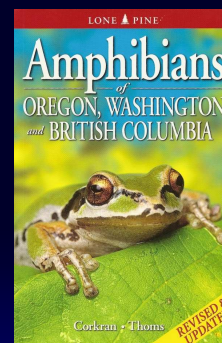


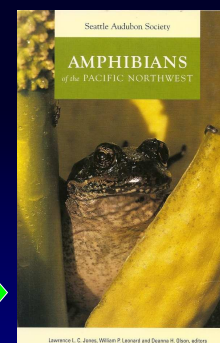
A Guide to Identification of Egg Masses of Stillwater-Breeding Amphibians in lowland Clark, Cowlitz and Wahkiakum Counties, Washington State

MARC HAYES
WASHINGTON DEPARTMENT OF FISH AND
WILDLIFE

Regional Amphibian Guides



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



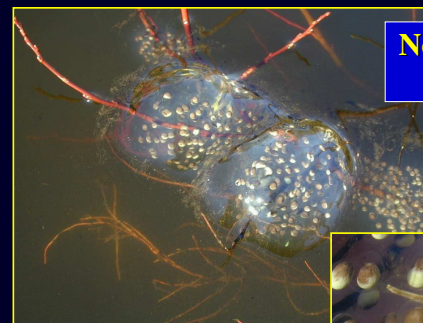
Jones, Leonard & Olson (editors).
2005. Amphibians of the PNW.
Seattle Audubon Society.



Northwestern Salamander
Ambystoma gracile

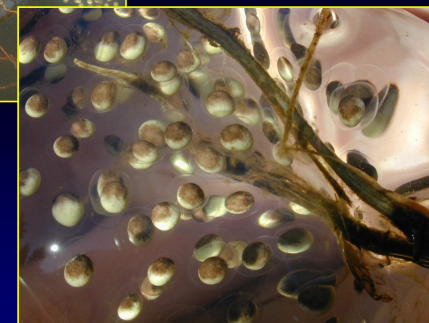
- early embryo color
smoky gray or brown
- early embryos
capsules lack algae

- ± round mass
- orange- to grapefruit-sized
- firm jelly; lasts 7-10 months
- capsules indistinct
- brace present; usually stick
- in water 5-6°C (41-43°F)



Northwestern Salamander
Ambystoma gracile

- recently laid egg masses
not scalloped
- jelly very clear





Northwestern Salamander *Ambystoma gracile*

- algae in late development capsules: has green look
- embryos darken during development
- masses often submerged



- \pm round; firm jelly; orange-to grapefruit-sized
- brace present; capsules indistinct at a distance



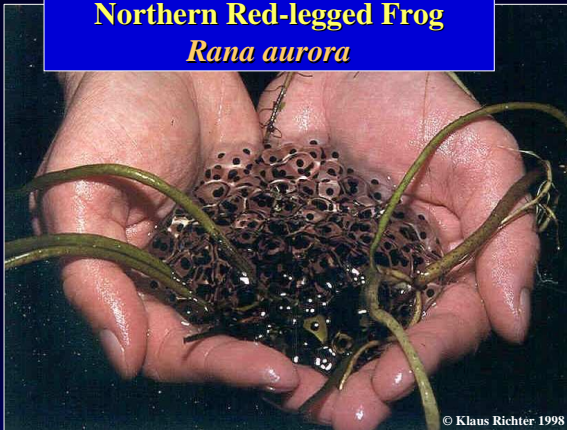
Northwestern Salamander *Ambystoma gracile*

- egg masses w/ all embryos hatched have green capsules in a clear jelly matrix
- old egg mass jelly often' accumulate dirt and debris on the surface



- Egg Mass:
- \pm round
 - softball-sized
 - embryonic capsules prominent: grape cluster appearance
 - soft jelly: breaks down fairly rapidly: ~2 months
 - laid on brace; often upright vegetation

Northern Red-legged Frog *Rana aurora*



- moderate egg numbers: several hundred to just over 1,000
- contains relatively large eggs: usually about $\frac{1}{8}$ inch in diameter
- often submerged, laying begins at 6°C (43°F) water temperatures



Northern Red-legged Frog egg masses can be hard to seen even when viewed at relatively short distances

Northern Red-legged Frog *Rana aurora*

Northern Red-legged Frog
Rana aurora



Northwestern Salamander
Ambystoma gracile

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

Long-toed Salamander
Ambystoma macrodactylum



- small packets:
< 2 inches long
- few eggs: 1-25
- soft jelly; breaks
down in 2 months
- attached to brace;
often soft vegetation
- laid in cool water:
laying begins at
water temperatures
of 5-6°C (41-43°F)

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- eggs moderate sized: between $\frac{1}{16}$ and $\frac{1}{8}$ inch in diameter
- eggs distinctly bicolored (brown above; white below) when young
- developing embryos lose bicoloration becoming light brown

Long-toed Salamander
Ambystoma macrodactylum



- sometimes single eggs or small
groups of eggs are laid close to
one another



Pacific Treefrog
Pseudacris (=Hyla) regilla



- small packets:
< 2.5 inches long
- few eggs: 10-80
- soft jelly; breaks
down in 2 months
- attached to brace;
often soft vegetation
- laid in cool water:
laying begins at
water temperatures
of 6-8°C (43-46°F)

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- eggs tiny: $\leq \frac{1}{16}$ inch in diameter
- eggs indistinctly bicolored (gray above; dingy yellow below)
- developing embryos lose bicoloration becoming light brown

Pacific Treefrog
Pseudacris (=Hyla) regilla



Pacific Treefrog
Pseudacris (formerly Hyla) regilla

Long-toed Salamander
Ambystoma macrodactylum



Western Toad
Bufo boreas

- long, narrow strings; roughly pencil width
- soft jelly; breaks down quickly: ~1 month
- jelly catches debris



Eggs:

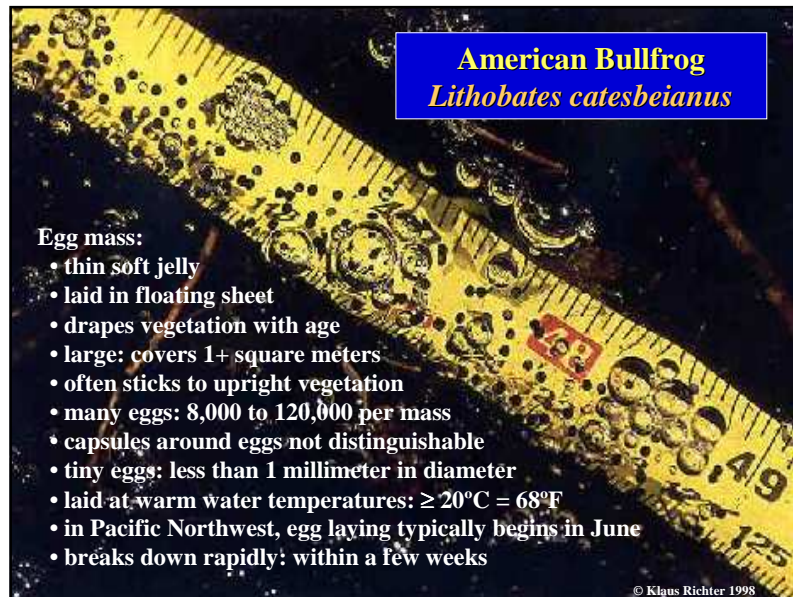
- dark above
- medium-sized; $\frac{1}{16}$ to $\frac{1}{8}$ inch



- unattached
- shallow water; < 8 inches deep
- relatively warm ~15°C (59 F)
- many eggs: a few thousand to over 20,000

Western Toad
Bufo boreas





American Bullfrog
Lithobates catesbeianus

Egg mass:

- thin soft jelly
- laid in floating sheet
- drapes vegetation with age
- large: covers 1+ square meters
- often sticks to upright vegetation
- many eggs: 8,000 to 120,000 per mass
- capsules around eggs not distinguishable
- tiny eggs: less than 1 millimeter in diameter
- laid at warm water temperatures: $\geq 20^{\circ}\text{C} = 68^{\circ}\text{F}$
- in Pacific Northwest, egg laying typically begins in June
- breaks down rapidly: within a few weeks

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American Bullfrog
Lithobates catesbeianus



American Bullfrog
Lithobates catesbeianus

Egg mass:

- may be entangled at the surface among vegetation
- may settle on underlying vegetation



Oregon Spotted Frog
Rana pretiosa

- \pm round
- softball-sized
- embryonic capsules prominent: grape cluster appearance
- moderately soft jelly; breaks down ~2 months
- no brace
- masses often in groups
- laying begins at 8°C (46°F)

- moderate egg numbers: several hundred to over 1,000
- moderately large eggs: just under $\frac{1}{8}$ inch in diameter
- masses usually laid in shallow water (< 6 inches deep)



Oregon Spotted Frog
Rana pretiosa