

Species	Adult Size (cm)	Dorsal Background Coloration	Dorsal Pattern	Ventral Background Coloration	Ventral Pattern	Head Notes	Tail Notes	Limb Notes
Northern Two-lined Salamander	6-12	Yellow-brown	<u>Black lines bordering yellow-brown stripe</u>	<u>Yellow</u> under tail	None			<u>Equal size front and hind limbs</u>
Northern Dusky Salamander	6-11	Muddy brown to black	Adult: none; young: may show paired spots on back or lighter stripe on back with dark wavy edges	Cream	Flecks, darker under tail	<u>Light diagonal line</u> extending from eye to angle of jaw when young	Keeled	<u>Hind limbs thicker than forelimbs</u>
Spring Salamander	12-19	<u>Salmon-pink</u>	Dark reticulations	Light/pale pink	Some black flecks on throat	<u>Light lines, bordered by dark lines, run from eyes to nostrils;</u> squared snout	<u>Sharply keeled,</u> fish-like	
Four-toed Salamander	5-9	Orange-brown	Grooves make chevrons	Glossy enamel white	<u>Black spots on white background</u>		<u>Constriction</u> at base of tail	Four toes on hind feet
Eastern Red-backed Salamander	6-10	Flat red, sometimes dark brown/gray	Stripe (red) down center of back (on most), sometimes flecking	Cream	Dark <u>vermiculations</u> (worm trails)			
Eastern Newt	6-12	Adult: dark green; red eft: red-orange	<u>Red spots surrounded by black</u> along sides	Adult: yellow; red eft: orange	Adult: Black spots	<u>Line horizontally through the eye</u>	Laterally compressed, particularly in males	
Jefferson Salamander group*	15-18	Gray-brown	Solid color, sometimes with flecks; often with gold to light tan stripe on top of tail	Gray	None	Broad head, widely spaced nostrils/ <u>squared snout</u>	Laterally compressed	<u>Long toes</u>
Blue-spotted Salamander group*	9-12 (hybrids 15)	Black	<u>Blue spots/flecks</u> especially on sides	Almost black	None	Narrow, fairly <u>rounded snout</u> , nostrils close together	Rounded	
Spotted Salamander	11-21	Black	<u>Yellow spots</u> on black background	Gray	None	Broad head	Rounded	
Mudpuppy	20-33	Dark brown	Black spotting	White to gray	Sometimes has bluish black spots	<u>External gills</u> (red) throughout life; flat head; squared snout	Laterally compressed	Four toes on hind feet

*These species (Jefferson Salamander and Blue-spotted Salamander) have historically produced hybrids with each other; consequently, some individuals can be hard to identify, so we classify them into "groups" (e.g. Jefferson Salamander & related hybrids).

Species	Egg Size When Laid (mm)	Eggs Per Mass	Shape of Mass	No. Masses/Female	Size of Mass	Location	Egg Membranes	Egg Color	Timing of Oviposition
Northern Two-lined Salamander	2.5-3.0 4.5-5.0 w/ membrane	12-110 (VT avg 35)	Flat	1	50 x 32 mm	Underside of rock in stream (in water)	2	White to pale yellow	Mid April - June
Northern Dusky Salamander	3.0-4.5	5-40 (VT avg 19)	Globular cluster	1		Under mosses on logs (on land)	3	Cream to whitish	Late May through early August
Spring Salamander	3.5-4.0 9 w/ membrane	15-132 (VT avg 47)	Flat	1	130 x 170 mm	Underside of rock in stream or under streambed (in water)	3	Light yellow	Summer (June - July)
Four-toed Salamander	2.5-3.0	4-65 (VT avg 23)	Loose cluster	1		Under moss clumps (on land/tussocks over water)	2	Very lightly pigmented above, mostly transparent	Mid April to mid May
Eastern Red-backed Salamander	3.0-4.0	1-14 (VT avg 8)	Grapelike cluster	1		Within or beneath logs or rocks; suspended from roof of cavity (on land)	2	Pale yellow to yellowish white	Early June - late summer
Eastern Newt	1.5	1	<u>Single eggs</u>	NA	N/A	Leaves and stems of aquatic plants, leaves (in water)	3, elliptical	Dark brown and yellowish green	April - June
Jefferson Salamander group	2.0-2.5	7-40 (VT avg 15)	<u>Loose, elongate, sausage shaped</u>	Up to 16 (based on no. ova/ female)	5 cm x 2.5 cm	Attached to tree branches or vegetation (in water)	3, <u>vitelline membrane closely hugs edge of embryo</u>	Dark; green alga may colonize; polyploids may have many white non-viable embryos	Late March - early May
Blue-spotted Salamander group	1.5-1.6	<u>Single</u> (pure) or 2-4 (hybrids)	Poorly defined	56-225 (avg. ~225 ova/ female)		Leaf petioles, twigs, detritus, rocks (in water)	3, <u>vitelline membrane closely hugs edge of embryo</u>	Dark; green alga may colonize; polyploids may have many white non-viable embryos	April
Spotted Salamander	1.8-2.8	1-250 (VT avg 66)	<u>Firm, ovoid - cylindrical</u>	2-4	5-15 cm x 5-25 cm	Twigs, tree branches, aquatic plants, sometimes on bottom (in water)	2, <u>vitelline membrane well spaced from edge of embryo</u>	Dark; green alga may colonize; clear or cloudy white egg mass	Mid March - early June
Mudpuppy	5.0-6.5	18-174 (avg 77)	Flat	1	15-30 cm diameter	Beneath logs, rocks, boards (in water >0.5 m deep)	3	Cream to light yellow	May - early June

Species	Incu- bation Time*	Egg Hatching	Size of Larvae **	Larvae	Length of Larval Stage*	Timing of Mating	Interesting notes
Northern Two-lined Salamander	4-10 weeks	June - August	11 to 52	Gills branch from the <u>rachis</u> , <u>longer than Dusky's</u> , and have some <u>pigment (reddish)</u> . Smaller dorsolateral spots than Dusky; <u>diameters smaller than the spaces between them</u> . Toe tips <u>rounded</u> and <u>not keratinized</u> .	2(-3) years	Sept. - May	Lungless. Female tends nest; communal nesting.
Northern Dusky Salamander	7-11 weeks	Late May - Sept.	8 to 38	Gills <u>short</u> and <u>white without rachises</u> , branching from the base. <u>Larger hind legs than forelegs</u> . Large spots; <u>diameters greater than the spaces between them</u> . Toe tips <u>pointed</u> & <u>keratinized</u> .	7-12 months	Autumn & spring	Lungless. May actively construct a small depression. Female tends nest (may leave nest at night), and may stay with young for a few days-weeks.
Spring Salamander	6-8 weeks	Late summer/autumn	23 to 160	Long, truncated snouts and small eyes; no dorsal light spots; light <u>yellowish-brown/gray/lavender</u> with <u>fine reticulations or flecking</u>	3-4 years	Autumn & spring	Lungless. Female tends nest; some nests may be underground (very few found).
Four-toed Salamander	5-9 weeks	Late May - early June	11 to 25	Mottled yellowish brown dorsum (may have fused dorsal spots with dark edges), prominent eyes, <u>dark mask across face</u> , <u>clear tail fin</u>	3-6 weeks	Fall/early winter	Lungless. Female tends communal nest; brooding female is often the one who first oviposits.
Eastern Red-backed Salamander	6 weeks	Late July - August	19 to 25	(in the egg)	N/A	Autumn - spring	Lungless. Female tends nest. Biennial oviposition (females), takes two years to fully yolk eggs.
Eastern Newt	3-5 weeks	Mid May - July	7 to 35	Hatchlings: balancers, beige/tan, dark bar through eye. Mid-stage: <u>some dark spotting</u> , <u>dark stripe from snout through the eyes</u> , <u>face two-toned</u> .	2 months	Autumn & spring	Oviposition takes several weeks (female lays a few eggs per day, widely scattered).
Jefferson Salamander group	4-7 weeks (as long as 14 weeks)	May	10 to 55	Hatchlings: balancers, olive green/brown with tinges of yellow on sides (possibly <u>dorsally banded</u>). Pale <u>lateral stripe</u> by mid-stages. Older larvae: grayish with <u>mottled tail fins</u> . <u>Toes elongated/tapered</u> .	2-4 months	1-2 days before egg-laying	Females may skip one or more years before returning to breed.
Blue-spotted Salamander group	3-4 weeks	May	8 to 55	Hatchlings: balancers, dark brown, <u>yellowish transverse bars</u> . Older larvae: brownish with yellowish <u>lateral stripe</u> (less distinct with age), <u>mottled tail fins</u> . <u>Dorsal fins heavily blotched/mottled with black</u> .	2-3.5 months	Within a few days before egg-laying	
Spotted Salamander	4-7 weeks (5 weeks in MA)	Mid May-early June	10 to 75	Hatchlings: balancers, yellow/beige-pink background, extensive <u>stippling (no transverse bars)</u> . Mid stage: <u>tail fin finely stippled with darker pigmentation near the tip</u> . Older larvae: olive green, <u>usually no lateral stripe</u> , few distinctive markings. Pale venter. <u>Shorter head & tail</u> than other Ambystoma.	2-4 months	Within 2-3 days before egg-laying	Mass is 2-5 cm long when first laid, then expands. Clarity of mass based on amount of protein in outer jelly. In deep spring-fed pools, may overwinter as larvae.
Mudpuppy	5-9 weeks	July to August	14 to 200	Dark dorsal band down midline, <u>yellow stripe</u> on each side of dorsal band, dark band below yellow	5+ years to sexual maturity	Autumn, and late winter - April	Female tends nest. Synchronized oviposition in 1 week or less; female excavates depression under rock/log.

*varies based on environmental factors (temperature, oxygen/desiccation, predators, pathogens, etc.)

**in mm total length, from size at hatching to size at metamorphosis, or sexual maturity (Mudpuppy)