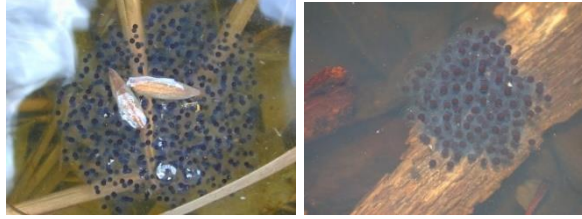


Egg masses

Note: THIS IS NOT A COMPLETE GUIDE. Species included here are all those most likely to be confused with eggs of the target species

Lithobates sylvaticus (Wood Frog)

- fist-sized masses, **black embryos with white underside**
- **no outer layer** around the egg mass
- clear outer matrix or may be greenish with algae in older masses
- **commonly laid in clusters** or large floating mats in warm areas of the pool
- may also be laid singly attached to vegetation



Ambystoma maculatum (Spotted Salamander)

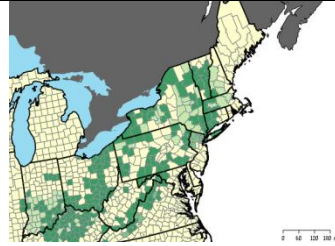
- Female lays single large or many small masses (30-250 eggs) 1-6 inches in diameter
- individual masses are surrounded by **outer, stiff gelatinous matrix**
- entire mass may be **clear or white/opaque**, masses become green with algae with age
- may be laid communally or singly, usually attached to vegetation



Ambystoma jeffersonianum (Jefferson Salamander)

Jefferson salamander:

- eggs very cryptic; laid in **small, tubular clusters** of 12-75 attached to vegetation near water surface
- masses are clear and of **loose consistency** (unlike spotted salamander eggs)

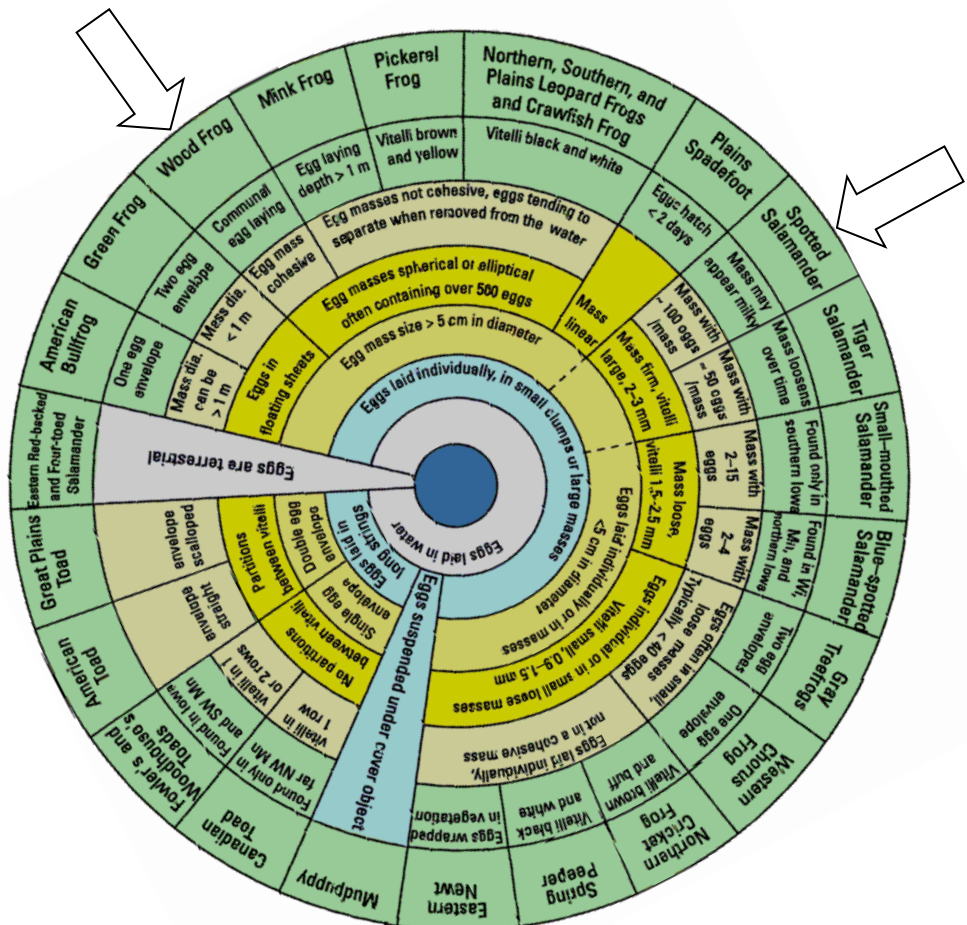
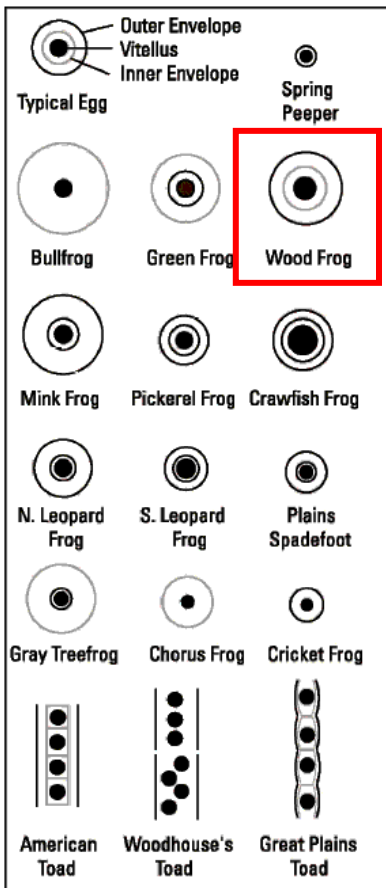


Lithobates palustris (Pickerel Frog)

- embryos are brown and yellow
- masses not cohesive, eggs tend to separate when removed from water
- eggs usually laid later in spring after wood frogs have hatched

Lithobates pipiens/sphenoccephalus (Northern/Southern Leopard Frog)

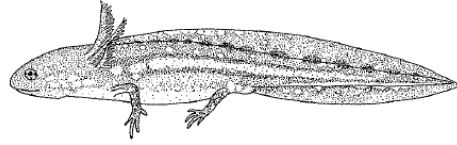
- embryos are black and white
- masses in flattened sphere, not cohesive, tends to separate when removed from water
- eggs usually laid later in spring after wood frogs have hatched



Larval Salamanders

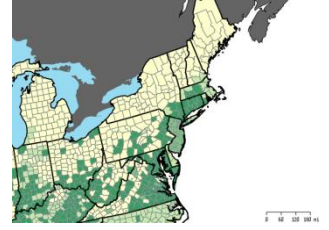
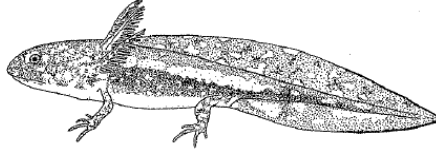
Ambystoma maculatum (Spotted Salamander)

- Dark grayish brown with dark gray markings along dorsal part of body and tail. **Distinct light spots along dorsum** and faint strip along sides onto tail.
- **Chin and/or throat unpigmented.** Dull dorsum. **Tail fin lacking blotches.**



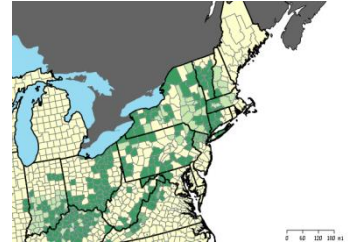
Ambystoma opacum (Marbled Salamander)

- Dark gray with light mottling on head and caudal fins. Light lateral stripe and wide, dark stripe below, both extending onto tail.
- Numerous light lateral spots.**
- Throat evenly pigmented.** Ventral surface with small scattered black dots, head not much wider than trunk



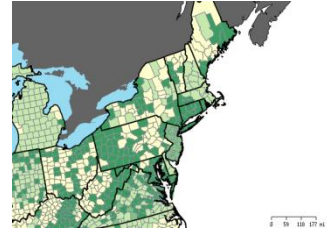
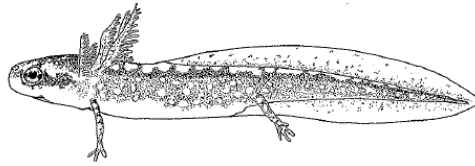
Ambystoma jeffersonianum (Jefferson Salamander)

- head distinctly wider than body, **tail fin intensely pigmented, appearing mottled with black;**
- toes not broad at base nor pointed at tip
- throat not well pigmented, pigment sometimes present bordering jaws
- paired **dorsal black spots or blotches** separated by middorsal black line, at times like dark saddles



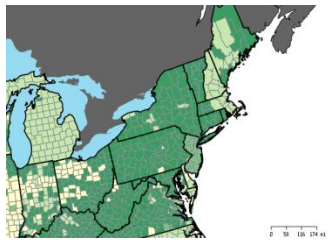
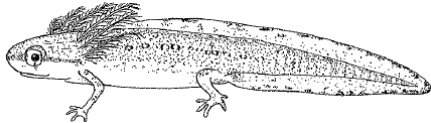
Hemidactylium scutatum (Four-toed Salamander)

- Large, **dark line from nostril through eye onto sides of head.** Head and body dark brown with tan or cream mottling and large light spots along dorsum.
- 4 toes on hind feet.**



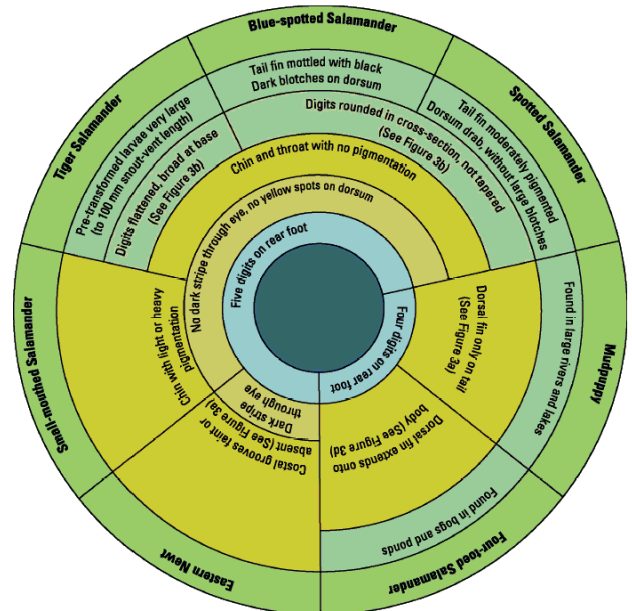
Notophthalmus viridescens (Eastern/Red-spotted Newt)

- No costal grooves.**
- Diameter of eye is larger than distance between nostril and eye. **Dark line from nostril through eye to side of head.**
- Yellow spots along dorsum.** Black markings along edges of caudal fin.



Notes:

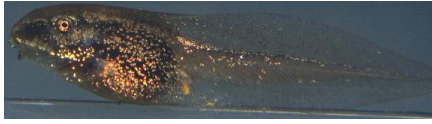
- Consider both the timing of your visit to the pool, the pool hydroperiod, and your geographic location when identifying species to decrease your choices considerably. We have bolded easiest defining characteristics for each species.
- Species included here are a possibility only after you have established the presence of external gills and four limbs.
- Marbled salamanders (if present) overwinter in the pools and are likely to be much larger than spotted salamander larvae. They may be visible in pools at the time of egg mass surveys and may be near metamorphosis at the time of dipnet surveys.
- Jefferson salamander larvae can be difficult to distinguish from spotted salamander larvae – take extra care with identification if both species occur at your location.



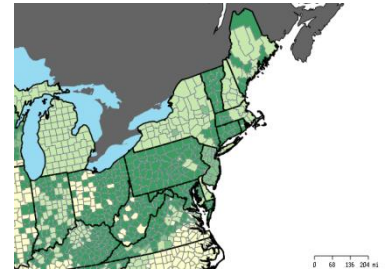
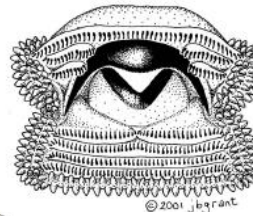
Tadpoles

Lithobates sylvaticus (Wood Frog)

- Eyes dorsal. Vent dextral.
- Tail fin not dark. **Tail fin clear**, fin tip sharply pointed.
- Intestinal coil visible.
- white lip line absent**
- Body globular; high dorsal fin originates at or slightly anterior to tail-body junction; dorsum uniformly dark, fins with no or little markings.
- 3/4 LTRF (three tooth rows on top, 4 on bottom)**

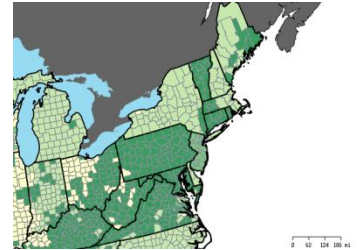
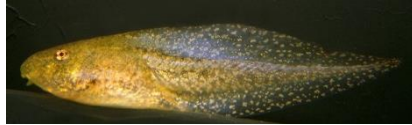


1 cm 4.2–4.8 cm total length



Lithobates palustris (Pickerel Frog)

- Eyes dorsal. Vent dextral. Intestinal coil visible.
- Tail fin heavily mottled**. Tail tip not dark.
- Dorsal fin with high arch and originates anterior to tail-body junction.
- White lip line absent**.

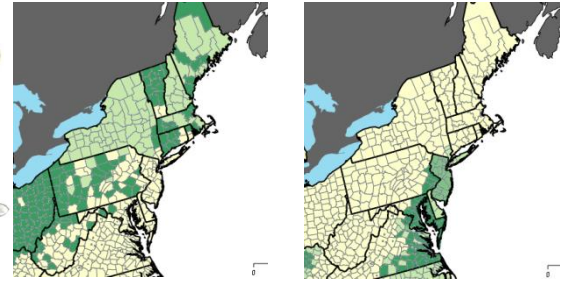


Lithobates pipiens/spheocephalus (Northern/Southern Leopard Frog)

- Eyes dorsal. Vent dextral.
- White lip line, white stripe down nose**.
- Dorsum brown to brownish green.
- Venter iridescent white. Intestinal coil visible.
- Tail fin heavily mottled.
- P-1 without medial gap, length of 1 side of A2/width of medial gap ~0.7.



1 cm

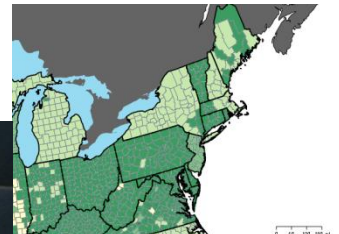


Lithobates clamitans (Green Frog)

- Eyes dorsal. **Venter opaque**. Intestinal coil not visible.
- Black spots poorly defined, not round. Dorsum dark or pale brown to gray with **few dots with fuzzy borders**.
- Fins commonly densely speckled. Venter densely white in large specimens, usually with silver patches of iridophores in younger specimens.
- Body notably depressed and long dorsal fin with low arch.



1 cm

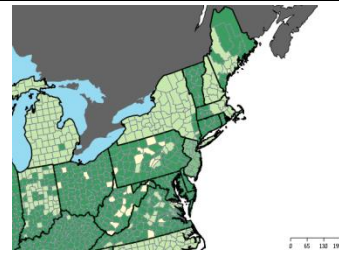


Lithobates catesbeianus (Bullfrog)

- Eyes dorsal. Vent dextral. Tail tip not dark.
- Ground color brownish to greenish. **Venter opaque white/tinged yellow**. Intestinal coil not visible.
- Round with defined dorsal spots**. Body not notably depressed and dorsal fin with notable arch.



16.2 cm total length



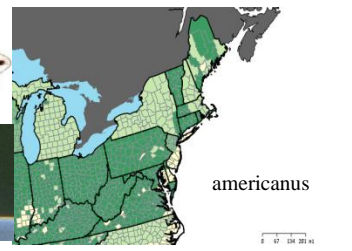
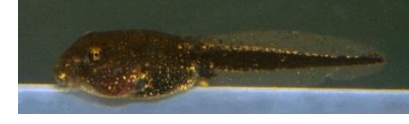
Anaxyrus americanus/fowleri (American Toad/Fowler's Toad)

- Eyes dorsal. Vent medial.
- Translucent tail fin** (free of pigment).
- Oral disc emarginated.
- Body black**
- AAME= **abundant golden iridophores** visible at slight magnification;
- AFOW= **abundant silver to brassy iridophores** = frosted / mottled appearance
- Lower white part of bicolored tail:
- BAME= ca. 25% of basal muscle height;
- BFOW=ca. 50% of basal muscle height.

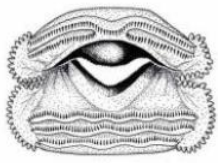


(American toad tadpole)

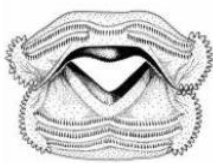
1.8–2.4 cm total length



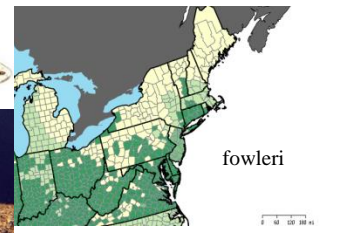
americanus



American Toad
Rana americana



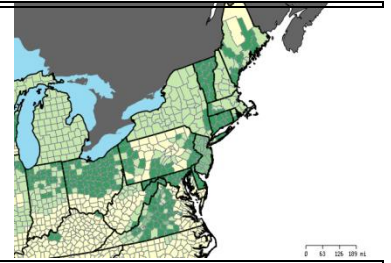
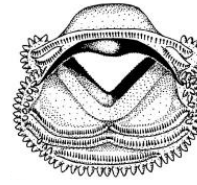
Fowler's Toad
Rana berlandi



fowleri

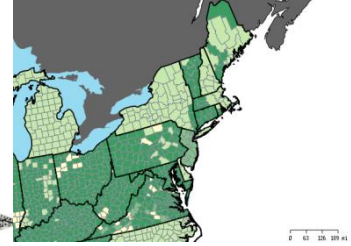
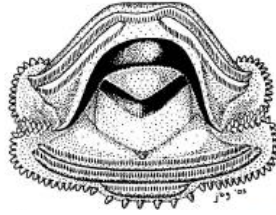
***Hyla versicolor/chrysoceleis* (Gray Treefrog)**

- Eyes lateral.
- Tail tip not dark; tail **often tinged red/orange**.
- Tail fin high**, located forward on body.
- Reticulated or mottled tail fin**, not clear near musculature.



***Pseudacris crucifer* (Spring Peeper)**

- Eyes lateral. < 35 mm TL.
- Tail tip not dark.
- Tail fin high, located forward on body.
- Clear area near tail musculature.**
- Dorsum of tail muscle may be crudely banded at least in younger stages, uniformly dark, or with irregular pale area over most of surface.
- Tail muscle in lateral view often bicolored in younger specimens but becomes more uniform with age; fins blotched in large tadpoles in some areas.
- Throat mottled with dark pigment. Body may be gold flecked.



1 cm

Notes:

- Consider both the timing of your visit to the pool, the pool hydroperiod, and your geographic location when identifying species to decrease your choices considerably. We have bolded easiest defining characteristics for each species.
- Tree frogs, spring peepers, and cricket frogs all have lateral eyes and are usually much smaller than wood frog tadpoles.
- Pickerel frogs and leopard frogs breed later in the season than wood frogs and are likely to be considerably smaller most of the time.
- Bullfrogs and green frogs often overwinter in pools that do not dry and will be considerably larger than wood frogs.

