Dean Birch

Frogs & Toads of Rhode Island

Frogs and toads are both in the order Anura but they are quite different. Both are amphibians, spending part of their lives in the water, but most toads only return to the water as adults to lay their string-like eggs. Rhode Island has seven species of frogs and three species of toads. The most apparent difference between frogs and toads is the mucus covering on frogs that protects their smooth, permeable skin from drying out. Toads have bumpy skin that is more tolerant of dry conditions. Toads also have parotoid glands, which frogs lack, located on the back of their heads. These glands produce a toxic substance that deters predators from eating them.

THREATS TO FROGS & TOADS

Though unique in their adaptations, both frogs and toads are greatly impacted by numerous threats and Anurans are among the most threatened vertebrate taxa. Recent population declines and extinctions have been occurring world-wide; our own populations of spadefoot toads and Northern leopard frogs are threatened in RI. Highly developed areas such as Providence, Cranston, Warwick and Woonsocket lack a complete amphibian fauna, and Fowler's toads and Northern leopard frogs are no longer found on Aquidneck Island. To preserve these animals, we must look to protect and connect their habitats and work toward a clean and healthy ecosystem.

Habitat Loss and Fragmentation: The biggest threat to frogs and toads, similar to many other animals, is habitat loss and fragmentation. While Rhode Island species live in a variety of habitats, it is essential that these habitats are connected to allow animals to safely access the resources they require. Fragmentation increases road mortalities, killing frogs and toads as they attempt to cross the road to reach isolated sources of food and shelter.

Disease: Chytridiomycosis is an infectious disease caused by the Chytrid fungus (*Batrachochytrium dendrobatidis*) that has devastated amphibian populations world-wide. The Chytrid fungus causes thickening of the normally permeable skin, disrupting an amphibian's ability to absorb water and breathe. This disease has caused declines in over 500 frog and salamander species. Ranavirus is an infectious disease affecting reptiles, amphibians and fish with up to a 90-100% mortality rate. There are several different kinds of Ranavirus that impact species at different levels. This disease is believed to be responsible for many recent massive mortality events around the world and, unchecked, could eliminate entire species.

Disease Prevention: The greatest risk with all of these diseases is transfer to new, uninfected, populations. To avoid further spread of these diseases, all equipment should be bleached and scrubbed in a 3% bleach solution before entering a wetland and between wetlands. This includes boats, paddles, shoes and anything else that comes into contact with the water. Never relocate a wild animal. It is illegal and can transfer disease to new locations. For more information on proper sanitation procedures, **click here.**

Other Threats: Other sources of mortality include pollution as a result of run-off from roads, lawns and factories and predation from subsidized predators such as cats and raccoons, whose populations increase along-side human populations. **It is illegal to take an animal from the wild to keep as a pet, even temporarily.** Removing adults, tadpoles or eggs from their natural habitat can harm sensitive populations. Releasing any kind of native or non-native animals into the wild can introduce diseases and could potentially establish invasive species, which could harm our native wildlife.

LEARN MORE

Amphibians of Rhode Island, by Division of Fish and Wildlife Biologist Christopher Raithel, contains in-depth information on all of our native species. To learn more about this publication, click here.

Amphibian and reptile sightings can be reported using the RI Division of Fish and Wildlife HerpObserver App. For more information click here.

Frog Species Profiles
Family Ranidae (True frogs)

Gabrielle DeMeillon

AMERICAN BULLFROG *(Lithobates catesbeianus)*

Habitat: Bullfrogs are one of the most aquatic frogs in the state. They can be found in permanent and temporary waterbodies throughout RI, except on Block Island.
Diet: Bullfrogs will eat anything they can, including other frogs, mice, fish and snakes.
Behavior: Bullfrogs enter a state of dormancy in the winter, resting on the bottom of ponds. They emerge in late March or early April, breed from May to August, and re-enter hibernation in late October. Tadpoles will overwinter for 1-2 years in Northern populations before metamorphosing into adults.
Sexing: Females are typically larger than males and their tympana (circular eardrums behind eyes) are about the same size as their eyes. Adult males have bright yellow chins and their tympana are larger than their eyes.

IDENTIFICATION

Appearance: Back bright green to yellow or dark khaki, often with brown transverse markings on rear legs. Underside and chin white to yellow. Tadpoles are large, and yellowish green.
Average Length: ≈11cm
Similar species: Green frogs have prominent dorsolateral folds (2 raised lines along their back) and a more pointed snout.
Call: "Jug-o-rum, Jug-o-rum"

Christopher Raithel

GREEN FROG *(Lithobates clamitans)*

Habitat: Green frogs are mostly aquatic. They can be found in permanent and temporary waterbodies throughout RI, including Block Island.
Diet: Green frogs will eat anything they can including other frogs, insects, snails and small snakes.
Behavior: Green frogs enter a state of dormancy in the winter, resting on the bottom of ponds or in wet soil. They emerge in March, breed mid-April to late August, and re-enter hibernation in late October. Most tadpoles overwinter for a year before metamorphosing into adults.
Sexing: Females have tympana (circular eardrums behind eyes) that are about the same size as their eyes. Adult males have bright yellow chins and their tympana are larger than their eyes.

IDENTIFICATION

Appearance: Back bright green to brown with brown/black mottling. Upper lip marked with bright green, white or yellow. Underside and chin white to yellow. Tadpoles are dark green above and white below.
Average Length: ≈7.5 cm
Similar species: Bullfrogs lack dorsolateral folds (2 raised lines along their back) and have a more rounded snout.
Call: Sounds like plucking a loose guitar string or rubber band

Frog Species Profiles
Family Ranidae (True frogs)

Christopher Raithel

WOOD FROG *(Lithobates sylvaticus)*

Habitat: Wood frogs are primarily terrestrial, aside from breeding. They inhabit swamps, moist conifer and deciduous forests. They typically breed in wetlands devoid of fish such as vernal pools, swamps, and kettle ponds. They are present throughout all of RI, except Block Island.

Diet: Wood frogs eat beetles, slugs, spiders and other small invertebrates. Tadpoles are predacious and will feed on other amphibian eggs.

Behavior: Wood frogs enter a state of dormancy in the winter, able to freeze solid while resting under leaf litter, logs or soil. They emerge and thaw to migrate to breeding grounds in late February. Breeding occurs in late February to mid-April. Most tadpoles metamorphose around the end of June. Wood frogs re-enter hibernation around mid-November.

Sexing: Females are typically larger than males and have thin forearms. Breeding males have thick, muscular forearms.

IDENTIFICATION

Appearance: Back beige, reddish-brown or dark brown. Black "mask" from each eye to back of lip with a white stripe below. Belly white or cream up through chin. Tadpoles are black, dark brown or deep olive, only white around vent.

Average Length: ≈5 cm

Similar species: Spring peepers are much smaller, lack the black mask and have sticky pads on toes.

Call: Sounds like a cluck or a quack

Gabrielle DeMeillon

PICKEREL FROG *(Lithobates palustris)*

Habitat: Pickerel frogs are widely distributed on the mainland parts of Rhode Island. They are absent from Narragansett Bay Islands and Block Island. They inhabit a variety of wetlands and marginal grassy habitats.

Diet: Pickerel frogs eat ants, sawfly larva, spiders and other invertebrates.

Behavior: Pickerel frogs enter a state of dormancy in the winter, resting under stones and logs in wet areas. They emerge and migrate to breeding grounds around early April and breed from April to May. Tadpoles metamorphose between July and August. Pickerel frogs re-enter hibernation around November.

Sexing: Females are typically larger than males. Males have swollen thumbs during breeding season.

IDENTIFICATION

Appearance: Back silver or beige, with square brown spots in two rows. Rear legs have brown transverse lines. Lip light colored. Underneath white or cream with yellow around groin area. Tadpoles are mustard colored when small. Later turn green or grayish brown with cream colored belly and black chin.

Average Length: ≈5 cm

Similar species: Leopard frogs are less common and have rounded spots and bright green or brass coloration.

Call: Low pitched "snore"

Frog Species Profiles
Family Ranidae (True frogs)

Christopher Raithel

NORTHERN LEOPARD FROG *(Lithobates pipiens)*

Habitat: Leopard frogs are only found in Newport and Bristol counties and are a rare species in Rhode Island. They inhabit open, grassy habitats in marginal areas and breed in seasonal wetlands or shallow pools without fish.

Diet: Leopard frogs eat ants, worms, snakes, other frogs and anything else they can fit into their mouths.

Behavior: Leopard frogs enter a state of dormancy in the winter, resting under on the bottom of rivers and lakes. They emerge and migrate to breeding grounds in March and breed from late March to early May. Tadpoles metamorphose around July. Leopard frogs re-enter hibernation around October.

Sexing: Females are typically larger than males. Males have swollen thumbs during breeding season. Black, uninflated vocal sacs can sometimes be seen between the arm and tympanum in breeding males.

IDENTIFICATION

Appearance: Back bright green or copper, with round or oval brown spots haloed in iridescent greenish-yellow. Limbs are marked with smaller brown spots. Lip light colored. Underneath white or cream. Tadpoles are leaf green above. The intestinal coil is visible through their opalescent white skin below.

Average Length: ≈7 cm

Similar species: Pickerel frogs are more common and have square spots and silver or beige coloration with yellow around groin.

Call: Low pitched "snore" similar to pickerel frog but followed by shorter, low notes

Family Hylidae (Tree frogs)

Mary Gannon

GRAY TREE FROG *(Hyla versicolor)*

Habitat: Gray treefrogs are arboreal and can be found up to 10 meters off the ground in trees. They lay eggs in semi-permanent or seasonal waterbodies but reside in a variety of habitats including forested swamps, agricultural fields and upland forests far from wetlands. They are found throughout the state, primarily in western RI and were recently documented on Block Island for the first time.

Diet: Gray tree frogs eat crickets, moths, flies, worms and other invertebrates.

Behavior: Gray tree frogs enter a state of dormancy in the winter, resting under leaf litter or roots of trees but bodies are also able to survive freezing and thawing. They emerge and migrate to breeding grounds in April and breed variably from mid-April through July. Tadpoles metamorphose between July and early September. Gray tree frogs re-enter hibernation around October.

Sexing: Females are typically larger than males (≈5cm) with an unmarked or lightly spotted chin. Males have a black or heavily marked chin.

IDENTIFICATION

Appearance: Back bumpy and color highly variable with temperature and between individuals. Dark gray to white or green with irregular dark camouflage on back. Belly creamy white with yellow around groin. Large sticky pads on toes. Tadpoles yellow to olive green when larger, with a metallic sheen. Throat black, belly pearly white, tail heavily mottled. Intestinal coil visible. Eyes lateral.

Average Length: ≈4.5 cm

Similar species: Spring peepers also have toe pads, but are much smaller, smoother and brown colored.

Call: Short, high-pitched "brrrrr"

Frog Species Profiles
Family Hylidae (Tree frogs)

Christopher Raithel

SPRING PEEPER *(Pseudacris crucifer)*

Habitat: Spring peepers are found across Rhode Island, including Block Island, but are absent from the small bay islands. They breed in a variety of wetland habitats, preferring an abundance of aquatic vegetation and grasses. Juveniles and non-breeding adults are terrestrial and their toe-pads allow them to climb trees.
Diet: Spring peepers eat beetles, pill bugs, ticks and other small insects.
Behavior: Spring peepers enter a state of dormancy in the winter, resting under leaf litter, logs or soil. Their bodies are tolerant of freezing and thawing. They emerge and migrate to breeding grounds around March and April and breed from March through June. Most tadpoles metamorphose around late July and early August. Spring peepers re-enter hibernation around November.
Sexing: Females are typically larger and lighter colored than males with white chins. Breeding males have dark colored chins and sometimes a yellow wash around the groin area.

IDENTIFICATION

Appearance: Back beige or dark brown with darker "X" marking center of back. Belly plain white or beige. Chin white or black. Tadpoles are drab brown or green above, black throat, pearly white vent. Eyes lateral.
Average Length: ≈2.5 cm
Similar species: Juvenile wood frogs sport a distinctive black face mask and lack pads on toes.
Call: High-pitched "peep" and occasional "trill"

Toad Species Profiles
Family Bufonidae (True toads)

Gabrielle DeMeillon

EASTERN AMERICAN TOAD *(Anaxyrus americana)*

Habitat: American toads are found throughout Rhode Island, except the small bay islands and Block Island. They breed wherever they can find water but are mainly terrestrial, present in both forests and open areas with little vegetation.
Diet: American toads eat worms and other invertebrates.
Behavior: American toads enter a state of dormancy in the winter, digging their way into the soil beneath the frost line. They emerge and migrate to breeding grounds in April and breed from mid-April to early June. Tadpoles metamorphose between June and August. American toads re-enter hibernation around October.
Sexing: Females are typically larger than males with a cream-colored chin. Breeding males have a dark chin and swollen thumbs.

IDENTIFICATION

Appearance: Back typically brown, yellow or orange, with black spots each containing one or two warts. Skin all very bumpy and dry. Belly cream colored with black specks. Front toes not webbed. Tadpoles dark brown or black above. Tail fins clear. Cannot be distinguished from other true toad tadpoles without microscopic examination.
Average Length: ≈6 cm
Similar species: Fowler's toads have >2 warts per spot, a relatively unmarked belly and oval-shaped parotoid glands at the base of their heads.
Call: Long, high-pitched "trill"

Toad Species Profiles

Family Bufonidae (True toads)

Christopher Raithel

FOWLER'S TOAD *(Anaxyrus fowlerii)*

Habitat: Fowler's toads are uncommon and are found primarily in Kent County with few records elsewhere on the mainland. They are the only toad found on Prudence Island and there are populations in Barrington and Little Compton on barrier beaches. They prefer sandy soils such as beaches, gravel pits and river outwash plains. They are mainly terrestrial but breed in a variety of wetlands.
Diet: Fowler's toads eat snails, worms and other terrestrial invertebrates.
Behavior: Fowler's toads enter a state of dormancy in the winter, likely digging their way into sandy soil beneath the frost line. They emerge and migrate to breeding grounds in May and breed from late May to early June. Tadpoles metamorphose between mid-July and mid-August. Fowler's toads re-enter hibernation as early as August.
Sexing: Females are typically larger than males with a cream-colored chin. Breeding males have a dark chin and swollen thumbs, some have yellow coloration around groin.

IDENTIFICATION

Appearance: Back typically yellow, pale gray or greenish, with black markings, each containing several small warts. Dry skin covered in small bumps. Belly cream colored with few markings. Front toes not webbed. Tadpoles dark brown or black above. Tail fins clear. Cannot be distinguished from other true toad tadpoles without microscopic examination.
Average Length: ≈6 cm
Similar species: American toads have <2 warts per spot, a speckled belly and "kidney-shaped" parotoid glands at the base of their heads.
Call: Nasal "waaaa" lasting 1 to 4 seconds

Family Scaphiopodidae (Spadefoot Toads)

Christopher Raithel

EASTERN SPADEFOOT TOAD *(Scaphiopus holbrookii)*

Habitat: Eastern spadefoot toads are rare in Rhode Island and only a few known breeding sites occur in Washington and Kent Counties. They spend most of their lives buried in sandy loam, only rising briefly to breed in shallow wetlands filled by rainwater.
Diet: Spadefoot toads eat beetles, millipedes, caterpillars and other terrestrial invertebrates.
Behavior: Spadefoot toads enter a state of dormancy in the winter, digging their way into the soil beneath the frost line. They breed after heavy rainfall between April and September. This species may not breed every year if conditions are unfavorable. Tadpoles metamorphose 15 to 60 days after hatching, depending on the water temperature and other environmental factors. Spadefoots re-enter hibernation in early October.
Sexing: Males and females are similar in size and appearance. Breeding males have a dark nuptial pad on each thumb.

IDENTIFICATION

Appearance: Back shiny brown, or olive with two yellow stripes. Small reddish-orange warts on flanks. Belly plain ivory or pinkish. Feet have small black "spades" for digging. Eyes have vertical pupils. Tadpoles dark brown or black above with brassy coloration. Tail fins clear. Intestinal coil completely visible. Highly active.
Average Length: ≈6 cm
Similar species: Other toads have round pupils, drier, bumpier skin and larger parotoid glands.
Call: Short downward "meh"