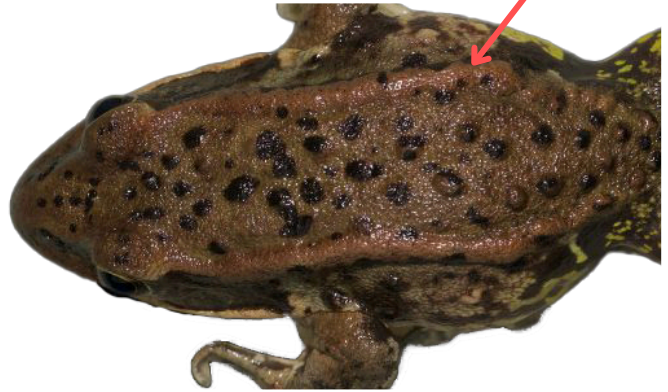


Dorso-lateral ridges a little behind the eye, has a bumpy texture and breaks up closer to the hip. Colour varies.



Spots have a dark ring around a lighter center. Raised bumps on the dorsal and lateral surfaces.

Northern Red-Legged Frog (*Rana aurora*, RAAU)



Dorso-lateral ridges are prominent from the eye to the hip and are smooth. Colour varies.



Dark blotches. Skin has a smooth texture.

When this Life Stage Occurs (by Month)



RAPR

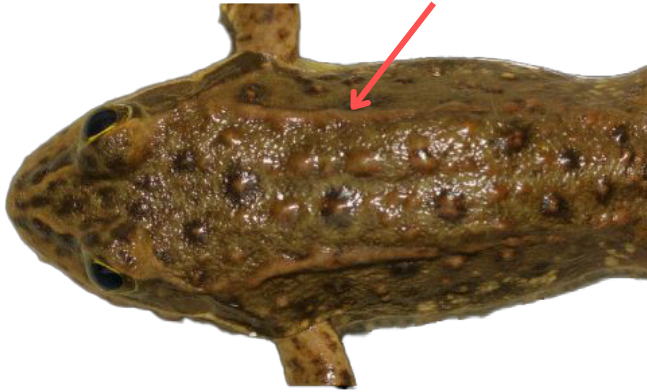


RAAU

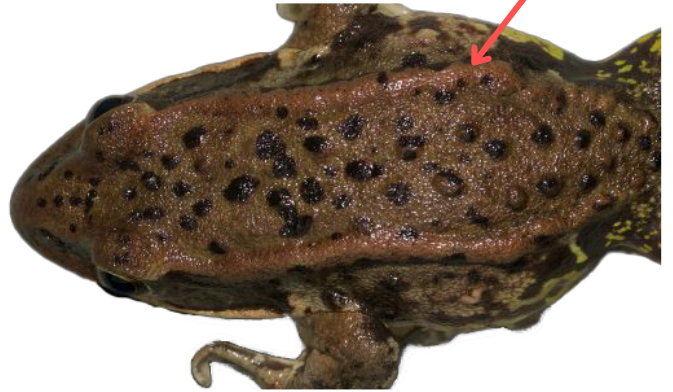
**This timeline is approximate and depends on weather, habitat type, elevation, and habitat suitability*

Once the next year's tadpoles have hatched, the juveniles from the previous year are called "young of year".

**Oregon
Spotted Frog**
(*Rana pretiosa*, RAPR)



**Northern
Red-Legged Frog**
(*Rana aurora*, RAAU)



Juveniles

Oregon Spotted Frog

(*Rana pretiosa*, RAPR)



Ventral surface is mottled grey-white to bright red. Ventral surface is mottled and some individuals have red to orange colouration.

Northern Red-Legged Frog

(*Rana aurora*, RAAU)



Ventral surface is off-white or cream with no spotting and no colouration. Mottled bright yellow patches on sides at hip.



Colour ranges from white to red. Cannot see through to bone and muscle. Skin of legs starts to become opaque during juvenile lifestage but is only diagnostic for adults.



Skin of legs translucent, pink with gold and yellow flecks. Bone, muscle, and ligaments visible. Only diagnostic for adults, but this is when these features start to become apparent.

Juveniles

Oregon Spotted Frog

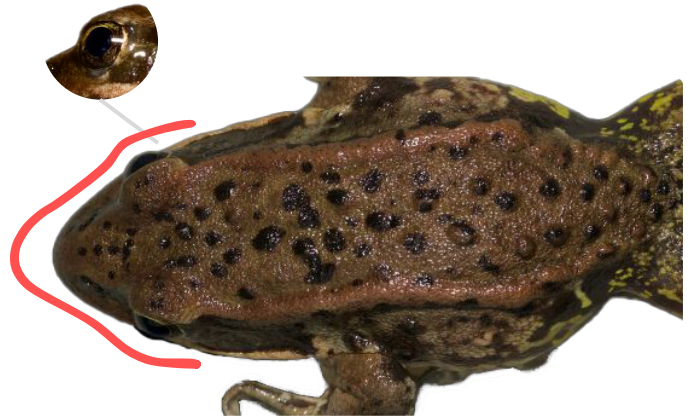
(*Rana pretiosa*, RAPR)



From above, eyes do not (or only slightly) protrude beyond body line. Eyes also point upward rather than outward. Snout is rounded.

Northern Red-Legged Frog

(*Rana aurora*, RAAU)



From above, eyes protrude beyond the body line, and point outward rather than upward. Snout is more pointed.

Eye orientation, snout shape and eye colour are hard to use as identifiers in the field. Depends on lighting and the angle the frog is being held.



No yellow hip patch. The hip area is off-white or cream with darker mottling. Mottled pattern, not colour, is consistent from knee to hip.



Bright yellow hip patch present. Patch is yellow with dark blotches or mottling. Diagnostic at this stage (Late August - September in the Fraser Valley)

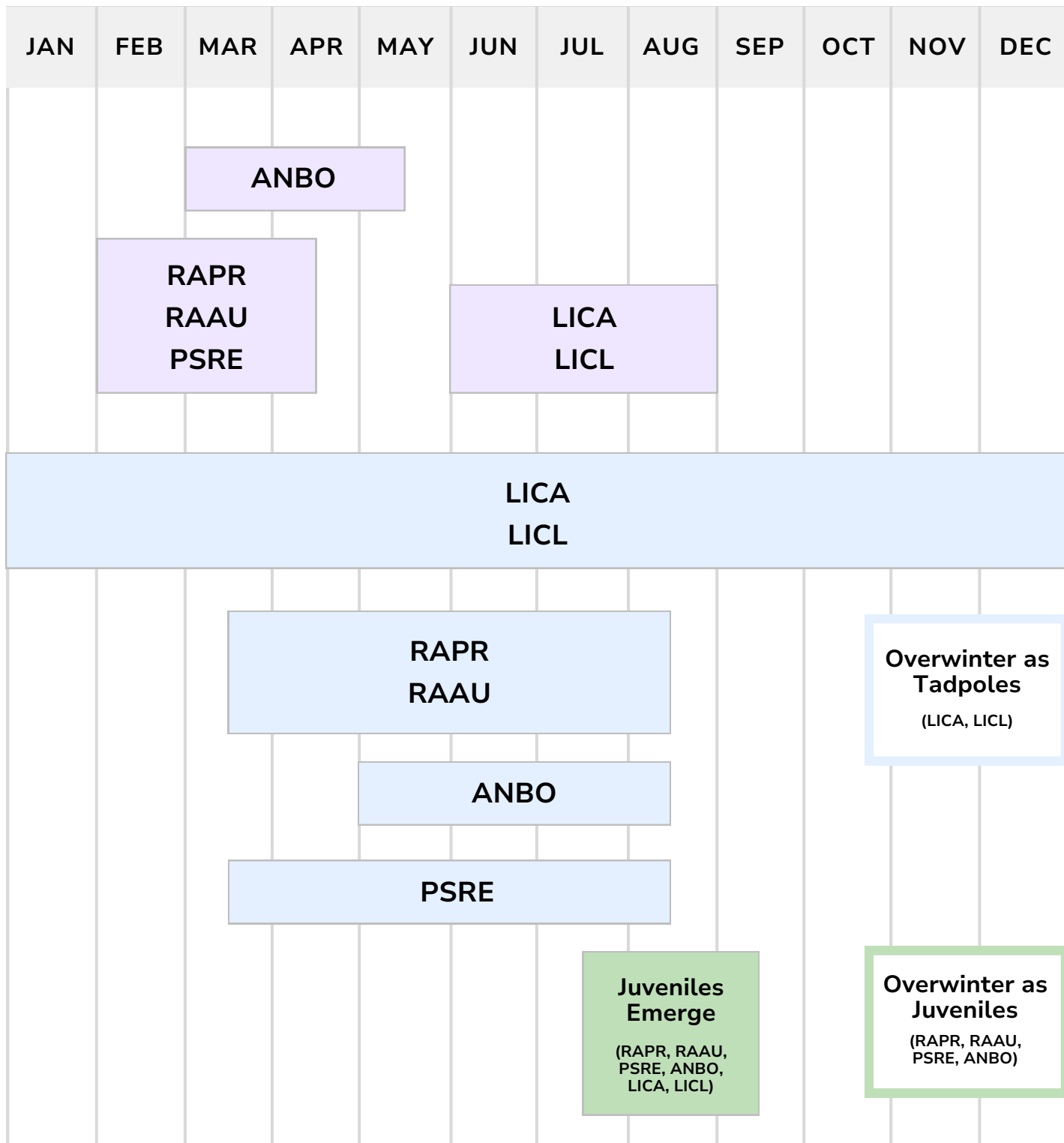
Note: that distinct 'harness' shaped pattern on chest is *NOT* indicative of species, and is present on all recently-metamorphosed individuals.

If you suspect you have found an Oregon Spotted Frog, please take photographs of the frog from the top, side with leg extended, and its underside. Forward photos and location information (with coordinates, if possible) to:

info@fraservalleyconservancy.ca.

You may have found a new population!

Growth Timeline



Egg Mass
 Tadpoles
 Juveniles

RAPR
Oregon Spotted Frog
Rana pretiosa

RAAU
Northern Red-Legged Frog
Rana aurora

ANBO
Western Toad
Anaxyrus boreas

PSRE
Pacific Treefrog
Pseudacris regilla

LICA
American Bullfrog
Lithobates catesbeianus

LICL
Green Frog
Lithobates clamitans



PHOTO SUMMARY

*Full page comparisons of Oregon
Spotted Frog and Northern Red-
legged Frog from tadpole to juvenile*

Oregon Spotted Frog

Northern Red-Legged Frog

May 3, 2023



May 24, 2023



- 1 Ventral surface off-white to cream with fine-grained speckles
- 2 Belly mottled with irregular pigment
- 3 Tail fin has speckles but no light spots
- 4 Tail fin has light spots starting to become evident. Dark blotches on the tail.
- 5 Speckling becoming more obvious
- 6 Light, rounded spots on the tail fin and dark blotches on the tail

June 21, 2023



Photos not always to scale, they may be zoomed in to highlight features

Oregon Spotted Frog

July 12, 2023



Northern Red-Legged Frog

2

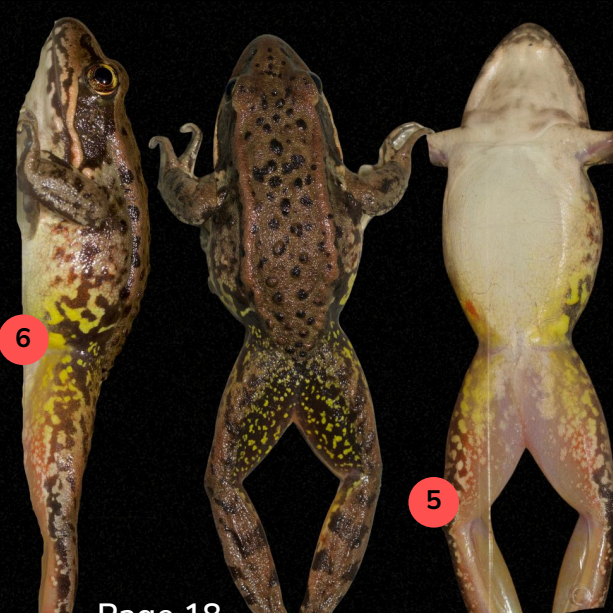


July 26, 2023



- 1 No yellow at hip
- 2 Mottled yellow hip developing
- 3 Ventral Surface mottled grey-white with orange to red colouration starting to develop on some individuals
- 4 Skin of legs varies in colour from white to red and starts to become opaque. Only diagnostic for adults.
- 5 Skin of legs translucent, bone, muscle & ligaments are visible. Only diagnostic for adults.

August 30, 2023



- 6 Yellow hip patch is very distinct and visible from all angles

Photos not always to scale, they may be zoomed in to highlight features

Oregon Spotted Frog



August 30, 2023

1 Dorsolateral ridge starts a little behind the eye and breaks up close to the hip

2 Yellow hip patch

3 Dorsolateral ridge starts right behind the eye and continues all the way to the hip

Northern Red-Legged Frog



Photos not always to scale, they may be zoomed in to highlight features