

AMPHIBIANS AND REPTILES OF THE BIG CREEK DRAINAGE, FRANK CHURCH – RIVER OF NO RETURN WILDERNESS



Charles R. Peterson

Herpetology Laboratory
Department of Biological Sciences

Idaho Museum of Natural History

Idaho State University

petechar@isu.edu

www.isu.edu/~petechar

Outline

- Introduction to Amphibians and Reptiles
- Importance
- Population Declines
- Reporting Observations
- Amphibians and Reptiles of Big Creek
 - Identification
 - Reproduction
 - Distribution
 - Habitat



Types of Amphibians

- Salamanders



- Frogs and Toads



- Caecilians



Characteristics of Amphibians



- **Thin Smooth, moist skin**
- **Breathe via gills, skin, and/or lungs**
- **Gelatinous eggs**
- **Complex Life Cycle**
- **Ectothermic**

Types of Reptiles

- Turtles
- Lizards
- Snakes
- Crocodilians
- Tuatara
- Amphisbaenids



Characteristics of Reptiles




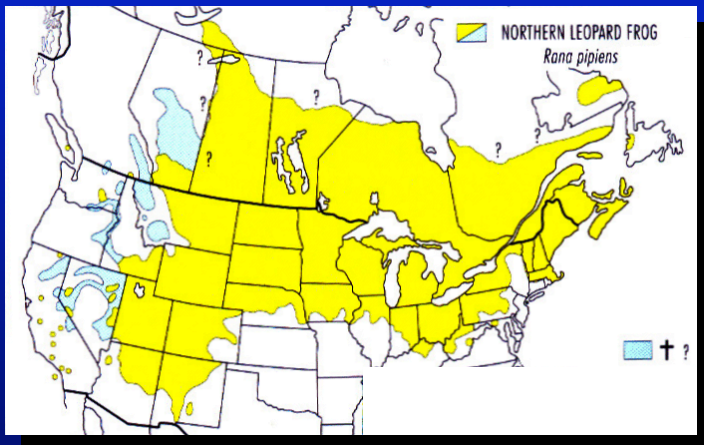
- **Dry, scaly skin**
- **Breathe via lungs**
- **Amniotic eggs**
- **Direct development**
- **Ectothermic**

Importance of Amphibians and Reptiles

- Biodiversity
- Functional Roles in Ecosystems
- Bioindicators
- Economic Value
- Model Systems for Research
- Biomedical Applications
- Aesthetic Appreciation



Amphibian Population Declines



**FIRST WORLD
CONGRESS OF
HERPETOLOGY**

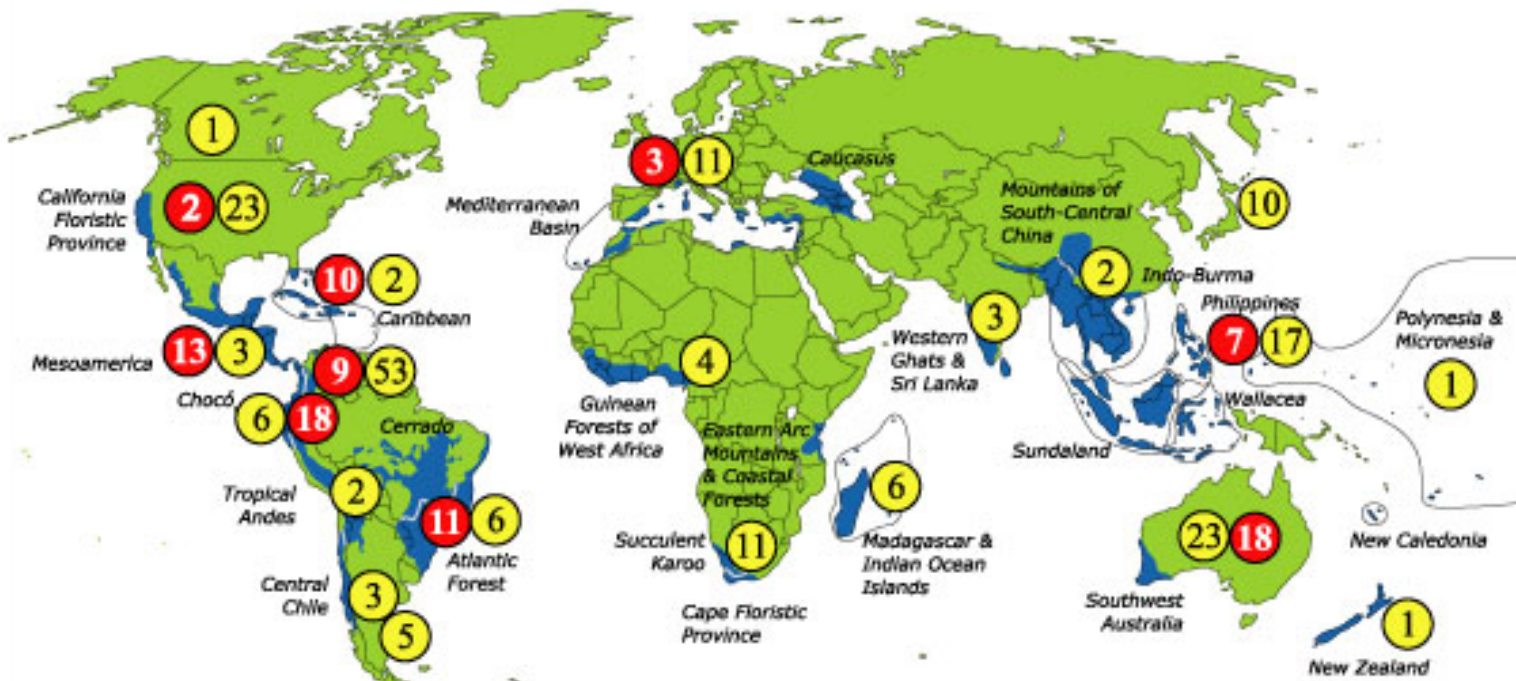
11-19 September 1989

University of Kent at
Canterbury
United Kingdom



Amphibian Population Declines

Distribution of Global Amphibian Declines

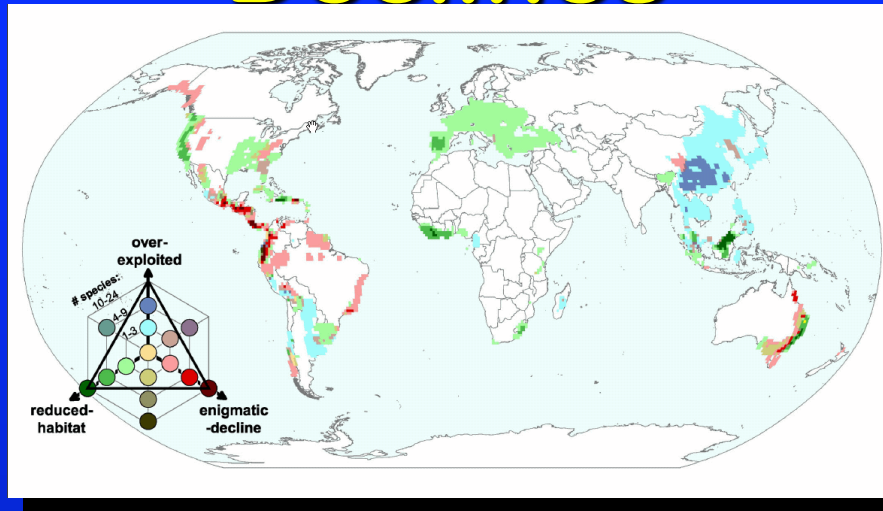


= Extinct, Missing or Critically Endangered

= Additional Threatened (Endangered or Vulnerable)

Source: IUCN 2000, AmphibiaWeb, Hero J.-M. & L. Shoo, 2003. Chapter 7 in Amphibian Conservation, Smithsonian Press. Background biodiversity hotspots map from Myers et al., 2000. Nature 403:853-858 c/o Conservation International. Prepared by J.-M. Hero, April 2002.

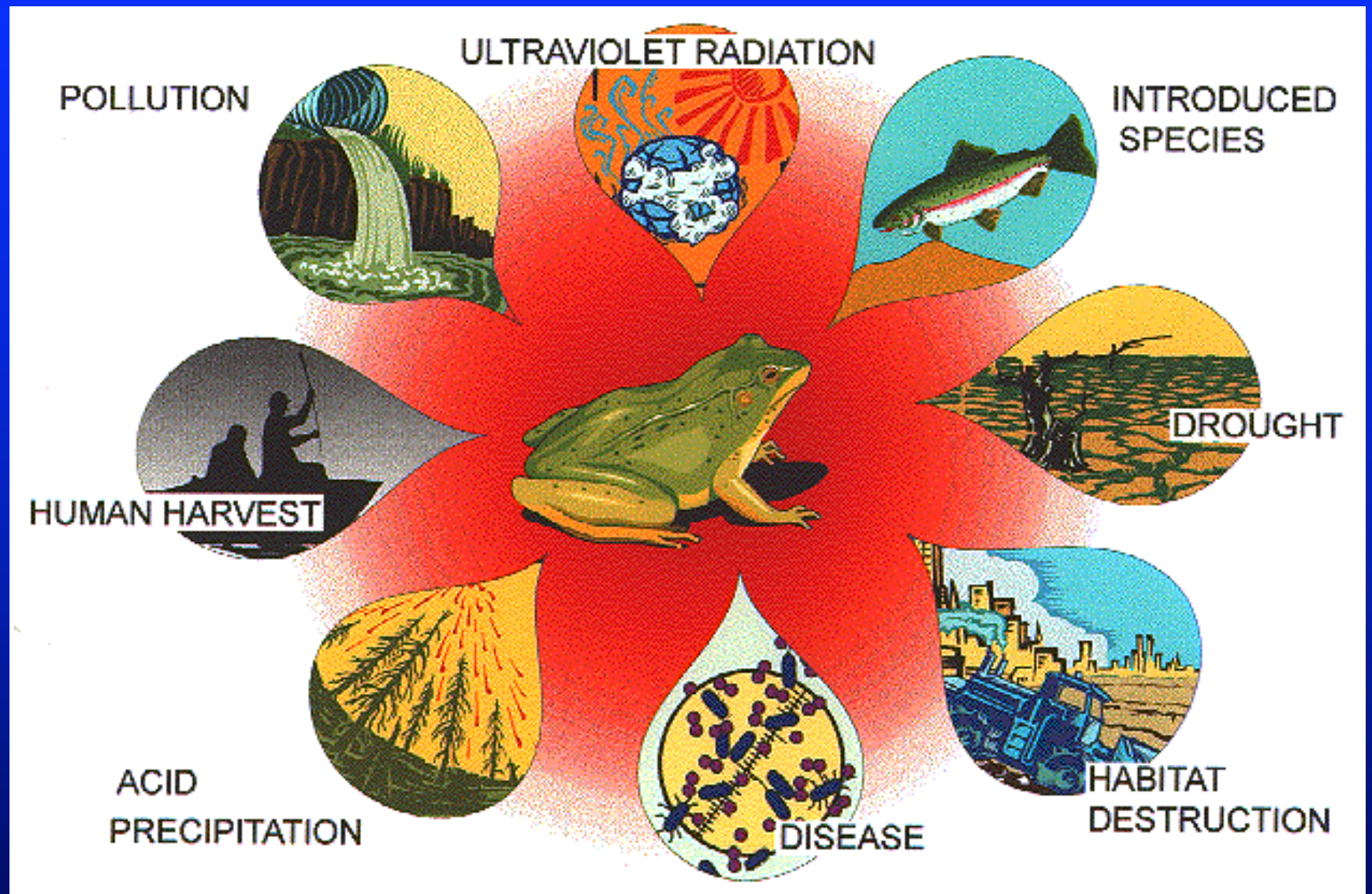
Amphibian Population Declines



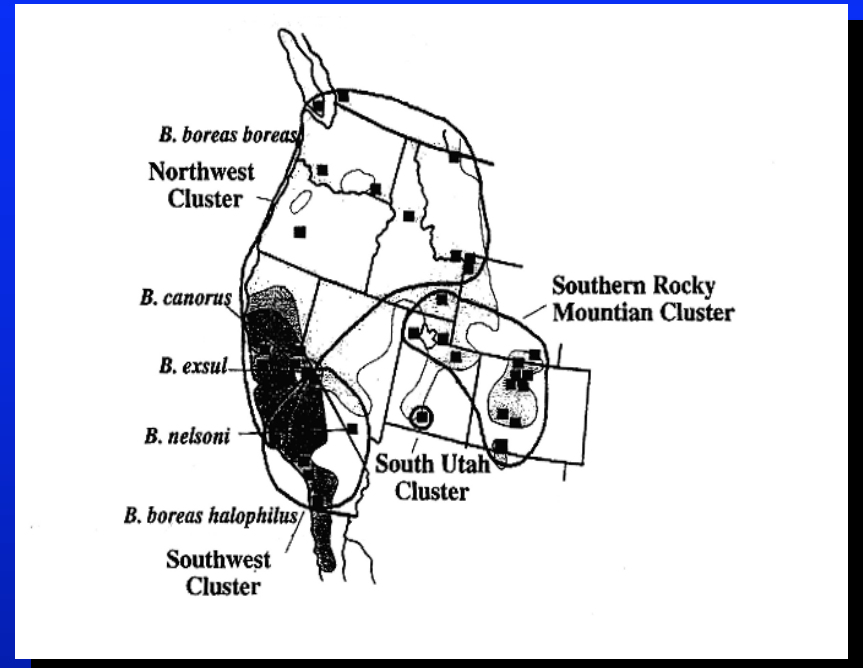
Global Amphibian Assessment

- Stuart et al. 2004. Status and trends of amphibian declines and extinctions worldwide. Scienceexpress.
- “...rapid and poorly explained declines in amphibian populations are taking place in addition to the typical causes of biodiversity loss...”
- “Unless these declines are quickly understood and reversed, hundreds of species of amphibians can be expected to go extinct over the next few decades.”

Conservation Threats



Importance of Reporting Observations



Range of Taxa in Western Toad Group
(Anna Goebel, unpublished data)

AMPHIBIAN AND REPTILE INDIVIDUAL OBSERVATION FORM

(16 August 1997)

Please provide whatever information you can, even if you are unsure of the species.



Species: _____ Number of Animals: _____

Observation Date: ____/____/____ Time: _____ am/pm (circle one)

Observer Name(s): _____

Affiliation: _____

Address: _____

Phone No: _____ Have you seen this species before? _____

Description of Animal (size, color, pattern, pupil shape, skin texture, etc.): _____

_____ Did you photograph the animal? _____

Description of Animal's Behavior: _____

Animal's Location: (Be as accurate as possible; e.g., 4.5 miles north and 3.3 miles east of known landmark; Latitude and Longitude; UTM coordinates; or Range, Township, and Section)

County _____ State _____

Habitat: _____

Weather: (temperature, cloud cover, wind, etc.): _____

Remarks: _____

Please return to:
 Dr. Claude Peterson
 Idaho Museum of Natural History
 Box 8007, Idaho State University
 Pocatello, Idaho 83209
 (208) 236-3922 office 236-4570 FAX Intern

Name _____
 Affiliation _____
 Address _____
 Phone Number _____

Please see the instructions for filling out the Amphibian and Reptile Multiple Observation Form for details on what information to provide.

SPECIES	DESCRIPTION	DATE & TIME	LOCATION	HABITAT	REMARKS

Dataforms

Amphibians of Big Creek Drainage



Salamanders

Long-toed Salamander

Idaho Giant Salamander ?

Anurans

Tailed Frog

Western Toad

Pacific Treefrog ?

Columbia Spotted Frog

Long-toed Salamander

Ambystoma macrodactylum

- Max length= 6.25 inches (160mm)
- SVL length= 3.5 inches (85 mm)
- Yellow, green, or tan dorsal stripe
- Long 4th toe of the hind foot
- Rounded head
- Smooth skin
- Costal grooves present
- No nasolabial grooves
- No parotoid glands



Long-toed Salamander Eggs



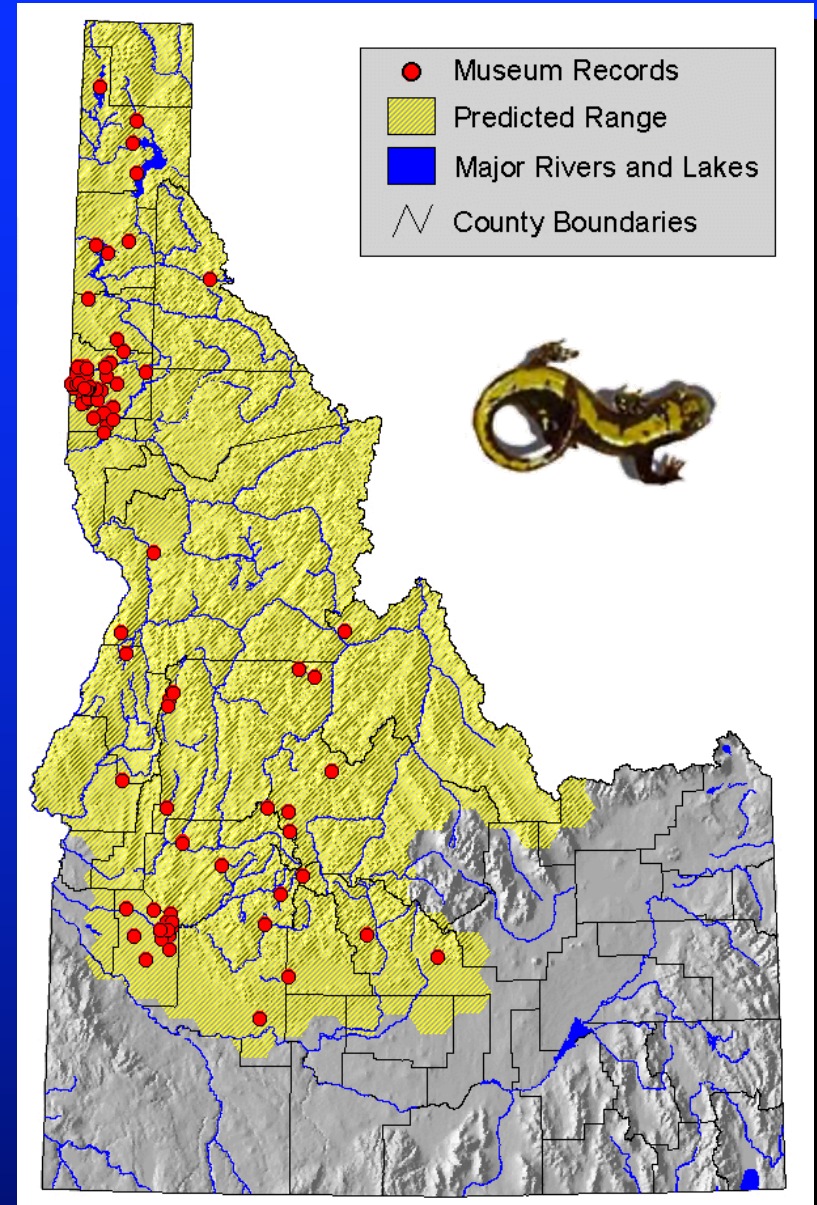
- Eggs laid in still or slow-moving water
- Attached to vegetation or logs
- Either laid singly or in clusters
- Take 2-4 weeks to hatch into larvae

Long-toed Salamander Larva

- Larval period lasts from 50 days - 14 months
- Large, feathery external gills
- Balancers present
- Unicolor
- Neoteny has not been observed



Long-toed Salamander Distribution and Habitat



Idaho Giant Salamander Adult

Dicamptodon aterrimus

- Bulky, max length 13 inches (330mm)
- Tan or copper marbling pattern
- Large head
- Inconspicuous costal grooves
- No nasolabial groove
- Smooth skin
- No parotoid glands

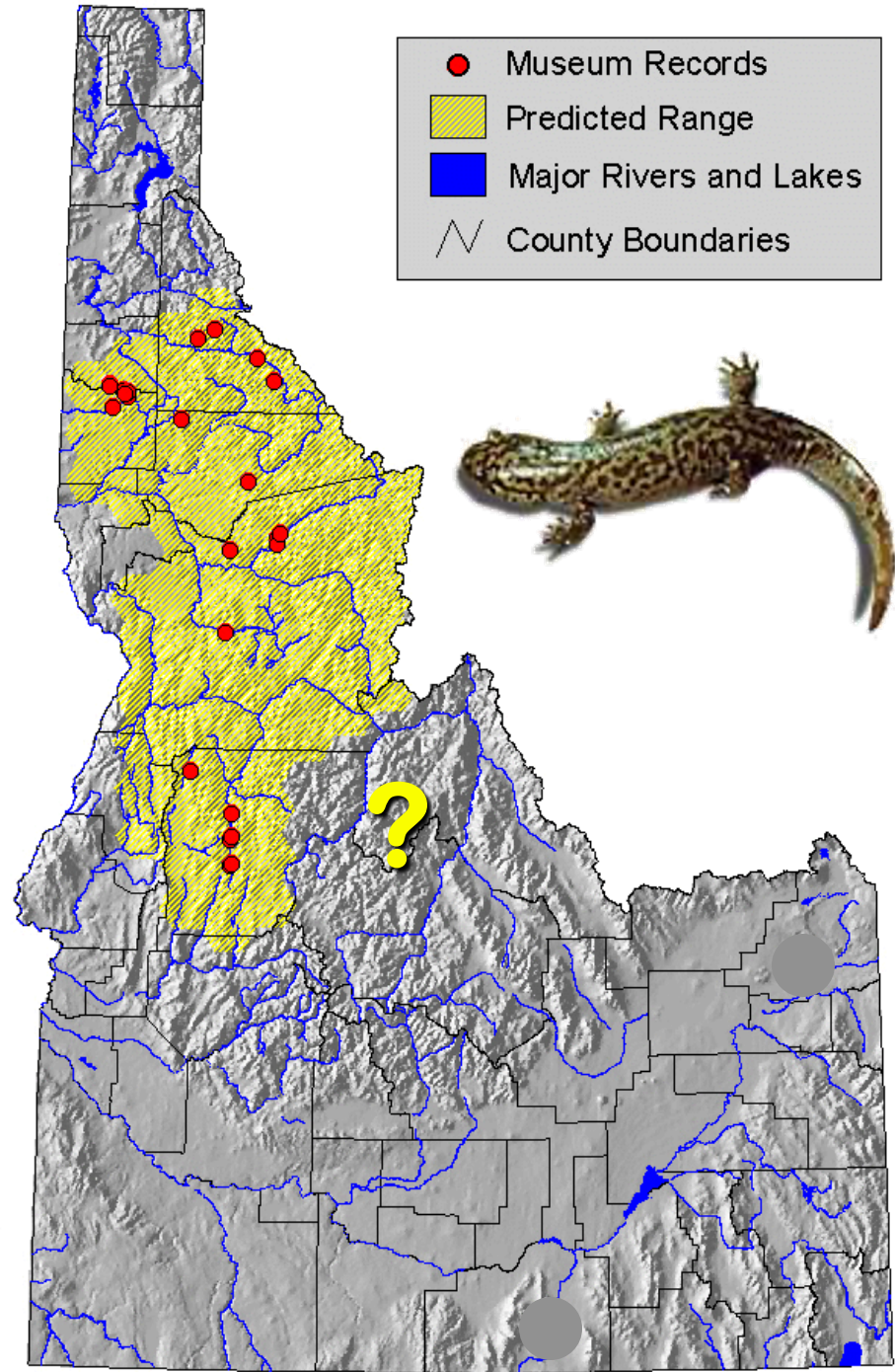
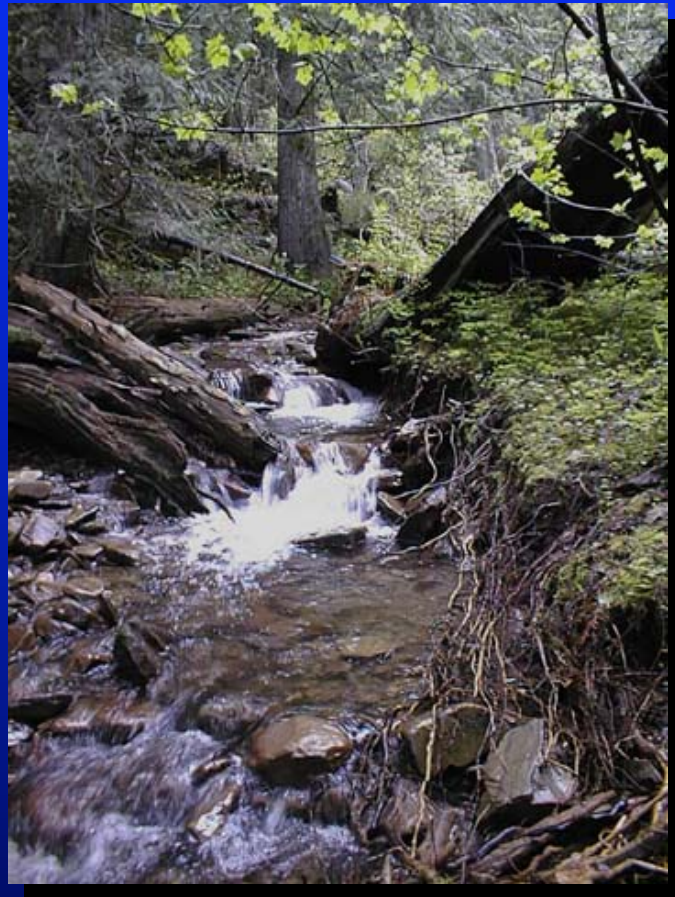


Idaho Giant Salamander Larvae



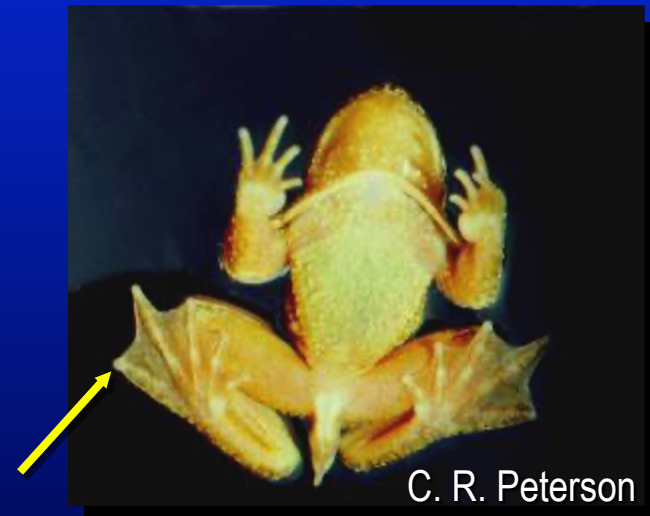
- Paedomorphic larvae may exceed 12" (300 mm) total length.
- Larval period lasts from 18 - 24 months
- External gills short and bushy
- Lacks balancers
- Dorsal tail fin
- Stream dwelling
- After 24 months, if no metamorphosis, larvae become paedomorphic

Idaho Giant Salamander Distribution and Habitat



Rocky Mountain Tailed Frog (*Ascaphus montanus*)

- Max length= 2 inches (51 mm)
- brown to gray
- Smooth to warty skin
- tympanum absent
- vertical pupils
- 5th toe wider than others
- male with “tail”



Tailed Frog Eggs



C. R. Peterson

Tailed Frog Tadpoles

C. R. Peterson



C. R. Peterson



C. R. Peterson



Jason Jones

Age Class Structure



30-45 days



1st year



2nd year



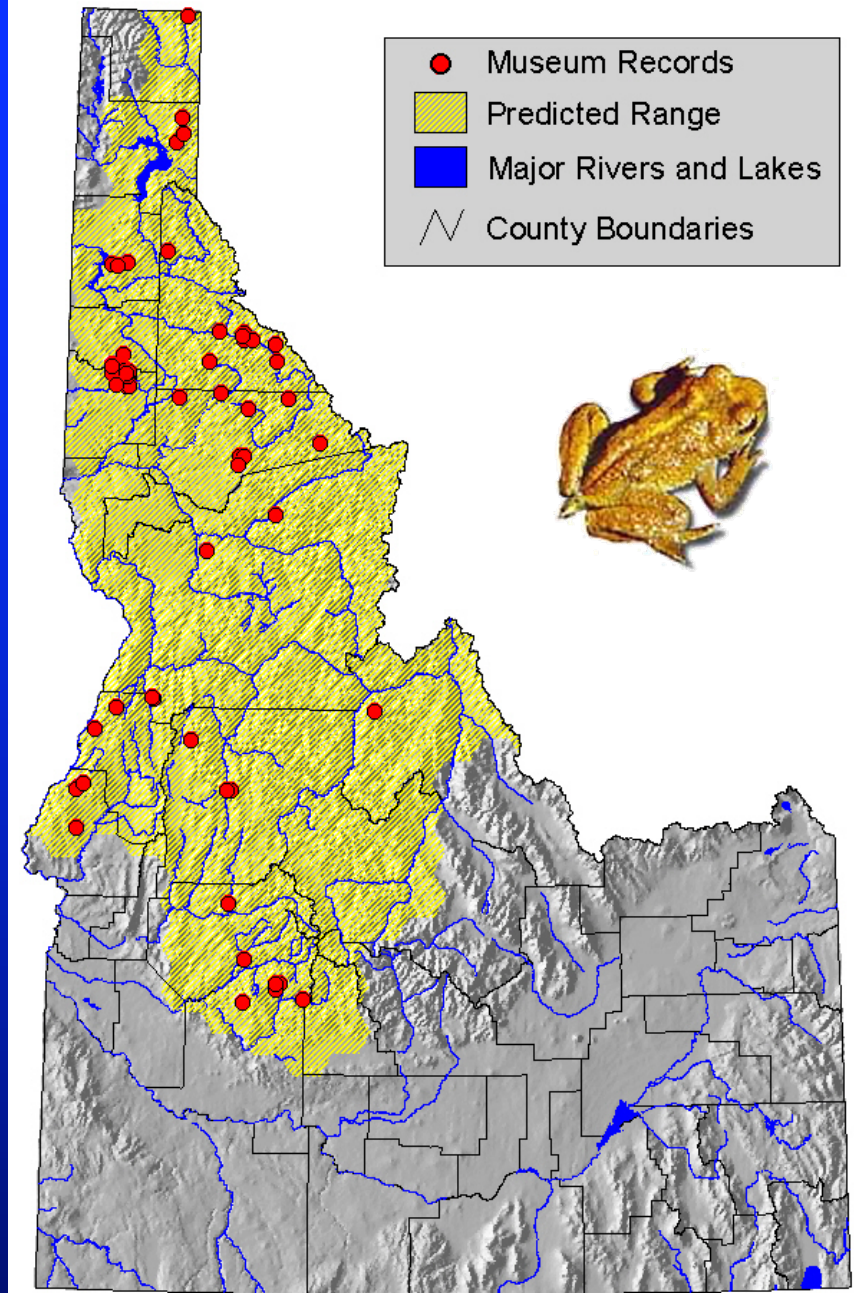
6-15+ years



3rd year



Tailed Frog Distribution and Habitat



Western Toad (*Bufo boreas*)

- Max length = 5 inches (125 mm)
- green or brown with light vertebral stripe
- dry, warty skin
- horizontal pupils
- conspicuous parotoid glands
- two horny tubercles on each hind foot



Western Toad Reproduction



Release Call



Western Toad

Tadpoles

Edson Fichter



Metamorphs

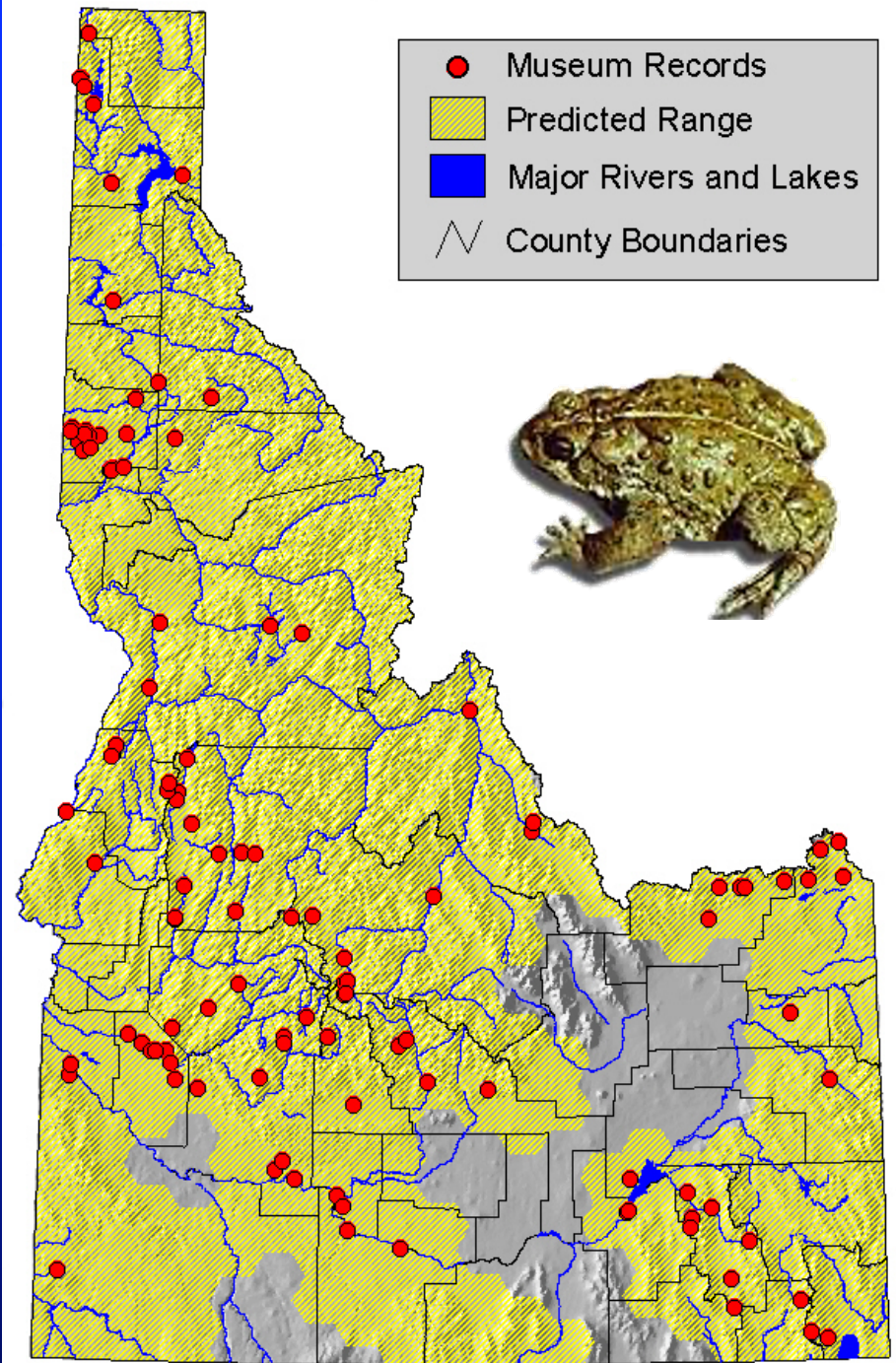
C. R. Peterson



C. R. Peterson



Western Toad Distribution and Habitat



Pacific Treefrog ?

Pseudacris (= Hyla) regilla

- Max length = 1.9 inches (47 mm)
- color polymorphic
- dark mask
- moist, smooth skin
- long toes, large toe pads
- intercalary cartilage



Pacific Treefrog Reproduction



Call

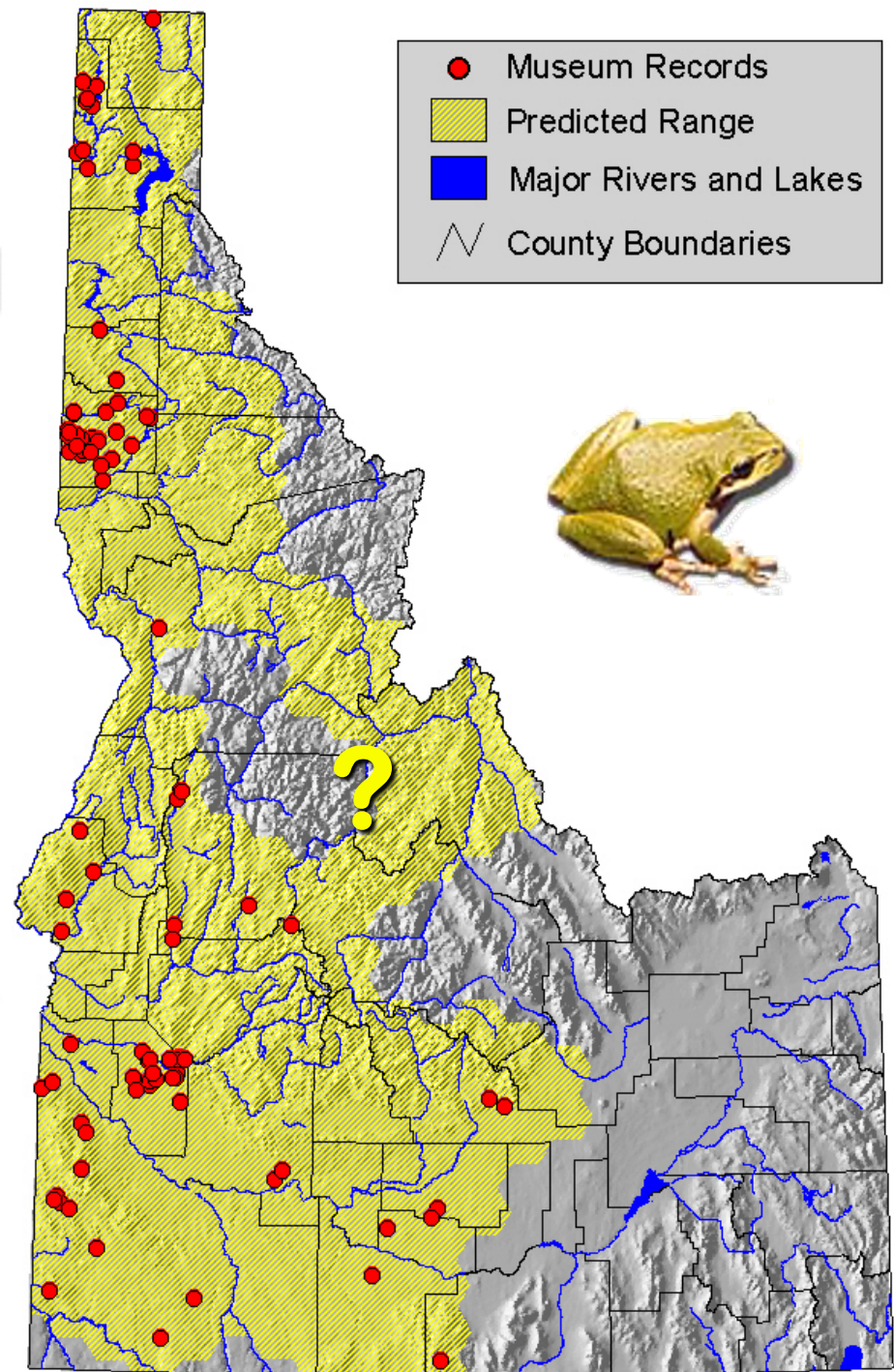


Eggs



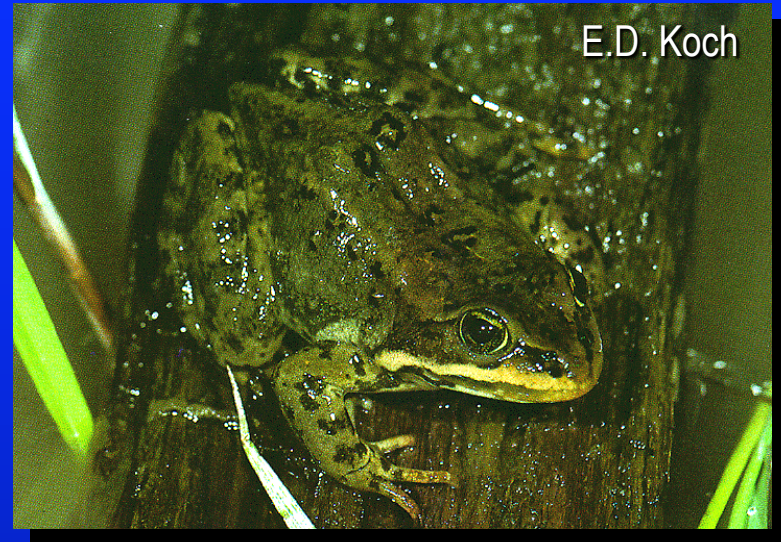
Tadpole

Pacific Treefrog Distribution and Habitat



Columbia Spotted Frog

- Max length = 3.5 inches (89 mm)
- green, tan, or olive dorsum
- dark spots with fuzzy edges
- yellow, orange, or red ventrum
- upturned eyes
- full webbing on hind feet
- breeding males with nuptial pads, enlarged forearms



Columbia Spotted Frog Reproduction



Call



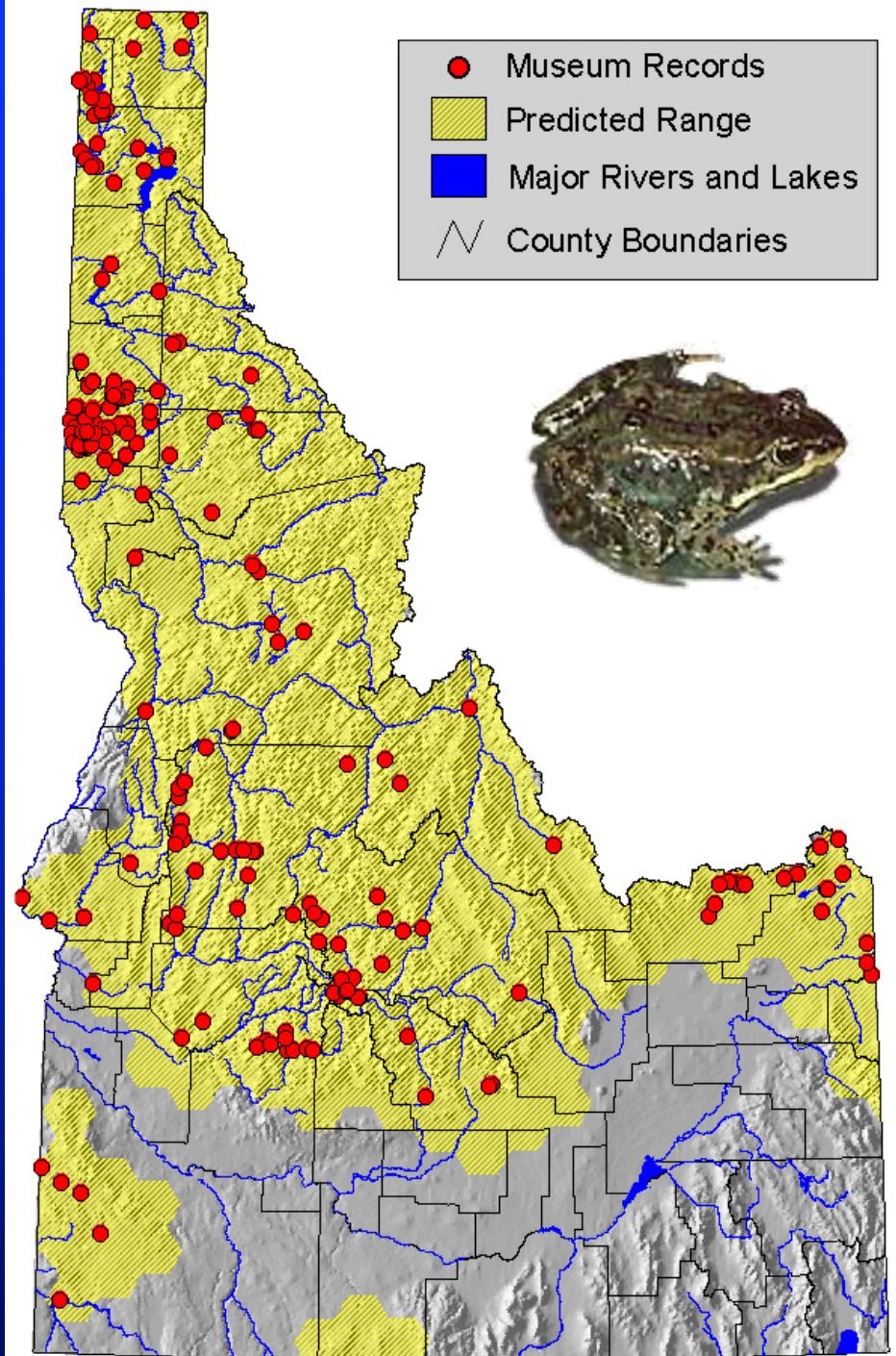
Eggs



Tadpole



Columbia Spotted Frog Distribution and Habitat



Reptiles of Big Creek Drainage

Lizards ?

Sagebrush Lizard ?

Western Skink ?

Snakes

Rubber Boa

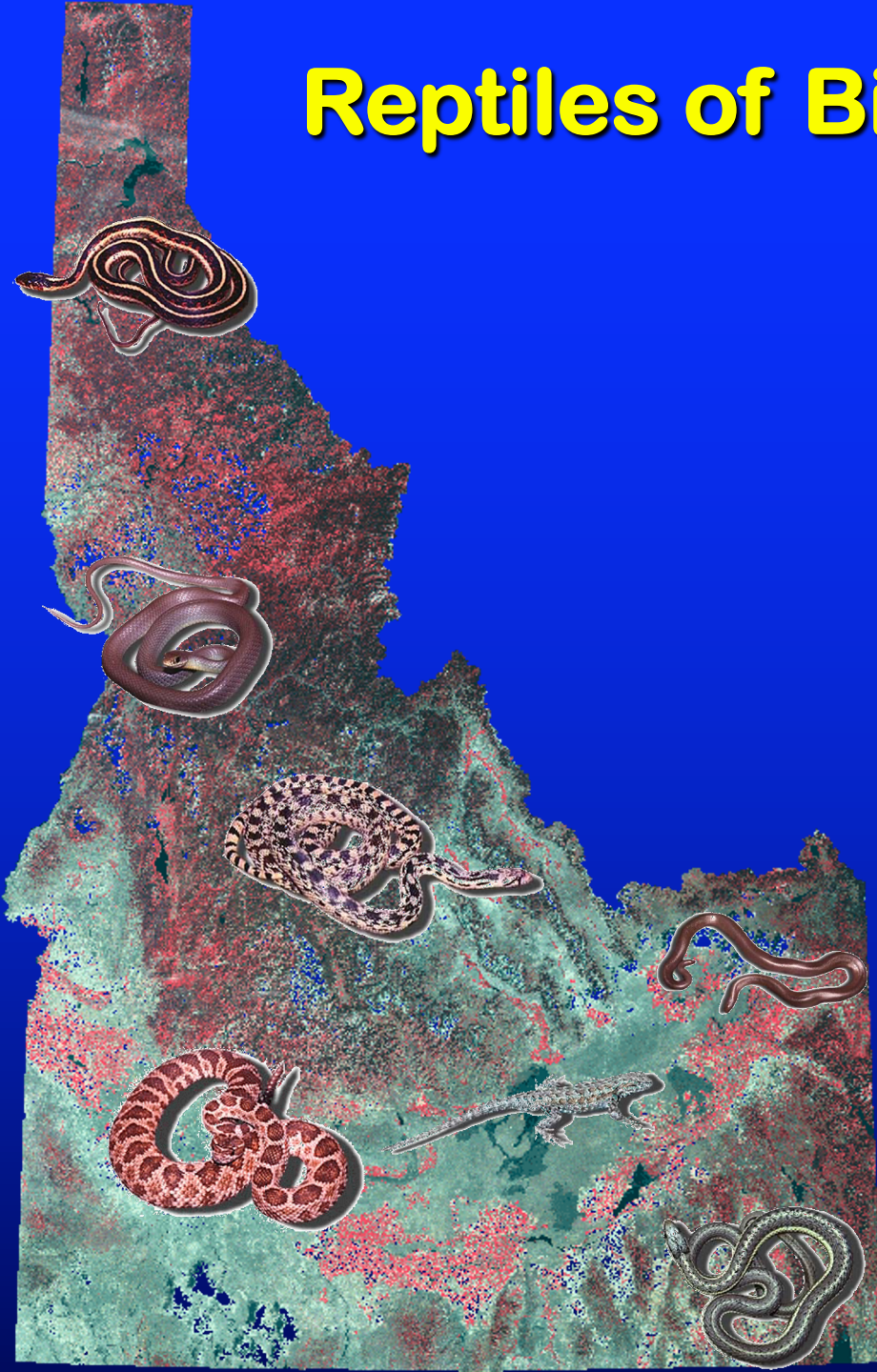
Racer

Gopher Snake

Western Terrestrial Garter Snake

Common Garter Snake ?

Prairie Rattlesnake

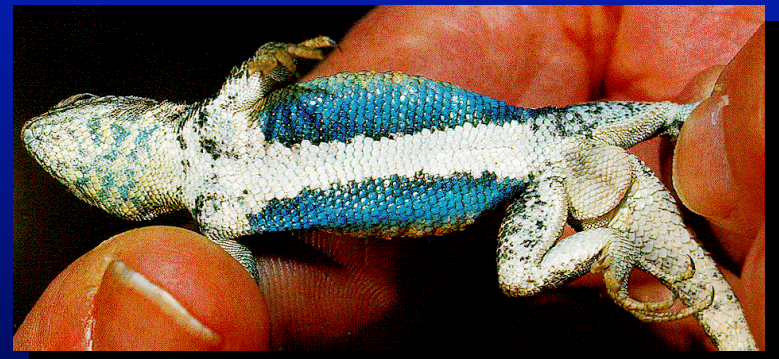


Common Sagebrush Lizard ?

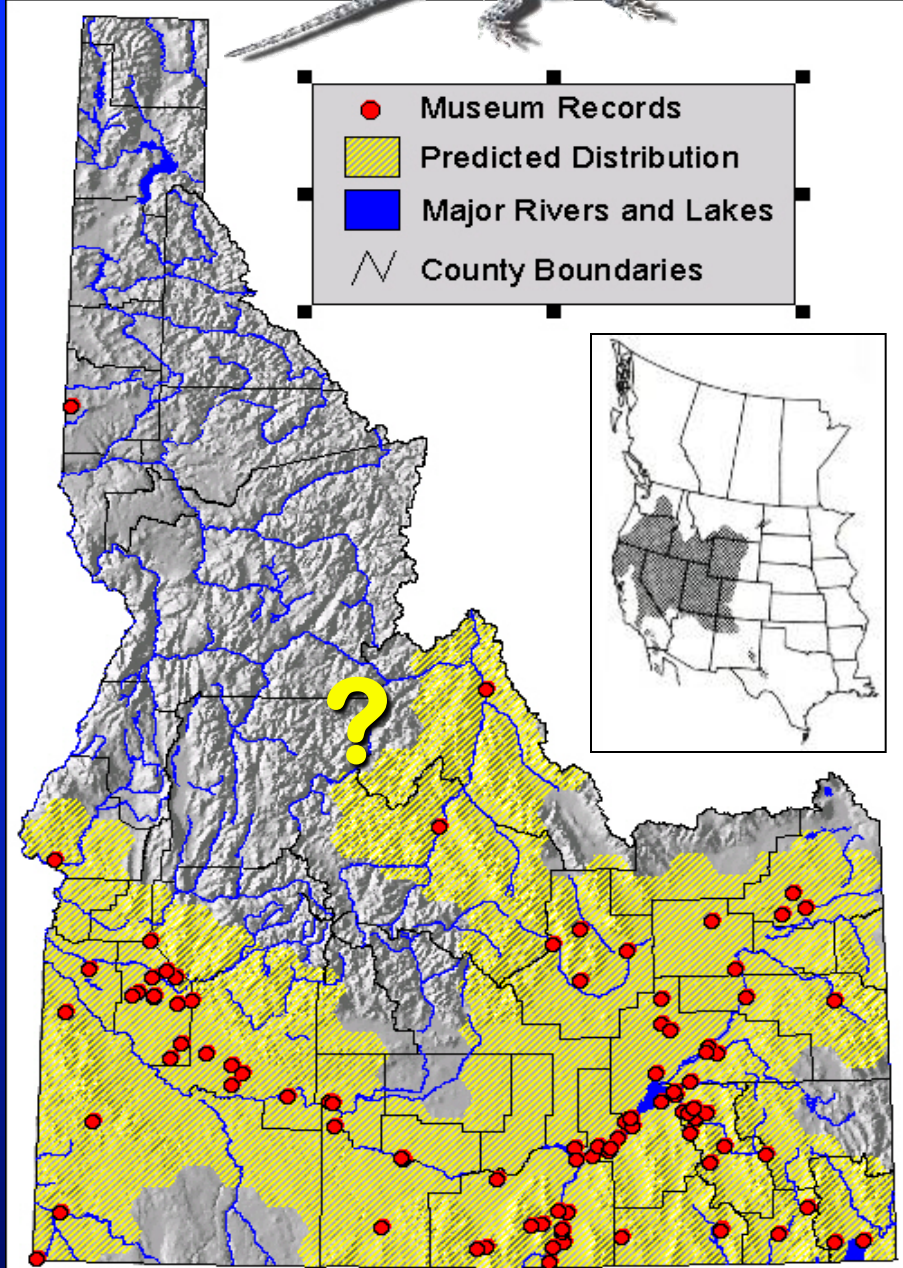
- Total length:
5.9 inches / 150 mm
- Snout vent length:
2.4 inches / 62 mm
- Striped appearance
- small pointed dorsal scales



(Storm and Leonard 1995)



Sagebrush Lizard (*Sceloporus graciosus*)



Western Fence Lizard ?

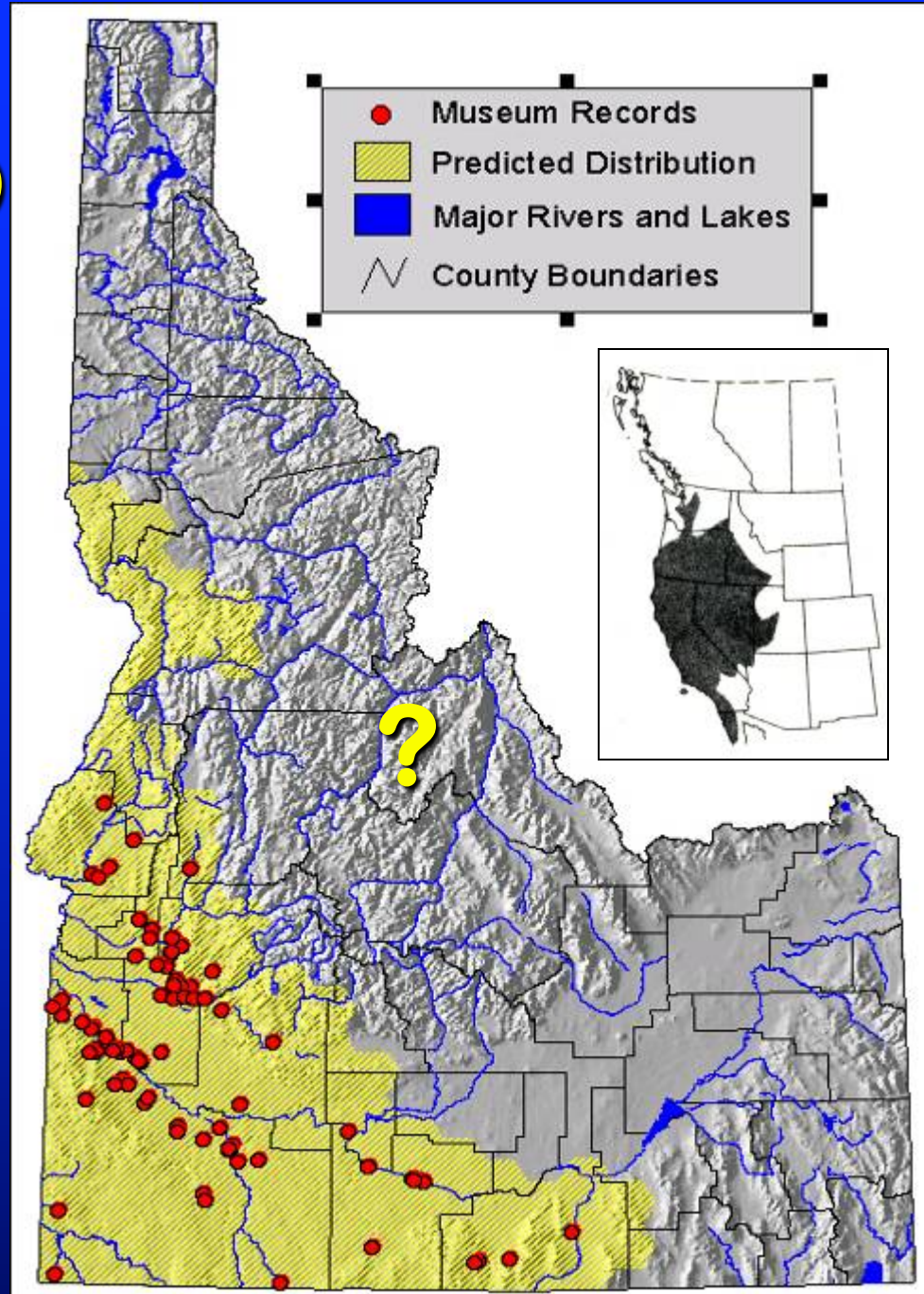
- Total length:
6.6 inches / 168 mm
- Snout vent length:
3.2 inches / 81 mm
- Variable coloration –
often with horizontal bands
- Larger, more pointed dorsal scales
- “rougher” appearance than sagebrush lizard



(Storm and Leonard 1995)

Western Fence Lizard

(Sceloporus occidentalis)



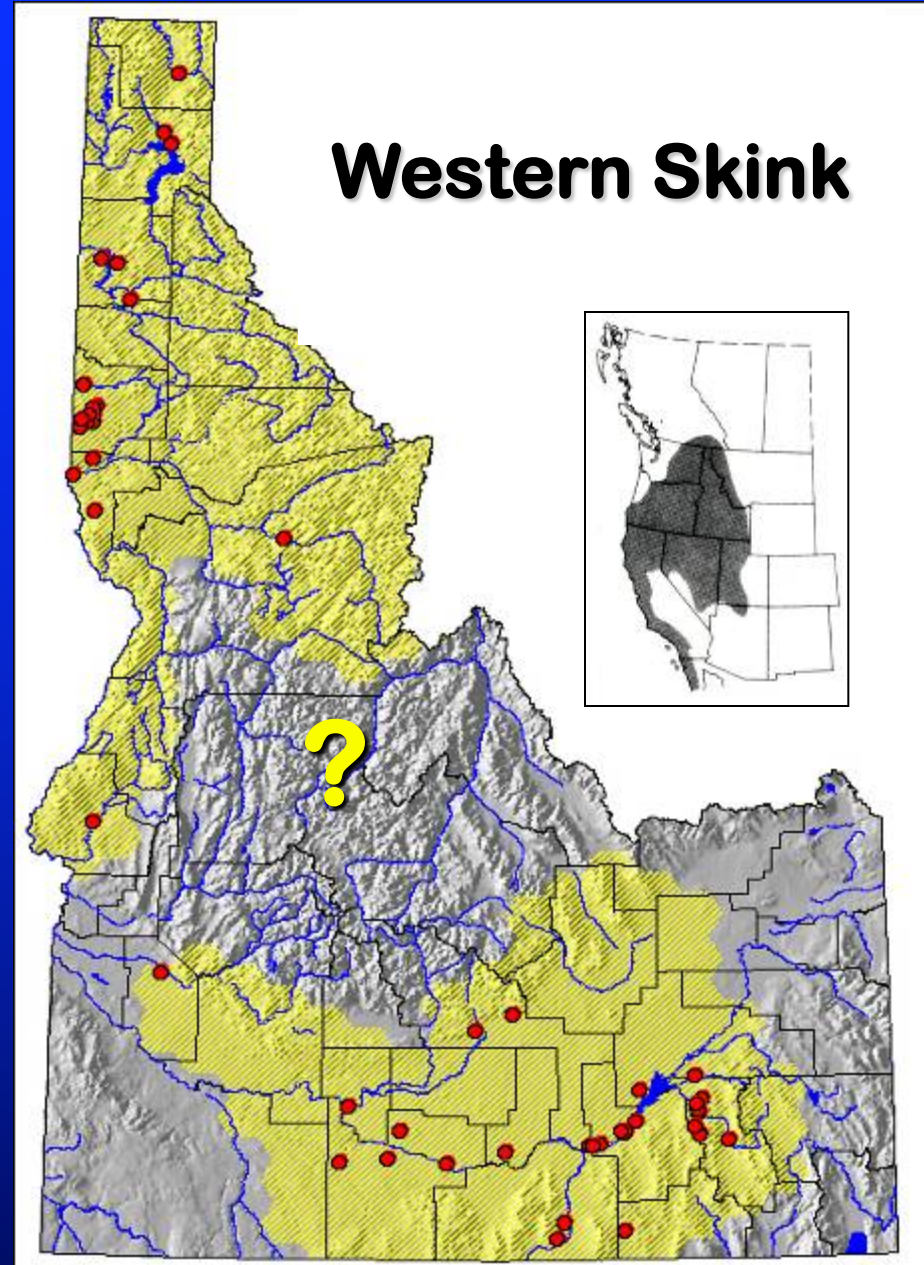
Western Skink

- Total length:
7.9 inches / 201 mm
- Snout vent length:
3 inches / 76 mm
- Dorsal stripes
- Smooth, shiny scales
- Blue tail in juveniles and
some adults



(Storm and Leonard 1995)

Western Skink (*Eumeces skiltonianus*)



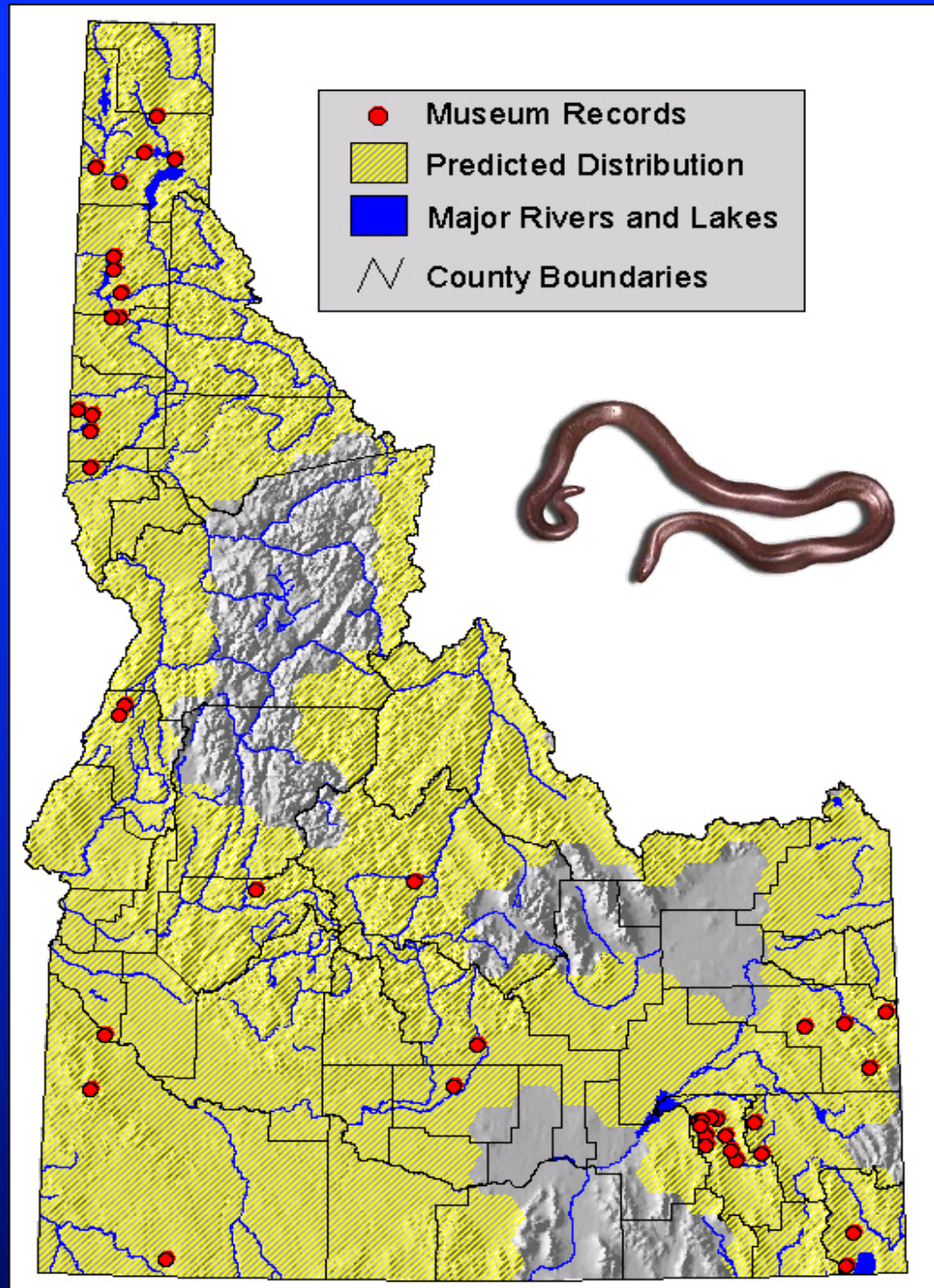
Rubber Boa (*Charina bottae*)

- Medium Size
Total length:
17 - 27 inches / 43 - 69 cm
- smooth scales
- short, blunt tail
- males with anal spurs
- light tan to dark brown dorsally
- cream colored ventrally
- small eyes with vertical pupils
- “rubbery” appearance and feel



Michael Dorcas

Rubber Boa Distribution

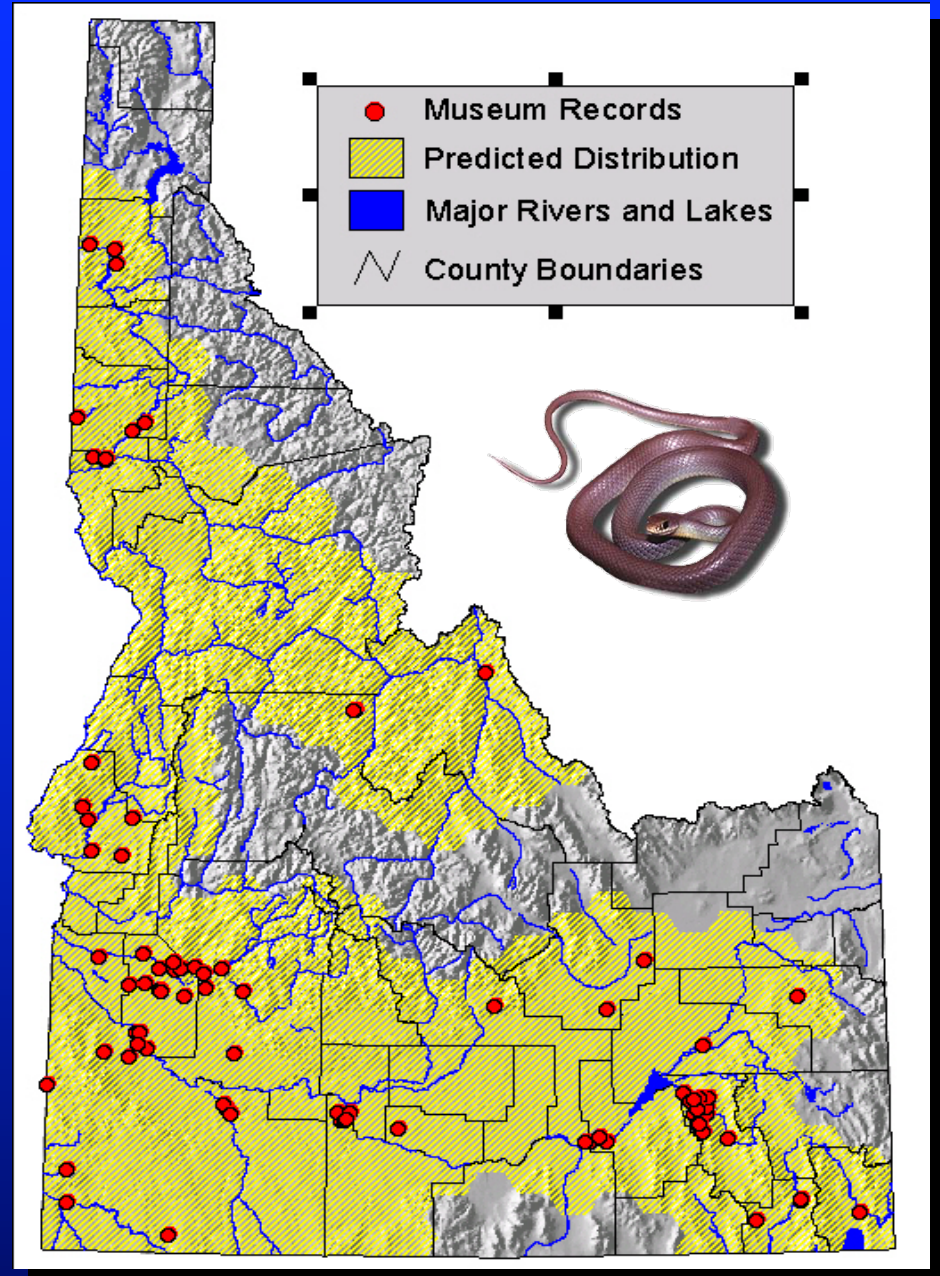


Racer (*Coluber constrictor*)

- Medium size
Total length:
20-48 inches / 51 – 122 cm
- Uniform dorsal color of tan, olive, or grayish brown (adults)
- Blotched juveniles
- Large eyes with round pupils
- Smooth scales



Racer Distribution and Habitat



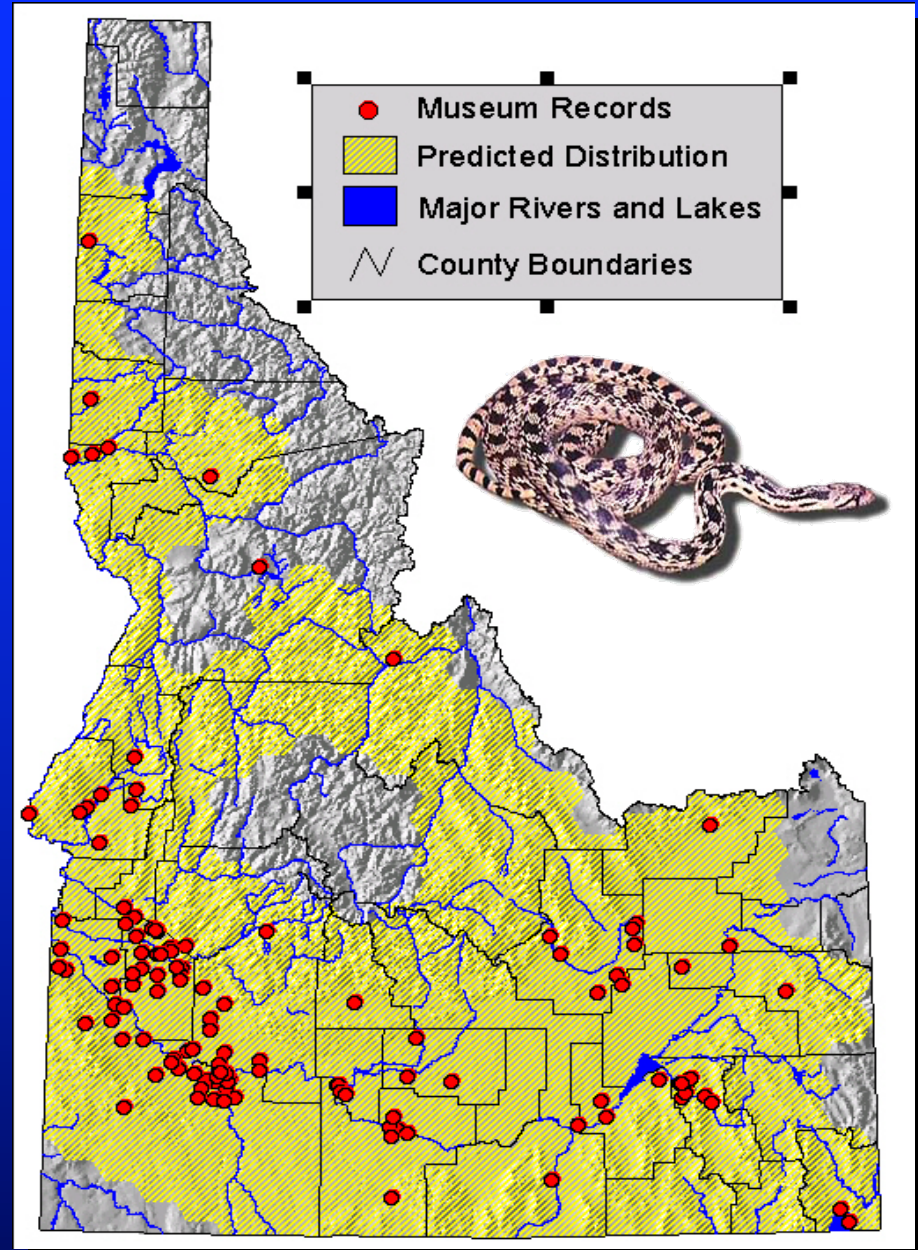
Gopher Snake

(Pituophis catenifer)

- Medium size
- Light ground color
- Blotches / Rings
- Eye mask
- Keeled dorsal scales
- Behavior



Gopher Snake Distribution and Habitat

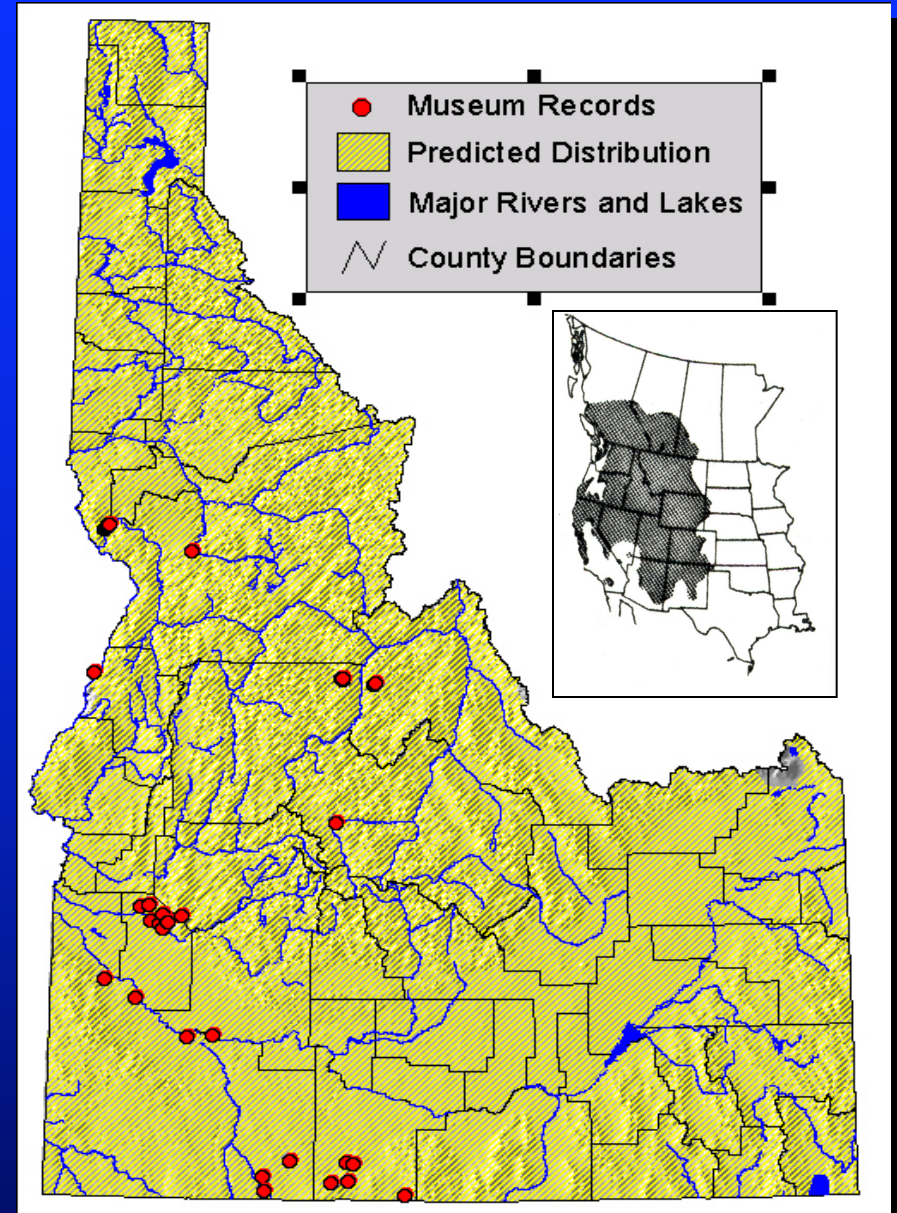


Terrestrial Garter Snake

- Medium size
Total length:
18 - 43 inches / 46 - 109 cm
- Variable ground color
- Usually with light vertebral and lateral stripes
- Dorsal spots invade stripe
- 8 upper labial scales
- Keeled dorsal scales



Terrestrial Garter Snake Distribution and Habitat



Common Garter Snake (*Thamnophis sirtalis*)

- Medium size
Total length:
18 - 36 inches / 46 - 91 cm
- Dark ground color
- Distinct vertebral and lateral stripes
- Often with red spots
- Usually 7 upper labial scales
- Keeled dorsal scales



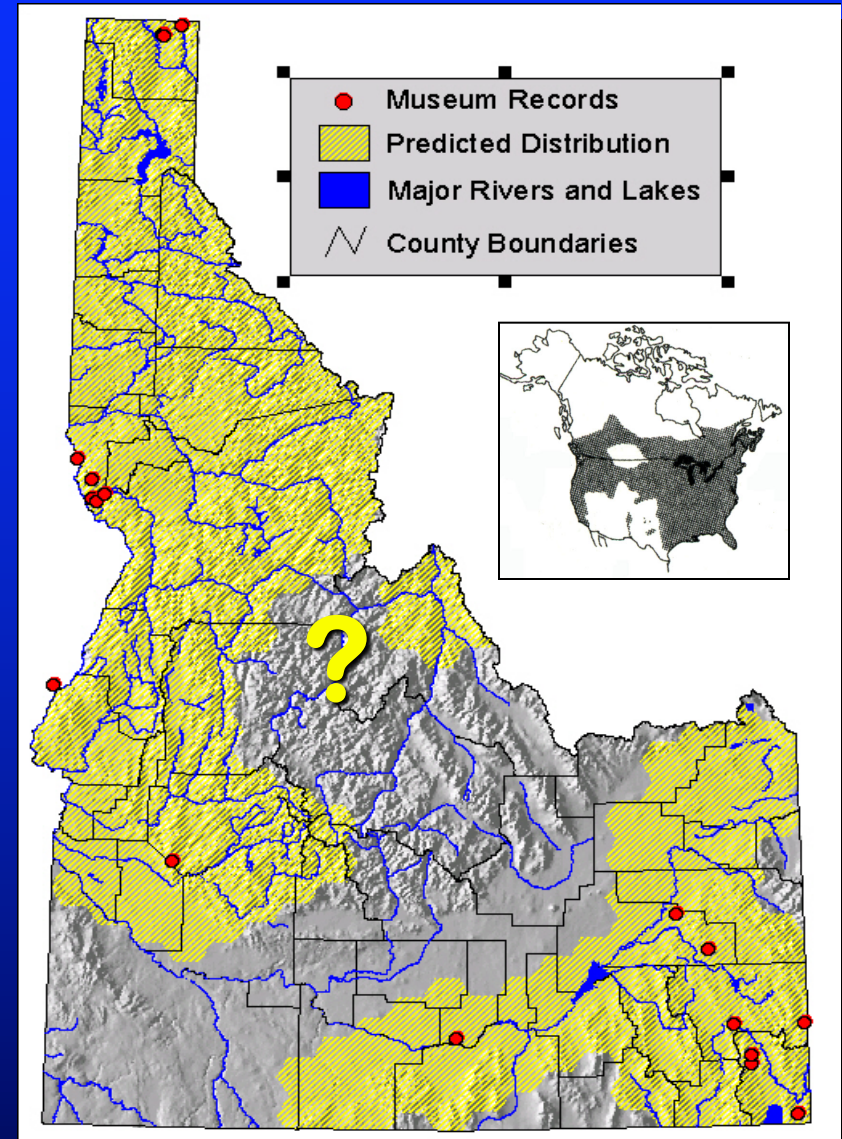
Common



Terrestrial

Common Garter Snake

(*Thamnophis sirtalis*)



Prairie and Western Rattlesnakes (*Crotalus viridis*) and (*Crotalus oreganus*)

- Large size
Total length:
15 - 48 inches / 38 - 120 cm
Stout body
- Light ground color, dark blotches, rings on tail
- Triangular head, narrow neck
- Vertical pupils
- Loreal pits
- Keeled dorsal scales
- Rattle



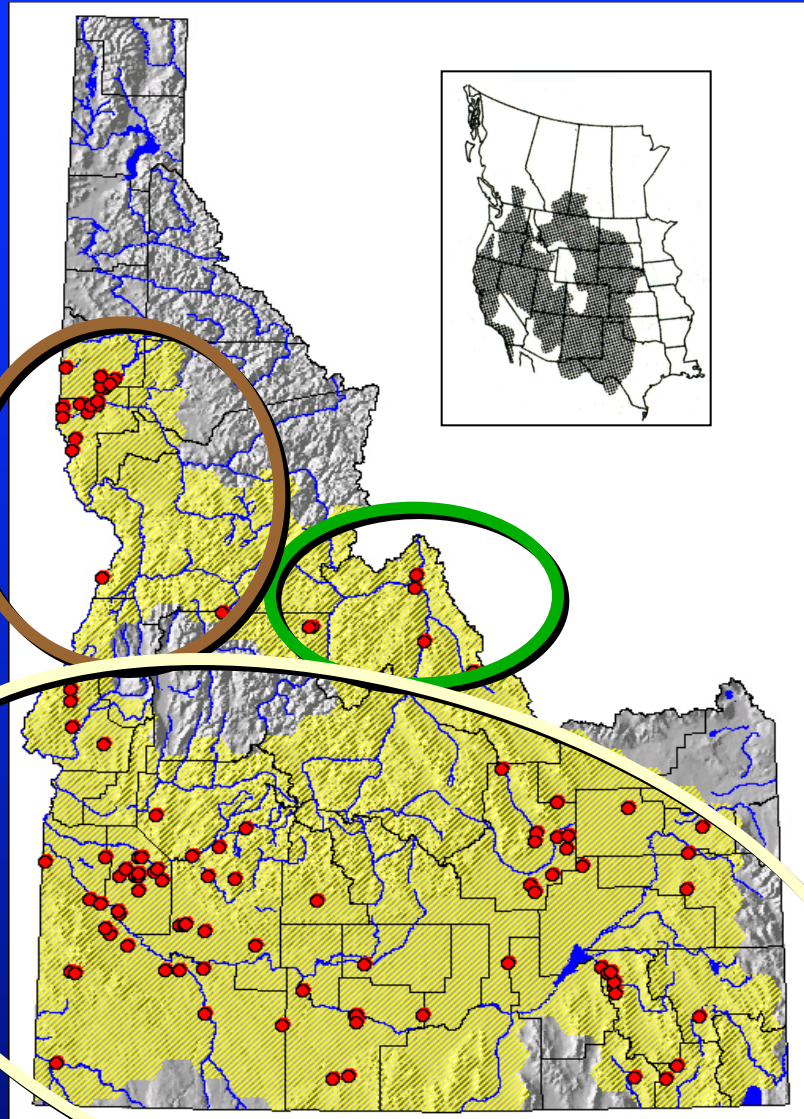
Idaho Rattlesnake Distribution



Crotalus o. oregonus



Crotalus o. lutosus



Crotalus viridis



Crotalus o. lutosus

Prairie Rattlesnake Habitat

