Nature Mapping Training
Amphibians and Reptiles of Teton County
March 30, 2015

Goal:

Increase awareness, understanding, and enjoyment of these critters.

Increase Nature Mapping Observations (only 12 verified observations in 2014; only 67 total for all Nature Mapping). The least mapped group of all! We can do better.

What is a reptile vs. an amphibian?

Amphibians and reptiles are distantly related classes of vertebrates, lumped together under the name 'herpetofauna'. Both are ectotherms (or, "cold-blooded"), which means their body temperatures and metabolic functions depend on the temperature of the immediate environment, unlike birds and mammals. Amphibians and reptiles are inactive in cold temperatures, and have various strategies for surviving the winter. Many species bask in the sun to raise their body temperatures, which helps them to digest food and grow.

Amphibians – frogs, toads, and salamanders – have unique skin characteristics among vertebrates; their skin is naked (no scales), glandular (secretes substances), and permeable to water and air. To the touch, amphibians typically feel moist or slimy. The word "amphibian" is derived from the Greek for "two lives", referring to the two distinct life stages, in water and on land. All amphibians in our region deposit their eggs in quiet water --- in masses, strings, or single packets -- surrounded by a gel-like material. After rapid development for a week or more, free-swimming larvae emerge , called 'tadpoles' for frogs and toads, and just 'larvae' for salamanders. In another 4-8 weeks, depending on water temperature and species, they go through metamorphosis to obtain their adult shapes. With legs and lungs, they emerge from the ponds, looking similar to their parents but smaller. Our local species spend much of their adult lives on land, but all must return to the water to breed. They take up to 4 years to reach reproductive maturity. Amphibians migrate among summer and winter habitats, and they often surprise people by turning up in unexpected places.

Amphibians of Teton County (see the Pocket Guide to Amphibians for identification):

1. Boreal Chorus Frog - *Pseudacris maculata (formerly Pseudacris triseriata maculata)*
2. Western Toad – *Anaxyrus boreas* (formerly Boreal Toad – *Bufo boreas boreas*)
3. Columbia Spotted Frog – *Rana luteiventris*
4. Western Tiger Salamander - *Ambystoma mavortium (*formerly *Ambystoma tigrinum)*
5. American Bullfrog - *Lithobates catesbeianus* –(formerly *Rana catesbeiana*) – Not native, introduced in the 1950s, currently known only at Kelly Warm Springs and surrounding areas.
6. Northern Leopard Frog - *Lithobates pipiens (*formerly *Rana pipiens).* Possibly extirpated in Teton County, no confirmed observations since 1995.

Note: Handling amphibians can be risky for them because of their permeable skin. Never handle an amphibian unless your hands are clean and wet (rinse with pond water). Another risk for amphibians is humans spreading disease among animals or wetlands. After every outing to amphibian habitat, clean your footwear (with soap and water followed by a brief soaking in mild bleach solution) and let them air-dry.

Reptiles – snakes and lizards – have scaly skin, typically dry to the touch, which they shed periodically. Some species lay eggs, while others bear live young. Unlike amphibians, snakes and lizards have no larval stage and do not depend on wetlands for reproduction. They are observed here from spring through early autumn, and spend the winter underground dens, sometimes communally. Four species of reptiles are currently known in Teton County—three snakes and one lizard. None of the snakes here are venomous, but some may bite if handled. Keep your eyes out…it is possible that other reptile species live here but have not been noticed yet.

Northern Rubber Boa – *Charina bottae* - This snake has small, smooth scales, and a uniform color ranging from tan, to olive green, or dark brown. It is described as the 'two-headed snake' because the blunt tail resembles the small head with its inconspicuous eyes. Maximum size is 28" in length. Rubber Boas are typically docile and slow-moving. They can occupy a wide variety of habitats, but are most often seen near water in riparian zones with rocky areas and shrubs or trees. Young are born live in small litters of 2 -8 snakes, late summer or fall.

Northern Rubber Boa

Photo by Charles Peterson

Wandering Gartersnake - *Thamnophis elegans vagrans* – This is the most frequently seen reptile in Teton County. You may also see the common name 'Western Terrestrial Gartersnake' referring to the species. Wandering Gartersnakes are olive green, gray, or brownish, with 3 yellow stripes running the length of the body; one along the top of its back (mid-line) and one along each side of its body. These stripes may be faint or barely visible. Rows of dark squares or spots occur between the stripes. Maximum length is about 30", most are smaller. Wandering Gartersnakes range widely, but they are highly aquatic and often forage in water. They mate in the spring and bear 4-19 live young in late summer. They overwinter communally, usually in rocky areas, in underground spaces that can include places disturbed by humans such as bridge supports or building foundations.

Wandering Gartersnake

Photo by Charles Peterson

Valley Gartersnake - *Thamnophis sirtalis fitchi*. This snake is also referred to by its species name, the Common Gartersnake *(Thamnophis sirtalis)*. Do not be confused by the name -- this is the much rarer of the two gartersnake species in Teton County and in Wyoming. This snake has a dark, nearly black, background color, with 3 bright yellow stripes running down the middle of the back and along the sides, and irregular red spots on the sides. To distinguish from Wandering Gartersnakes, look for the red blotches. Maximum length is about 34". Usually found near permanent surface water; may co-occur with Wandering Gartersnakes. They probably mate in spring and bear live young in late summer. This species has been found (infrequently in recent years) in the northern half of Teton County; it may have been more widespread and common in the past.

Valley Gartnersnake

Photo by Charles Peterson

Northern Sagebrush Lizard – *Sceloporus gracosus graciosus* - If you see a lizard in Teton County, it is almost certainly this species. This species is grayish or light brown in color, with dark and light stripes running the length of the body, or the stripes may resemble a pattern of checks. It has dry skin, spiny scales, claws, and a long slender tail. Total maximum size is about 5" long, including the tail. Males have bright blue patches on the belly and sides; females may have light blue underneath and orange along the sides. Found in rocky, dry areas with logs, shrub cover, and good sun exposure. Typically seen swiftly scurrying for cover, or perched on a rock or log. After breeding in early summer, eggs are buried in soil, hatching in mid to late summer. Sagebrush lizards are infrequently encountered, in river valleys of Jackson Hole.

Northern Sagebrush Lizard

Photo by John Cossel, Jr.

Other reptiles rarely observed here, or with ranges close to Jackson Hole:

Great Basin Gophersnake – *Pituophis melanoleucas deserticola.* Has been observed in the Hoback Junction area, and very rarely in Jackson Hole in former decades.

Greater Short-horned Lizard -- *Phrynosoma hernandesi.* Reported south of Teton County

Turtles. Very rarely reported, not confirmed. Possibly released/escaped pets.

Resources

Websites:

Toad Trackers – great website sponsored by the Wyoming Biodiversity Institute and Wyoming Natural Diversity Database. Includes natural history of amphibians, species list with descriptions, sounds, photos. You can get the Pocket Guide to Amphibians of Wyoming from this site.
https://wyobiodiversity.net/products/wyoming-amphibian-identification-guide

Atlas of Birds, Mammals, Amphibians, and Reptiles of Wyoming. Wyoming Game and Fish Department - Amphibians and Reptiles are on pages 162-170. Includes names, management status, habitat, comments, and distribution in chart form. PDF available on line:
https://wgfd.wyo.gov/WGFD/media/content/PDF/Wildlife/Nongame/WILDLIFE_ANIMALATLAS.pdf

Wikipedia: a list of species of Wyoming and some brief descriptions:
http://en.wikipedia.org/wiki/Amphibians_and_reptiles_of_Wyoming

Amphibian conservation activism: http://www.savethefrogs.com/

Books:

Amphibians & Reptiles of Yellowstone and Grand Teton National Parks (paperback). 1995.
By Edward D. Koch and Charles R. Peterson. Out of print but possibly still available from book dealers. Has excellent natural history information about our local species.

A Field Guide to Western Reptiles and Amphibians (Peterson Field Guides). 2003. By Robert C. S. Stebbins.

POCKET GUIDE TO THE AMPHIBIANS of WYOMING

www.toadtrackers.org

Sponsored by:

WYNDD
Wyoming Natural Diversity Database

Wyoming Game & Fish Department

Biodiversity INSTITUTE

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Guide Design by Kristen Nielsen

KEY TOAD FEATURES

Snoberger

Cranial Crest
Warts
Dorsal Stripe

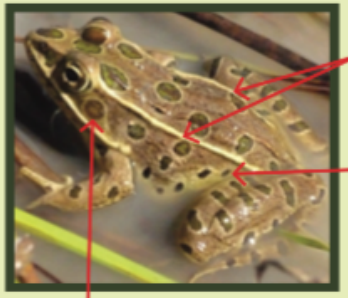
Brady

WYNDD

Throat is often dark on breeding **males**

Nuptial Pads (dark calluses on thumb and first finger of breeding **males**)

KEY FROG FEATURES



Dorsolateral Folds

Groin

Tympanum (ear drum)

Thumb is swollen on breeding **males**

Tiger Salamander
Ambystoma mavortium

EGGS

Snoberger

PAEDOMORPH
(AQUATIC ADULT)

Snoberger

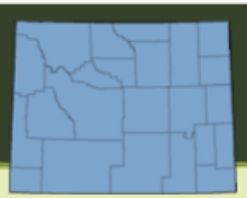
LARVA

Greene

ADULT (TERRESTRIAL)

Abernethy

Tiger Salamander
Ambystoma mavortium



Identification (terrestrial adult)

- Only salamander in Wyoming
- Dorsal color: black or dark green with variable mottling of yellow or olive blotches, stripes, or spots
- Smooth skin, long tail
- Total length: ~5.5 to ~8 inches

WGFD

Paedomorph (aquatic adult)

- Alternate adult stage resembles very large larvae (gills present)
- Dark green or olive, often with small black spots or blotches
- Total length: ~8 to 12 inches

Eggs & Larvae

- Eggs attached to submerged vegetation singly or in long cluster of 2-120 eggs.
- Larvae are olive green with small black blotches, wide heads, and **long, feathery gills**

Snoberger

Breeding Habitat

- Permanent or temporary, natural or man-made ponds, pools, stock tanks, and backwater or slow moving areas in creeks

www.toadtrackers.org

Western (Boreal) Toad
Anaxyrus boreas

EGGS

Patla

METAMORPH

Weinmann

TADPOLE

Ochsenfeld

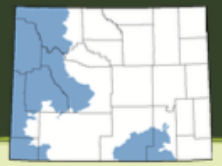
ADULT

Estes-Zumpf

JUVENILE

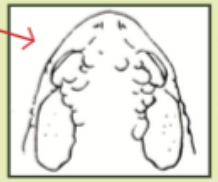
Estes-Zumpf

Western (Boreal) Toad
Anaxyrus boreas



Identification

- Dorsal color: light olive to dark brown with dark raised warts
- White dorsal stripe
- Ventral color: white with black spots
- Size: ~3/4 inch (metamorph) to ~4.5 inches (adult)
- **No cranial crest**



Baxter & Stone 1980

Weinmann

Eggs & Tadpoles

- Egg strings with lots of jelly; usually wrapped around vegetation
- Tadpole eyes are medial
- Uniformly dark black tadpoles with anal vent on midline

Breeding Habitat

- Shallow water in ponds, flooded meadows, and slow moving or pooled water on the edge of streams

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Boreal Chorus Frog
Pseudacris maculata

EGGS

Snoberger

TADPOLE

Estes-Zumpf

Bish

JUVENILE

Greene

METAMORPH

Ochsenfeld

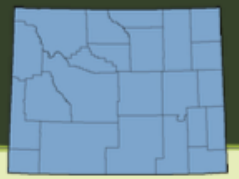
ADULT

Hamilton

ADULT

Estes-Zumpf

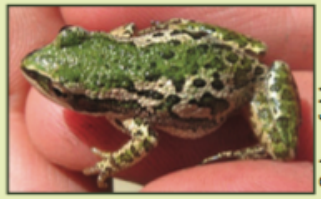
Boreal Chorus Frog
Pseudacris maculata



Identification

- Smallest frog in Wyoming
- Size: 1/2 inch (metamorph) to ~1.5 inches
- Dorsal color: tan, green, or rust red
- Dorsal pattern highly variable, typically 3 sets of stripes down the back, but stripes often broken into spots
- Dark mask typically extends from nose to groin as a stripe
- **No dorsolateral folds**
- Often heard rather than seen. Call sounds like running a thumb nail along a comb (*criiiiiiiiiik*)

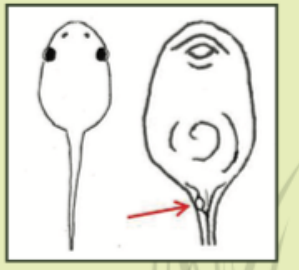
Bateson



Ochsenfeld

Eggs & Tadpoles

- Small egg clusters (less than 1 inch) wrapped around vegetation
- Only tadpole in WY with ***lateral eyes*** (eyes stick out to sides and form part of the body's profile)
- Anal vent is on the side



Breeding Habitat

- Shallow water with emergent vegetation (ranging from wet meadows to reservoirs)

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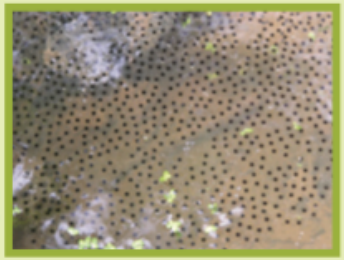
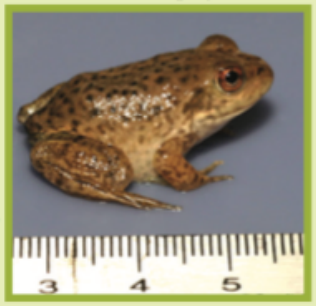
American Bullfrog
Lithobates catesbeianus

EGGS



WGFD

METAMORPH

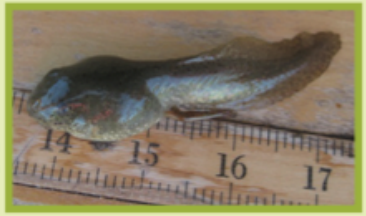


© Gary Nafis

JUVENILE

© Gary Nafis

TADPOLE

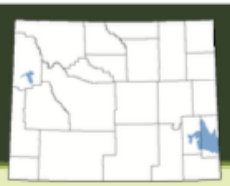


WGFD

ADULT

Engbrecht/Lannoo

American Bullfrog
Lithobates catesbeianus



Identification

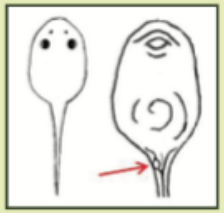
© 2006 James H. Harding

- Largest frog in Wyoming (may be introduced)
- Size: ~2 inches (metamorph) to ~6 inches (adult)
- Dorsal color: light green to dark olive or brown
- Dark spots or dark mottling
- Ventral color: cream to yellow with dark mottling
- **Dorsolateral folds end behind the tympanum (not continued down back)**

Eggs & Tadpoles

Engbrecht/Lannoo

- Eggs in large floating sheet on surface (1 to 5 feet wide)
- Tadpoles can reach up to 5.5 inches
- Tadpole eyes are medial; anal vent is on the side



Breeding Habitat

- Shallow portions of permanent water bodies with lots of vegetation; prefer warm water

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Northern Leopard Frog
Lithobates pipiens

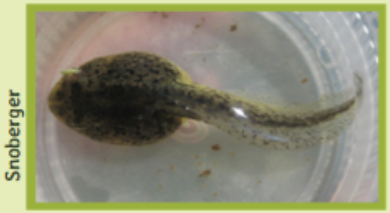
EGGS

Snoberger

METAMORPH

Vogel

TADPOLE



Snoberger

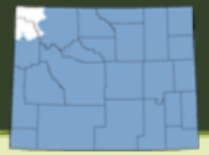
ADULT (GREEN)

Keehn

ADULT (BROWN)

Greene

Northern Leopard Frog
Lithobates pipiens



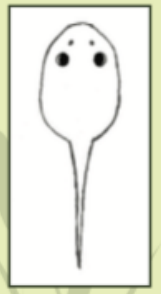
Identification

- Dorsal color: bright green, olive, or brown
- **Large, dark oval spots with pale edging**
- Skin is relatively smooth
- Ventral color: creamy white with no red present (on healthy frogs)
- **Prominent pale dorsolateral folds** from the eye down the length of the body
- Obvious typanum (ear)
- Size: 1 inch (metamorph) to ~4.5 inches (adult)

Vogel

Eggs & Tadpoles

- Eggs in round cluster ~3 to 5 inches in diameter
- Eggs either on the bottom or attached to vegetation
- Tadpole eyes are medial and anal vent is on the side



Breeding Habitat

- Shallow water in marshes and semi-permanent or permanent ponds (beaver ponds, stock ponds, etc.), or slow moving backwater areas along rivers or streams

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Columbia Spotted Frog
Rana luteiventris

EGGS

Patla

TADPOLE

Charles Peterson

METAMORPH

Patla

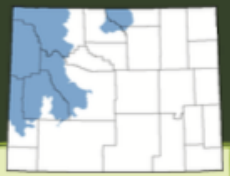
JUVENILE

Patla

ADULT

Brady

Columbia Spotted Frog
Rana luteiventris



Identification

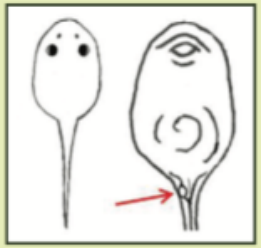
- Size: 3/4 inch (metamorph) to ~3.9 inches
- Dorsal color: tan to dark olive or brown
- **Irregular dark spots, often with light centers**
- Dorsal skin has warty texture
- Dorsolateral folds present
- **Red to orange lower abdomen and legs**

Leuenberger

Eggs & Tadpoles

- Eggs in round cluster (~3 to 8 inches)
- Egg masses are free floating and often in large communal clusters
- Tadpole eyes are medial, anal vent is on the side

Leuenberger



Breeding Habitat

- Shallow stagnant or slow-moving water ranging from temporary ponds and marshes to lakes and backwater areas of streams

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