



Amphibians of the Northwest

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Washington Department of Fish & Wildlife

Including slides modified from Lameace Hussain, Dr. Katie Holzer, & Dr. Marc Hayes

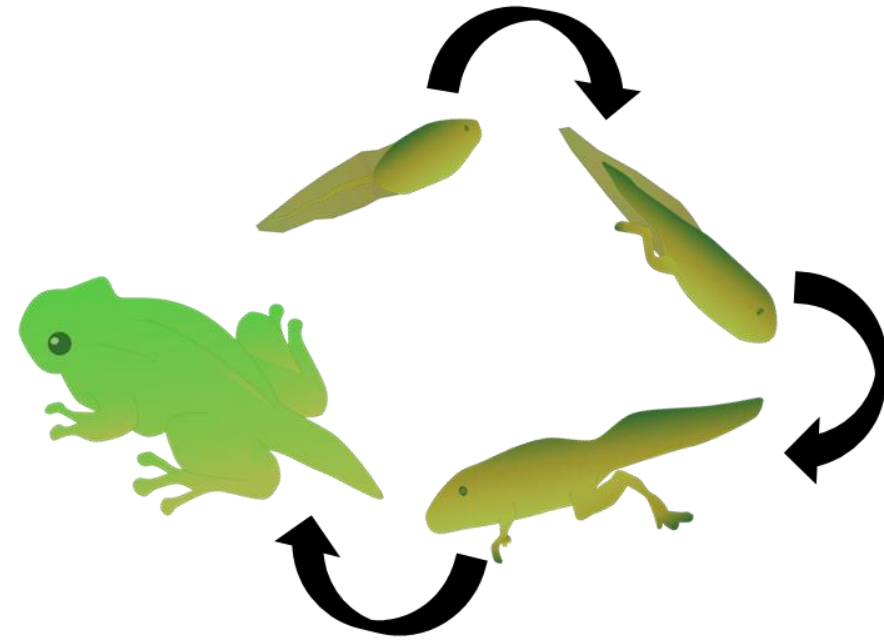


Today

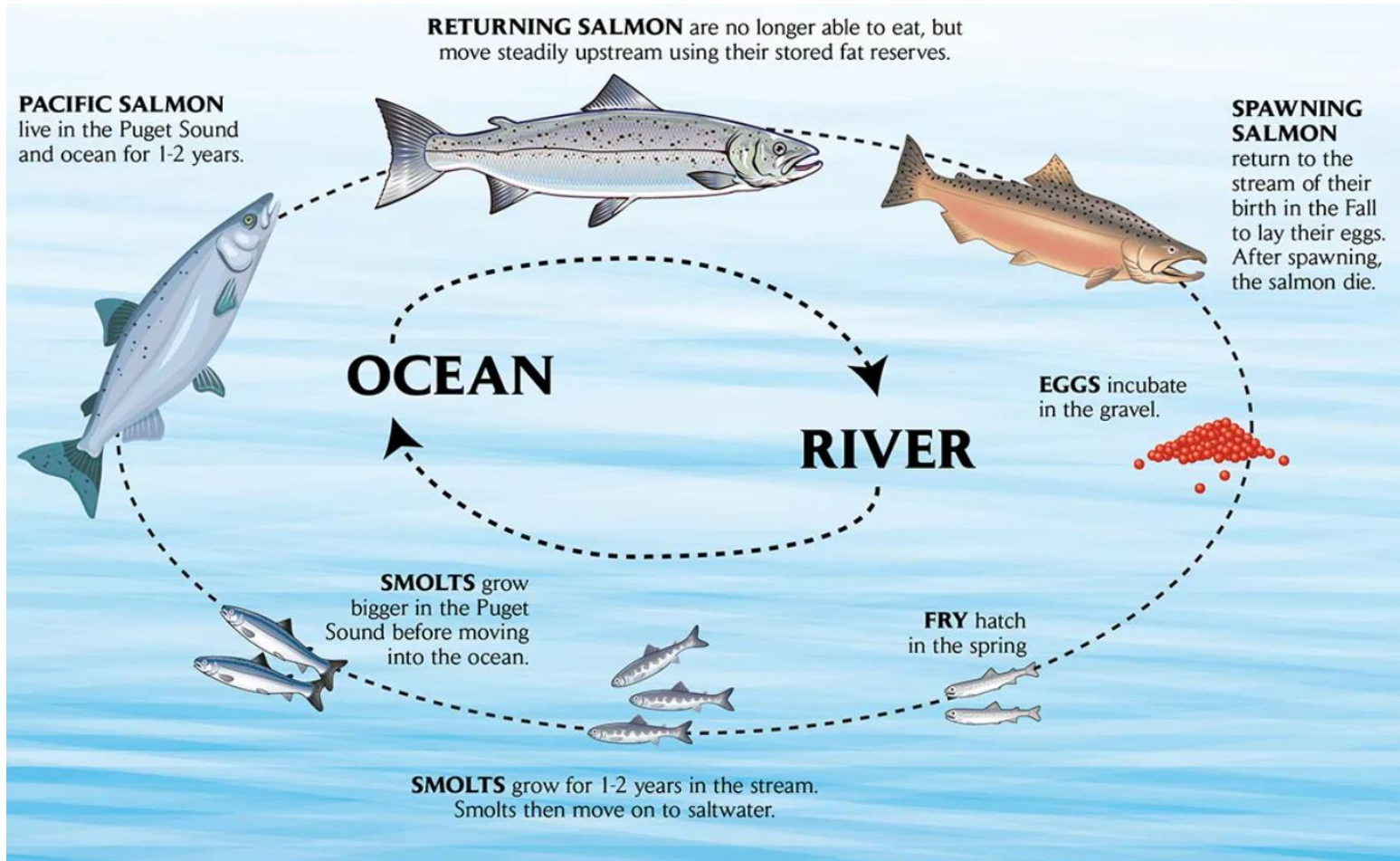
- Why are amphibians interesting and important?
- What amphibian resources are available to you?
- What are amphibians?
- What amphibians are around us and what to know about them?
- What amphibians are introduced around us?
- How do we help amphibians near us?

Amphibians are just little salmon

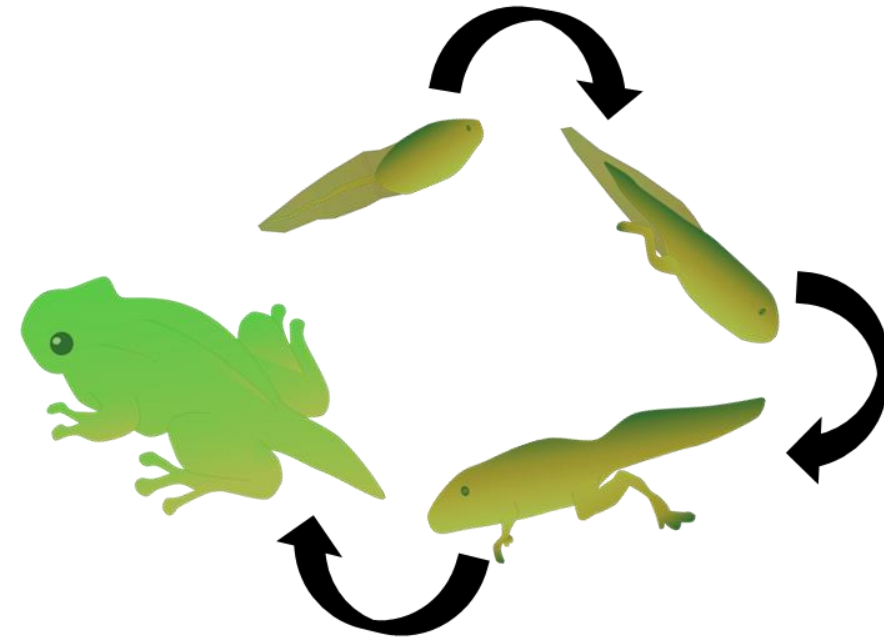
- Cultural significance
- Economic significance
- Ecological significance



Amphibians are just little salmon



- Cultural significance
- Economic significance
- Ecological significance



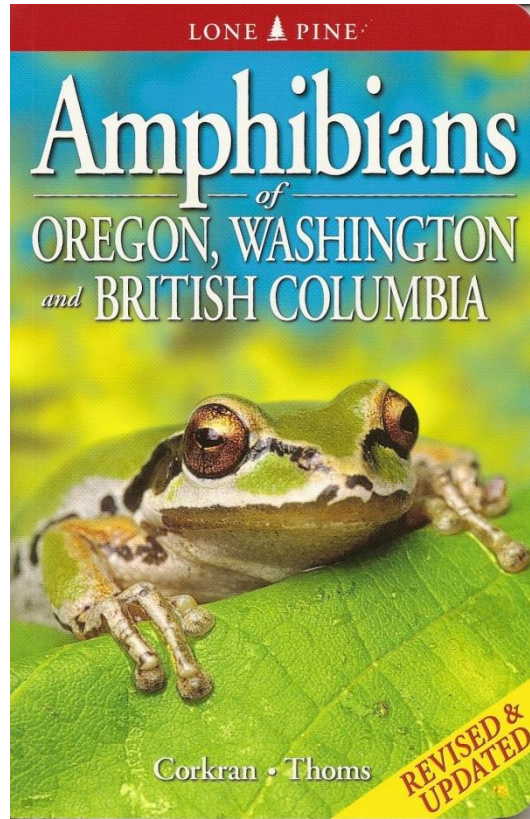
Amphibians are just little salmon



Ellenton Bay, SC

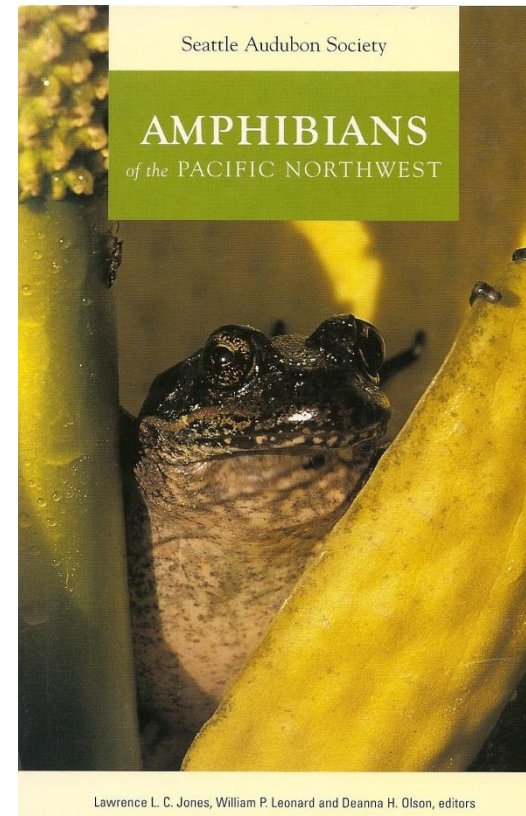
- 408,220 amphibians of 24 species left the wetland
- ~3,300 lbs of amphibian mass in a year
- = 142 lbs of amphibian mass per acre of wetland per year

Regional Amphibian Guides

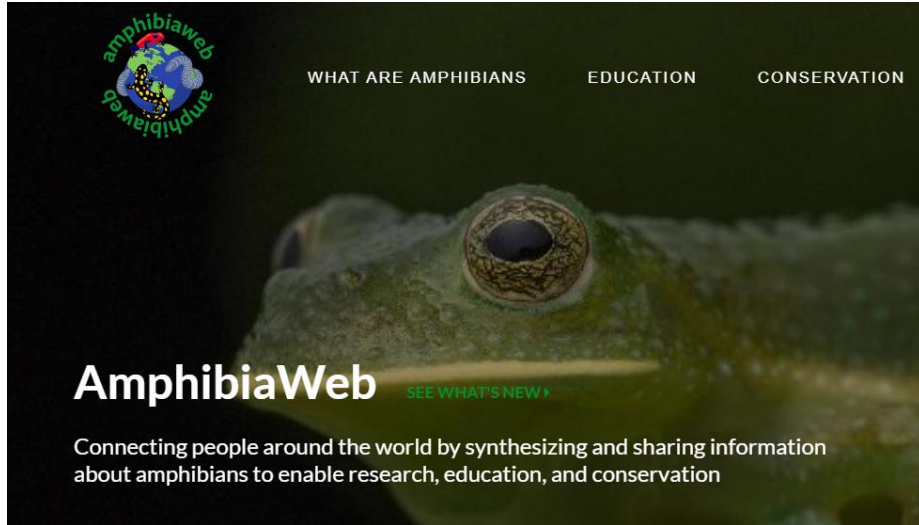


← Corkran & Thoms. 2006.
Amphibians of Oregon, Washington
and British Columbia. Lone Pine Press.

Jones, Leonard & Olson (editors).
2005. Amphibians of the PNW.
Seattle Audubon Society.. →

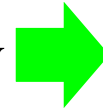


Digital Amphibian Resources



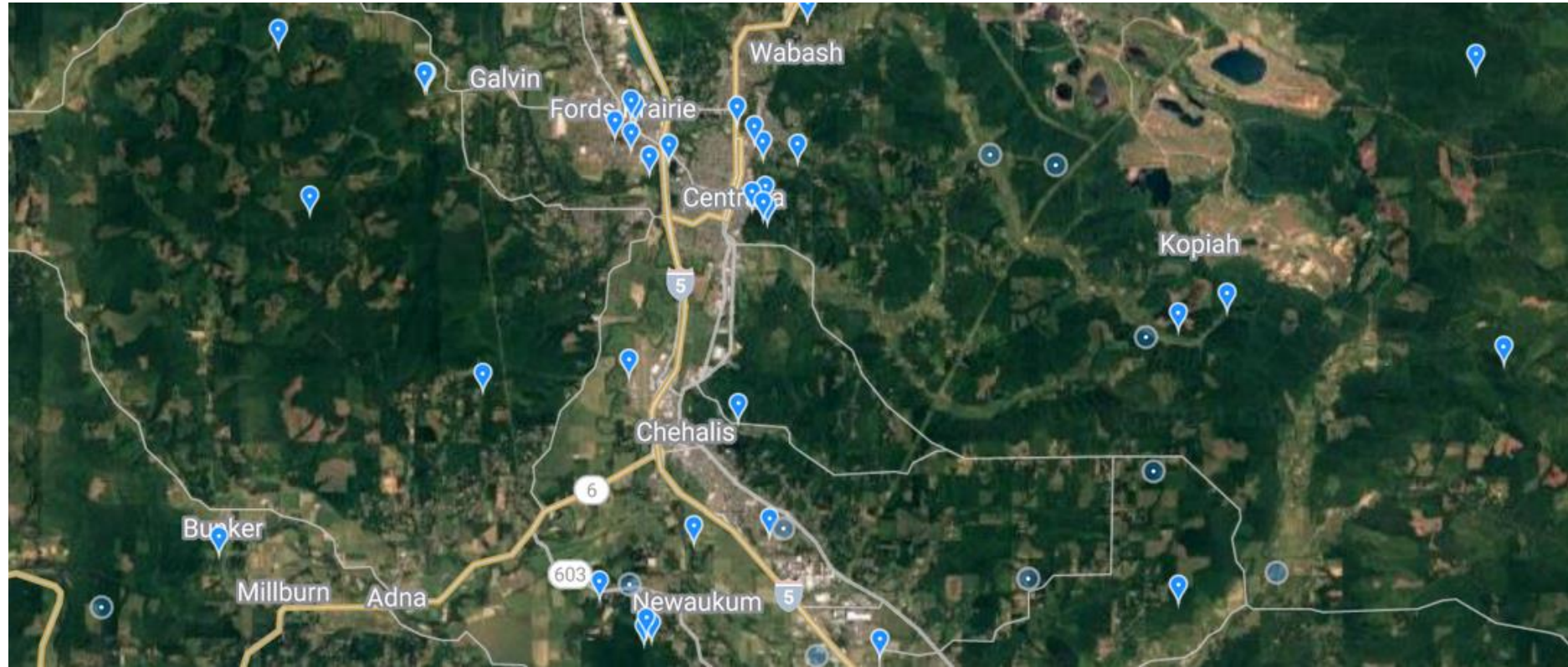
← AmphibiaWeb

WDFW



← Burke Museum

Digital Amphibian Resources



3 Amphibian Orders

- ANURA (Frogs & Toads)



- CAUDATA (Salamanders & Newts)



- GYMNOPHONIA (Caecilians)



Peter Janzen

Newts



Salamanders



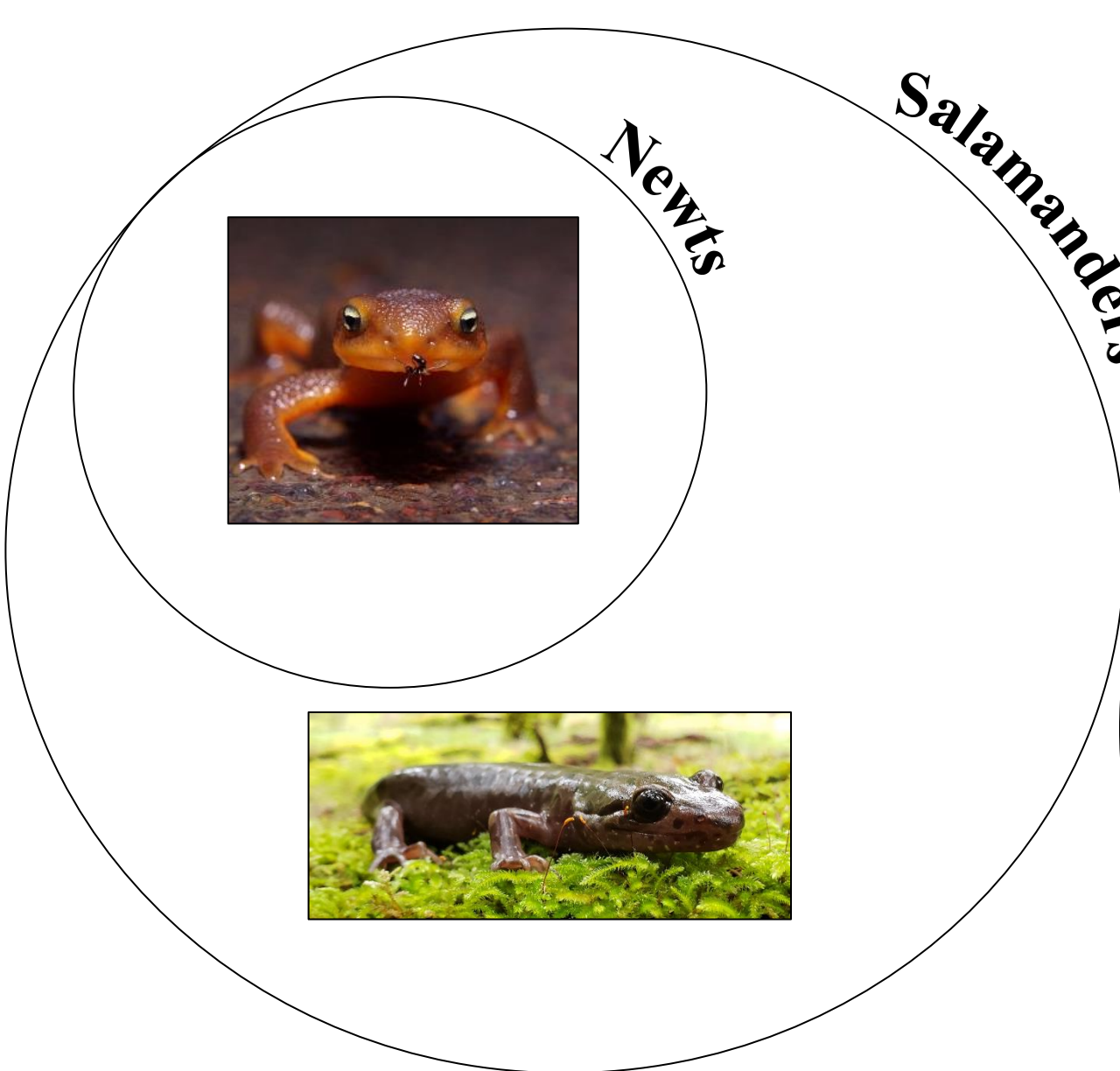
All newts are salamanders
Not all salamanders are newts

All toads are frogs
Not all frogs are toads

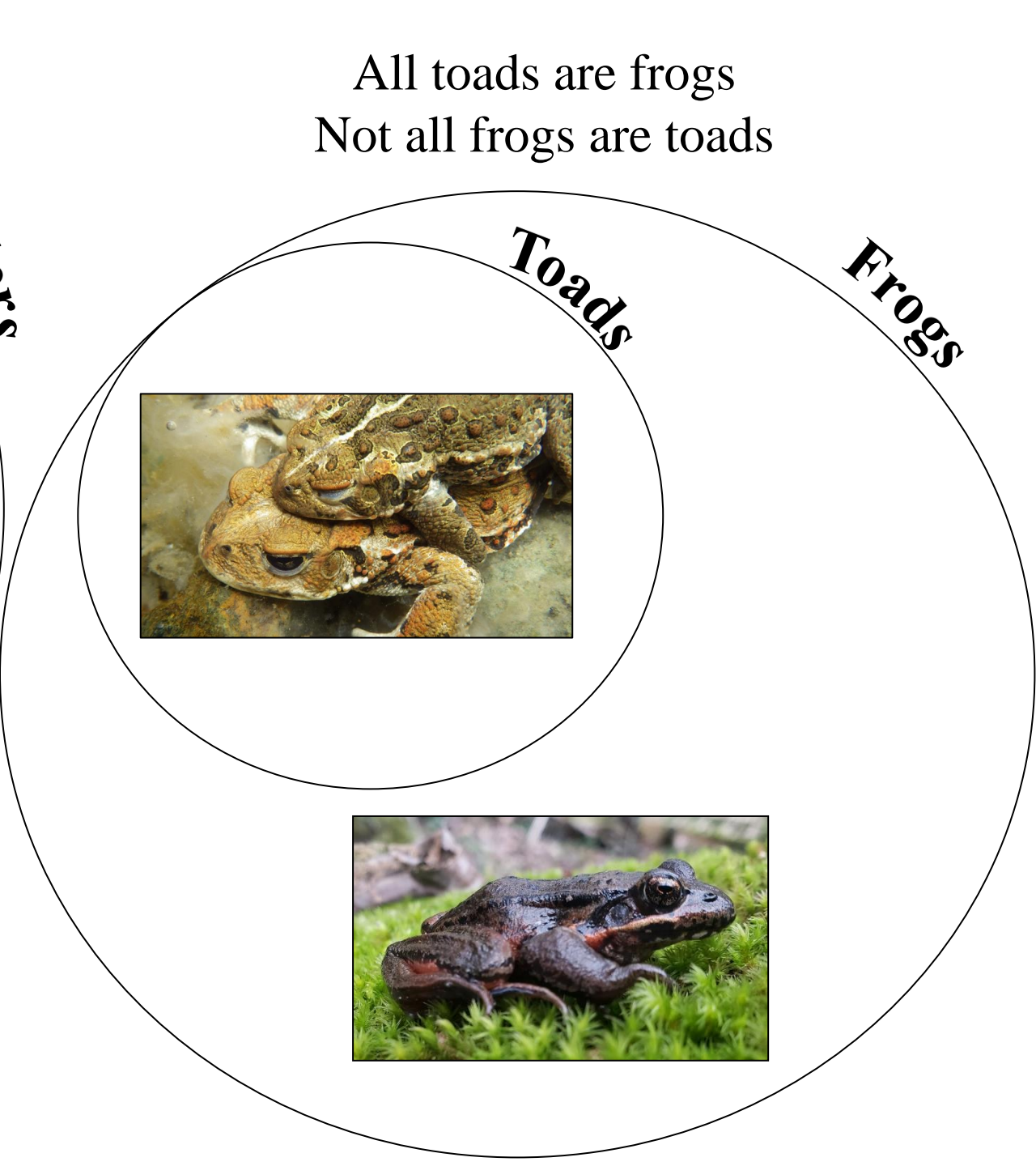
Toads

Frogs





All newts are salamanders
Not all salamanders are newts

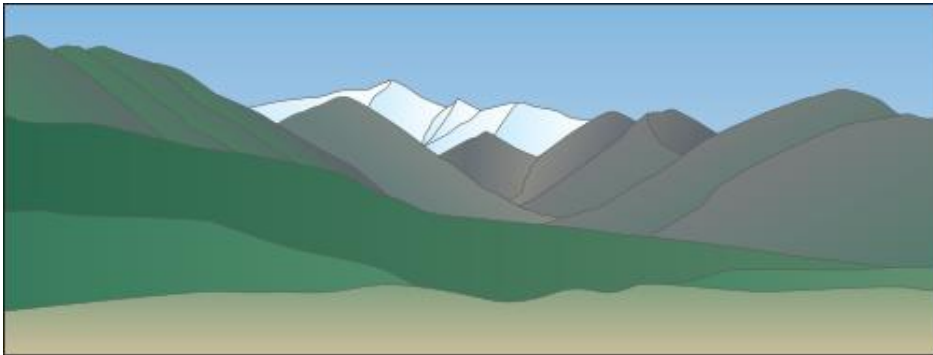
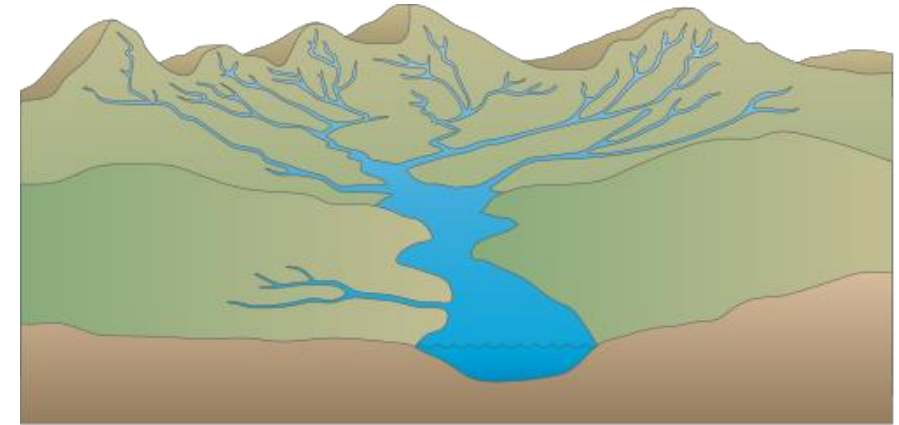


All toads are frogs
Not all frogs are toads

Amphibian Groupings

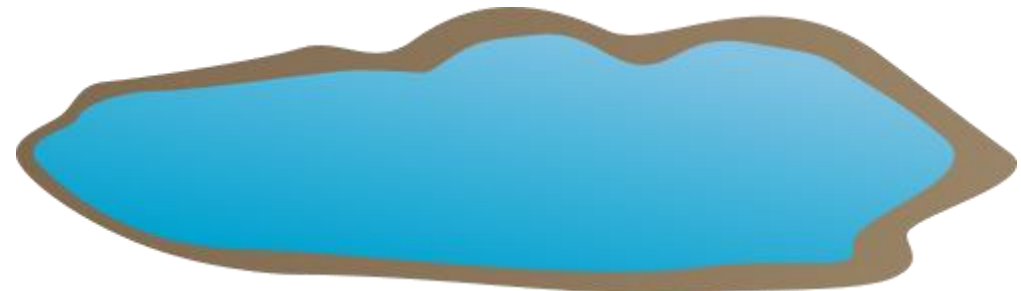
Are based on their reproduction in each of:

Flowing water - 7 species



Uplands - 5 species

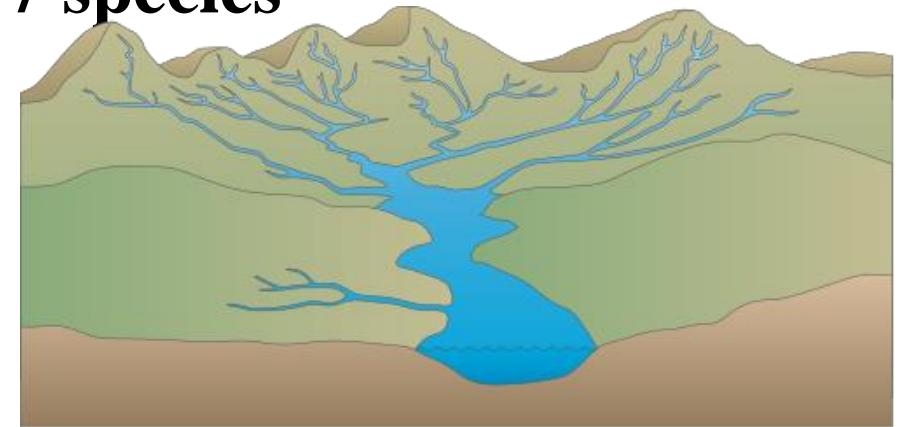
Stillwater - 13 species



Amphibian Groupings

Are based on their reproduction in each of:

Flowing water - 7 species



William Flaxington



Stephen Nyman



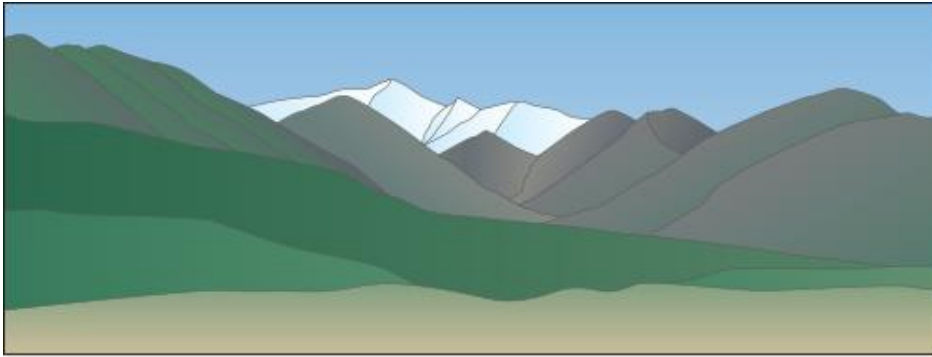
John Clare



Zachary Cava

Amphibian Groupings

Are based on their reproduction in each of:



Uplands - 5 species



Upland Species Near You: There are 2

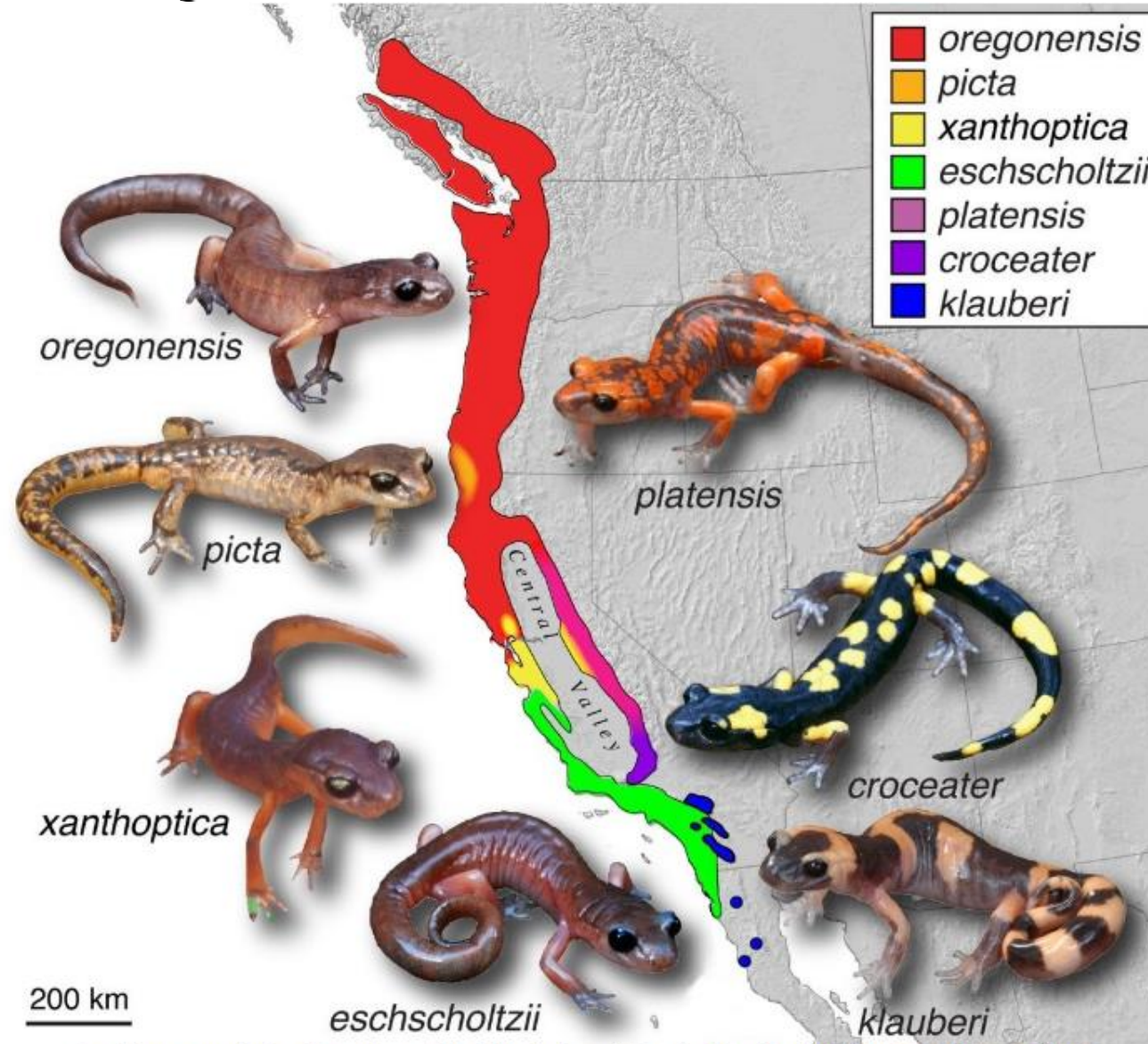
Western Red-Backed Salamander



Ensatina Salamander



Upland Species Near You: *Ensatina*



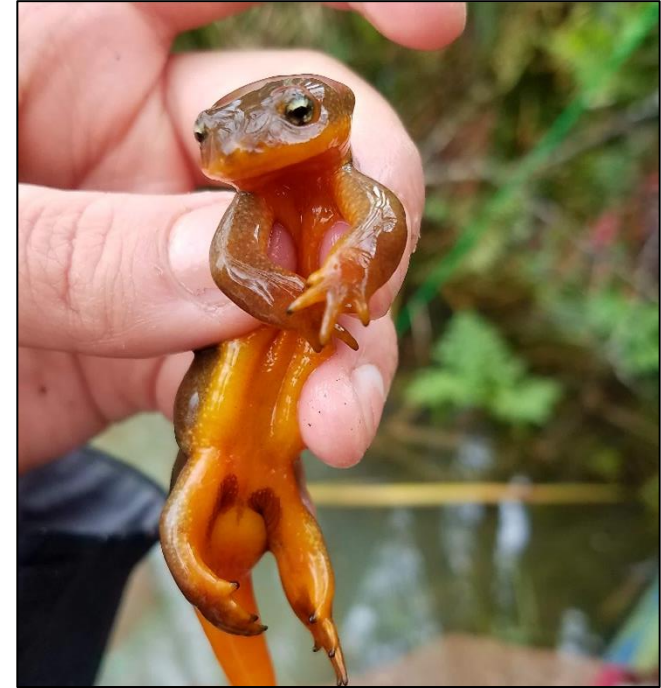
By Thomas J. Devitt, Stuart J.E. Baird and Craig Moritz (2011) [CC BY 2.0, Link](#)

Upland Species Near You: *Ensatina*

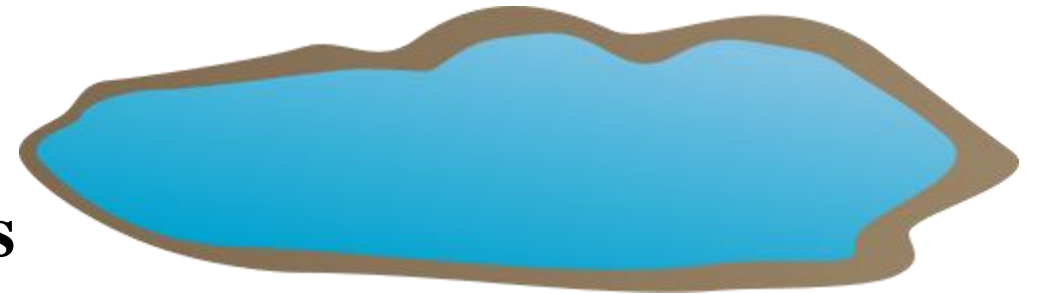


Amphibian Groupings

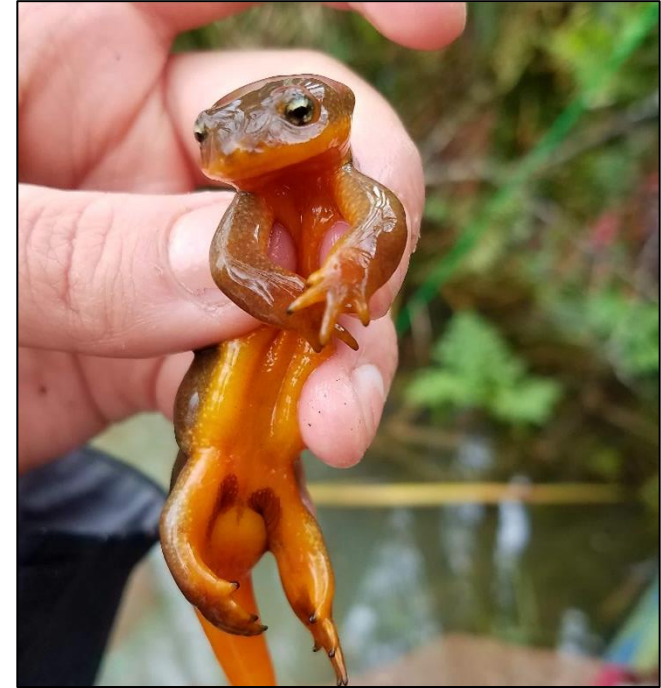
Are based on their reproduction in each of:



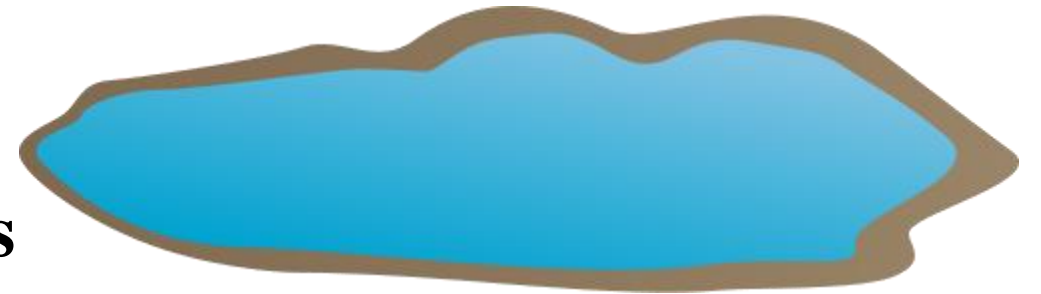
or **Stillwater** - 13 species



Stillwater Species Near You: There are 4, maybe 6



or Stillwater - 13 species



Red-legged Frog

- Most “frog-like” native frog
- Red or pink wash beneath
- Irregular or absent spotting
- Reduced webbing on feet
- Can migrate ~ 3mi to breed



Red-legged Frog





Northern Red-
legged frog
(*Rana aurora*)



Pacific Tree Frog

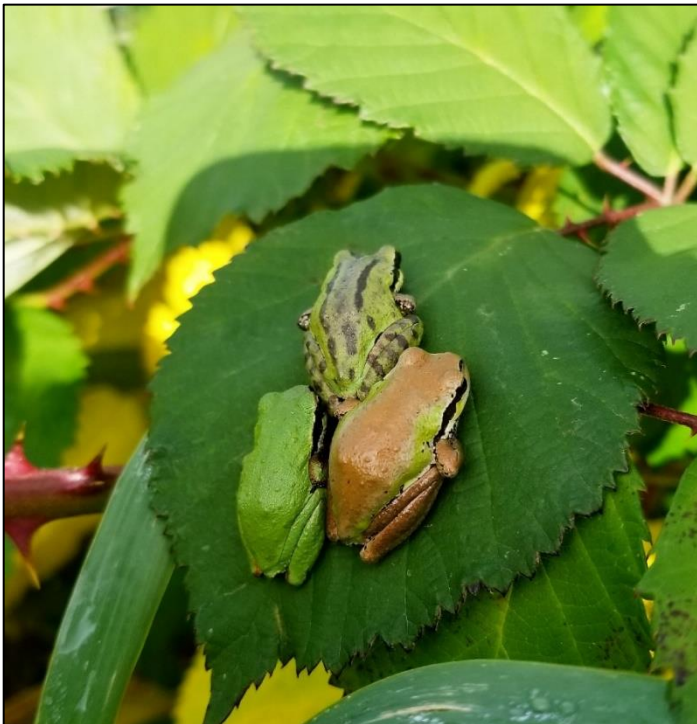


Red-Legged Frog



Chorus Frog

- Actually, a tree frog
- Highly variable coloration
- Dark eye stripe
- Survives winter with anti-freeze



Chorus Frog



Long-Toed Salamander

- Mid-dorsal stripe
 - Gold, yellow, or green
 - Broken, irregular, or solid
- Long, 4th hind toe



Long-Toed Salamander



Long-Toed Salamander



LIVING
CULTURES

← Long toed
salamander Eggs

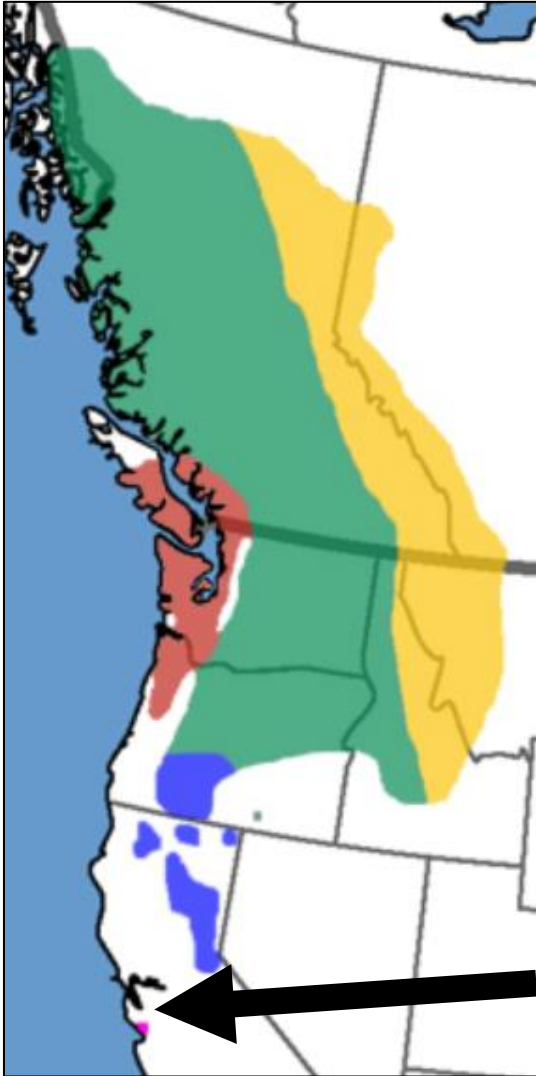
Pacific Tree Frog
Eggs →



Long-Toed Salamander

- Super common

- Endangered



Northwestern Salamander

- Brown or gray
- Clear paratoid gland
- Pronounced costal grooves



Northwestern Salamander

- Brown or gray
- Clear paratoid gland
- Pronounced costal grooves
- Special Power = Paedomorphosis

Sexually mature with a larval body



© Gary Nafis



Brian Freiermuth

Northwestern Salamander



QUIZ



Photo Credit: James Bettaso
U.S. Fish & Wildlife Service

QUIZ

Red-Legged Frog

Northwestern Salamander

Northern Red-legged Frog (*Rana aurora*), egg-mass
Northwestern Salamander (*Amyxstoma gracile*), egg-mass

Photo Credit: James Bettaso
U.S. Fish & Wildlife Service

Identification Key

How large is the egg mass compared to a tennis ball?

95% accurate

same size or larger

smaller

Is it firm enough to hold its shape out of the water?

How many eggs does it have?

yes

no

≤ 20

> 20

Northwestern salamander
Ambystoma gracile

Northern red-legged frog
Rana aurora

Long-toed salamander
Ambystoma macrodactylum

Pacific treefrog (chorus frog)
Pseudacris regilla



Fills one hand; skewered through the middle; often green with algae; light-colored embryos

Fills two hands; looks like marbles or grapes stuck together; dark-colored embryos

Often along pond edges or in very shallow water; embryos spaced further apart than treefrogs

Masses often found in high density; calls are common; embryos tightly packed

Less Common Species

Rough-Skinned Newt

- Brown above
- Orange below
- Thicker skin
- Highly toxic
- Can stay in water forever or migrate overland



Rough-Skinned Newt

- Brown above
- Orange below
- Thicker skin
- Highly toxic
- Can stay in water forever or migrate overland
- Lay single eggs



Rough-Skinned Newt

The New York Times



A 'Big Night' for Newts, and for a California Newt Brigade

Salamanders get a little help across the road from some two-legged friends in Northern California.

Western Toad

- “Warty” skin
- Short legs
- Clumsy
- Poison glands behind eye
- Pale mid-dorsal stripe
- Still water or flowing



Western Toad



Bonus Species: Oregon Spotted Frog

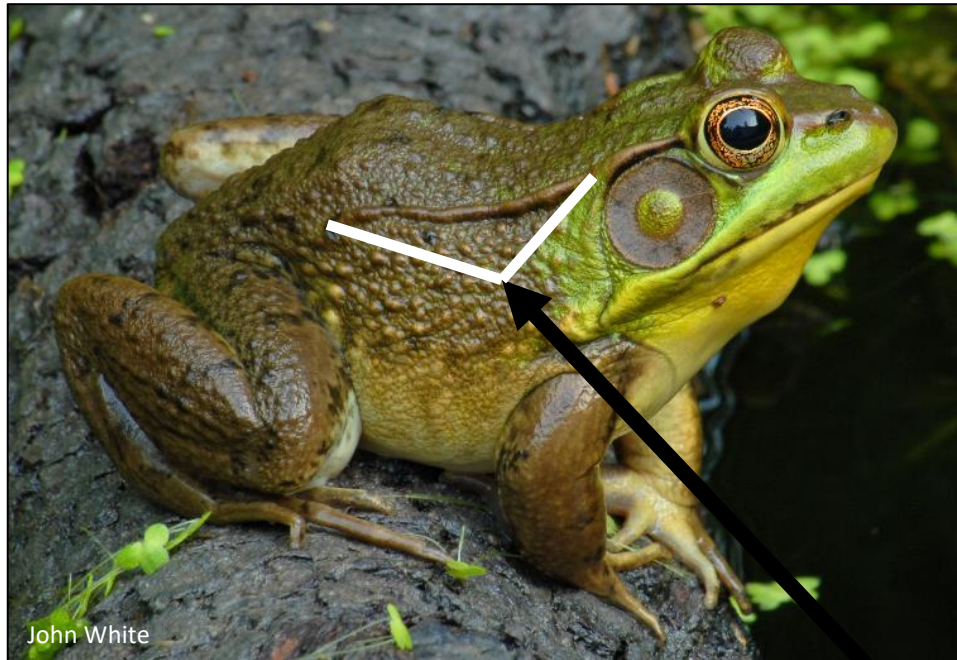


Introduced Amphibians

Green Frog & Bullfrog

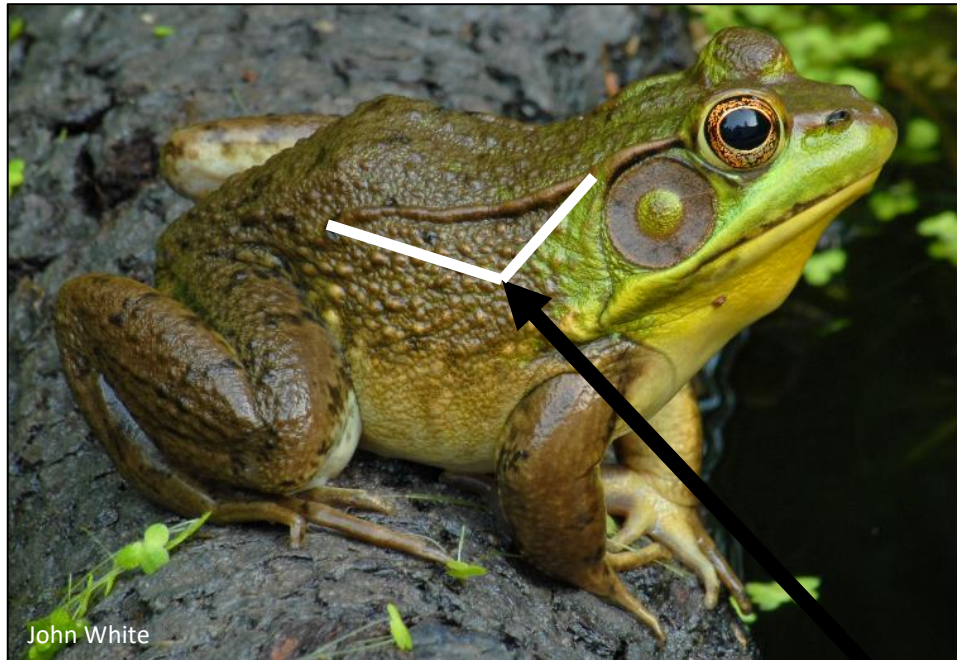


Green Frog & Bullfrog



Dorsolateral Fold

Green Frog & Bullfrog



Dorsolateral Fold

Bullfrog - management

- It's hard to do
- **These frogs can be controlled without a permit.** Bullfrogs can be taken by angling, hand dip netting, spearing (gigging), or with bow and arrow only. Bullfrogs must be dispatched on site.



African Clawed Frog

WA Invasives
@WAinvasives

African clawed frogs can be found in two watersheds in [#WashingtonState](#). The [#Invasive](#) frogs harm ecosystems by competing with native species, and potentially introducing harmful pathogens. More: [invasivespecies.wa.gov/priorityspecie....](#)
[#InvasiveSpecies](#) [#DontLetItLoose](#)



The infographic features two photographs of African clawed frogs. The left photo shows a frog from a top-down perspective, with a circular callout that reads "AFRICAN CLAWED FROG". The right photo shows a frog from a side profile. Text on the right side of the infographic states: "CAN BE UP TO 5 INCHES LONG NOT INCLUDING THEIR LEGS. THEY HAVE SMOOTH SKIN. CLAWS ON THEIR HIND FEET." Text at the bottom left reads: "ACE IS A PREDATORY AQUATIC FROG THAT IS HIGHLY ADAPTABLE, AND CAN SURVIVE MANY ENVIRONMENTAL CONDITIONS, INCLUDING FREEZING TEMPS AND DROUGHTS." Text at the bottom right reads: "AFRICAN CLAWED FROGS ARE ABLE TO REPRODUCE AND BECOME ESTABLISHED IN AN ECOSYSTEM VERY QUICKLY."

11:38 AM · Jan 17, 2020 · Twitter Web App

 **erica zucco** 
@ericazucco · Follow 

Joined [@WDFW](#) & [@TroutUnlimited](#) w/[@PhotogTimHahn](#) to find African Clawed Frogs- an invasive species increasing in WA. Some people illegally kept them as pets, then released them in areas where they threaten native species.

Here's what they look like... story to come [@king5seattle!](#)

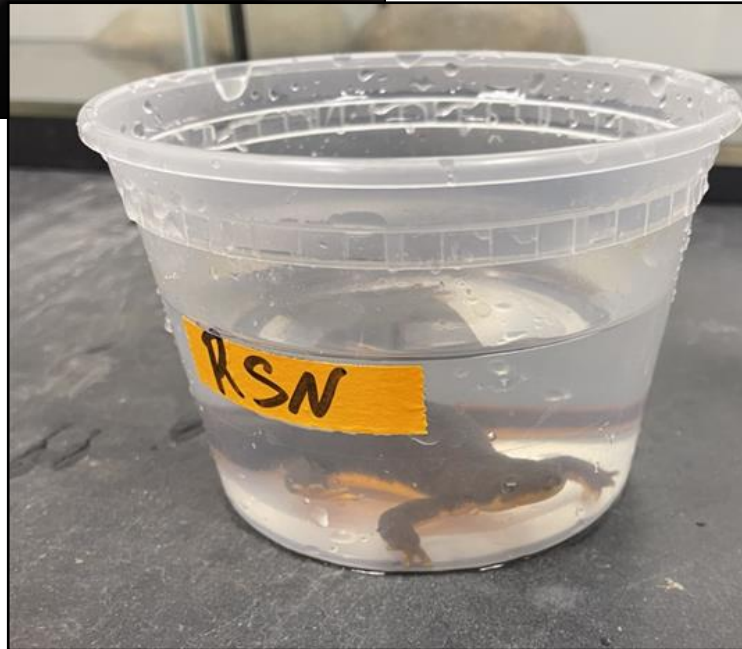
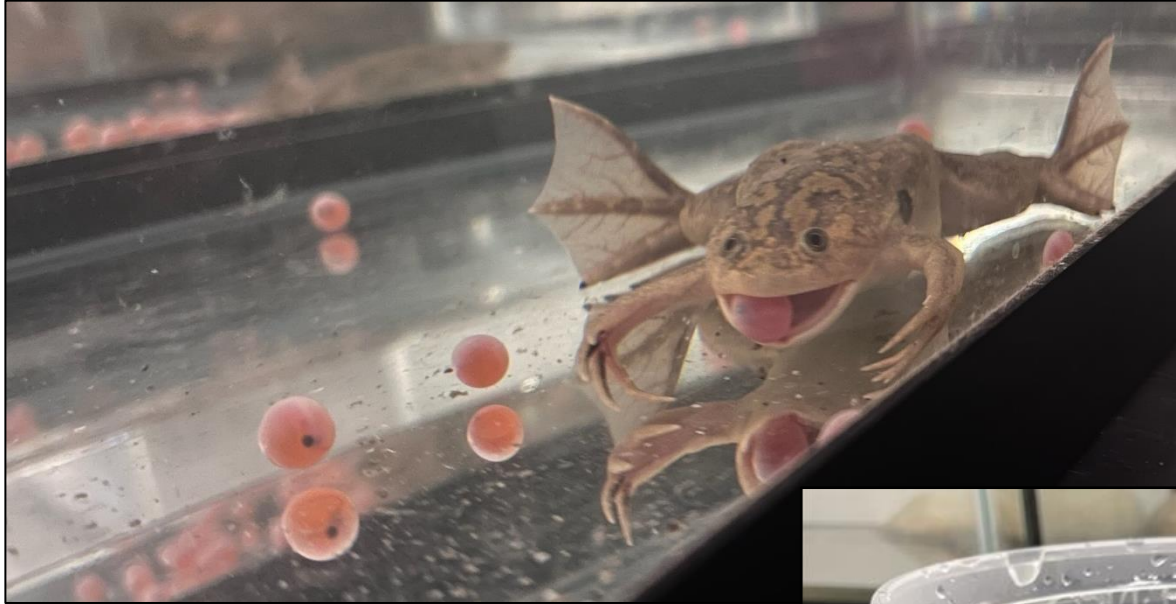


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African Clawed Frog



California Slender Salamander

NORTHWESTERN NATURALIST 103:81–87

SPRING 2022

FIRST RECORD OF A SLENDER SALAMANDER
(GENUS *BATRACHOSEPS*) INTRODUCED TO WASHINGTON STATE
AND MOLECULAR SOURCE IDENTIFICATION FROM
SAN FRANCISCO, CALIFORNIA

OLIVER FRENI, JOSEPH FRENI, CHRISTOPHER D ANDERSON, LISA HALLOCK, MAX R LAMBERT,
NICHOLAS VAN GILDER, DAVID B WAKE, AND ELIZABETH L JOCKUSCH



Native
Red-Backed Salamander

Cane Toad



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Cane Toads An Unnatural History 1988



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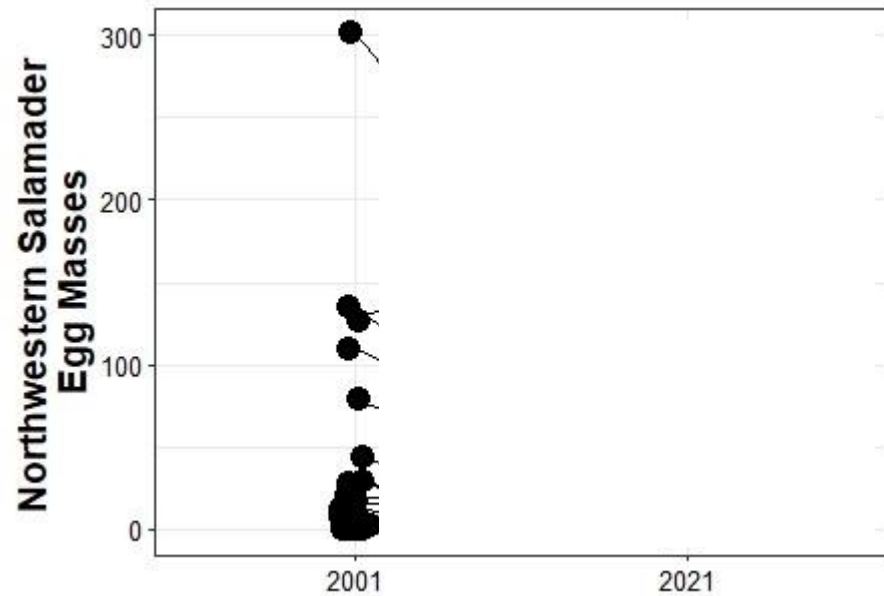
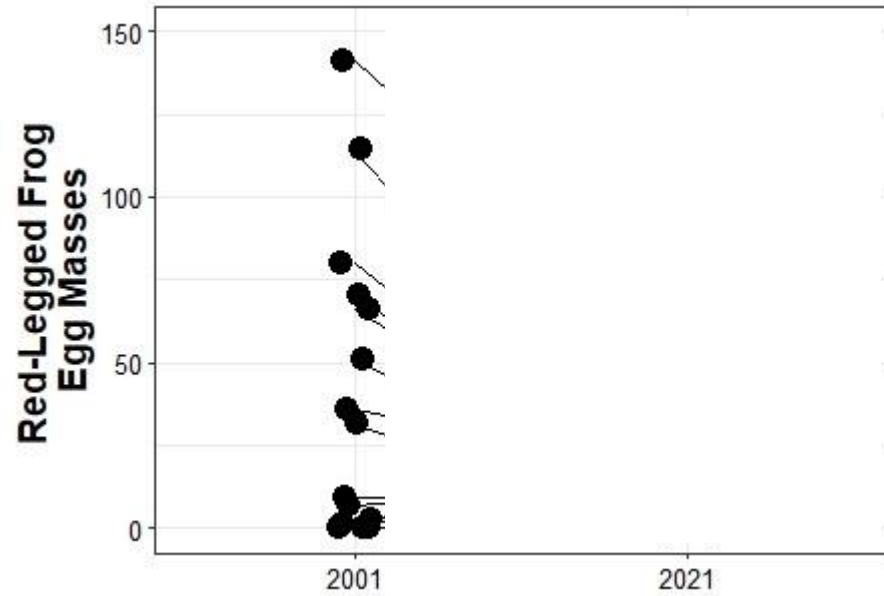
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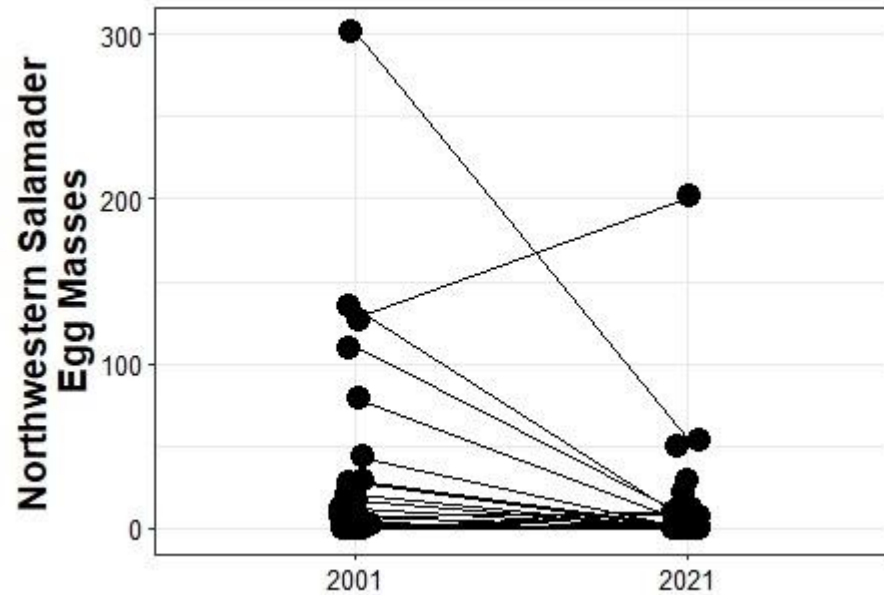
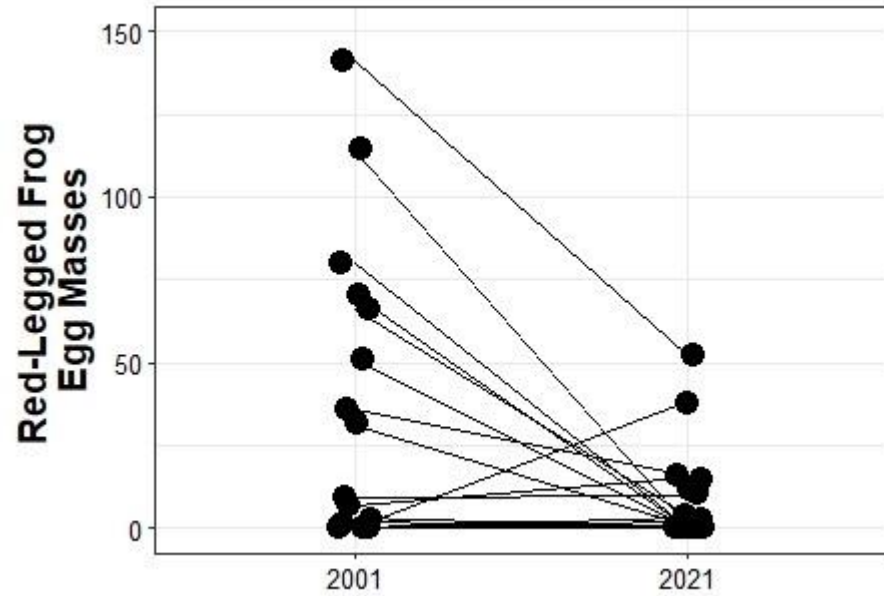
Threats

- Habitat Loss
 - Urban & Residential Development
 - Agriculture
 - Timber Harvests
- Climate Change
 - Drier & Hotter
 - = Habitat Loss



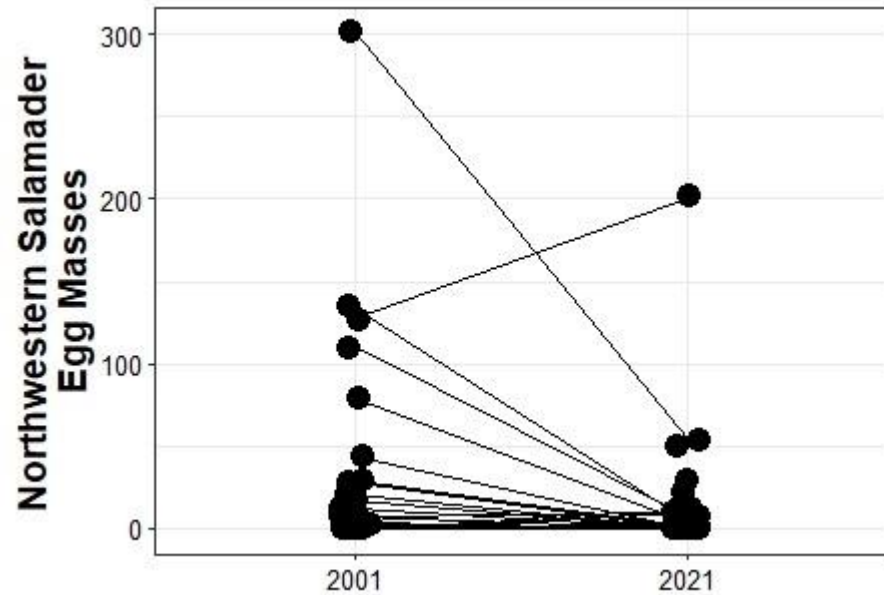
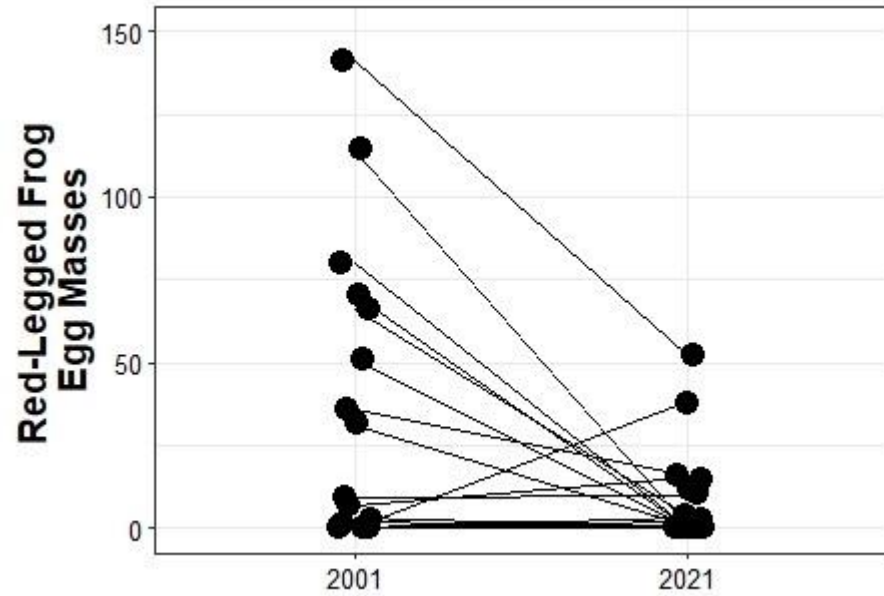
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Threats

- Habitat Loss
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- Invasive Species
- Disease



Threats

- Habitat Loss
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 - = Habitat Loss
- Invasive Species
- Disease
- Enigmas



Washington Department of Fish and Wildlife biologist Max Lambert holds an ailing rough-skinned newt at a lake on the Olympic Peninsula on Sept. 9, 2022.
CREDIT: COURTESY OF KATHLEEN LUMIERE

The case of the dying newts: an Olympic Peninsula mystery



clideo.com

Conversation

