

Frogs of Illinois



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyRanidae.aspx>

Lake Shelbyville Eco-Meet 2018

Varsity

U.S. ARMY CORPS OF ENGINEERS – ST. LOUIS DISTRICT

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INTRODUCTION

Frogs are found all over the world and in almost all semi-aquatic habits. Illinois is home to a rich variety of amphibians due to its size and central location in the United States. Around 41 different species of amphibians are found in Illinois alone. Frogs are amphibians, and together with reptiles, they make up a larger group called Herps. The study of amphibians and reptiles is called Herpetology. Individual herps are referred to as a herptile.

CLASSIFICATION

Domain---Eukarya

Kingdom-----Animalia

Phylum-----Chordata

Class-----Amphibia

Order-----Anura

Family-----Ranidae

Genus-----Rana

Species---Rana pipiens

FROGS

DESCRIPTION

Frogs and toads are often grouped together. The difference between the two is not very clear-cut. In general, the typical toad has dry, warty skin, short legs, a chunky appearance, and moves with short hops. In contrast, typical frogs have smooth, moist skin, a slender profile, and long legs adapted for leaping. A common rumor involving both frogs and toads suggests that they both cause warts. This thought has been proven false by scientists. For the purpose of this study guide, we will focus solely on frogs.

Frogs have many different forms throughout their life. At first, they resemble the shape of a fish or snake, possessing only a head and a tail-like body for swimming. This is the tadpole stage. After this stage, they begin to develop into the adult form of a frog. Unlike tadpoles, who are only able to swim, adult frogs have a squat posture and are equipped with strong rear legs that enable them to jump long distances. Frogs can leap

an average distance equal to ten times their own body length. They also have a long, retractable tongue that is protrusible or capable of being extended or used to catch different insects. This tongue is folded in half when stored in the frog's mouth. When extended, the tongue unfolds and is flipped out, rather than being cast out straight. Frogs have moist, sensitive skin that allows chemicals in the environment to pass into their bodies. This moist skin is protected by a slippery secretion of mucus. Frogs tend to live in moist places or near water in order to keep their bodies from drying out.

Frogs are primarily nocturnal, but can be seen during the day, if the weather is overcast or rainy. Frogs have adapted to a wide variety of habitats. Tree frogs, for example, have a sticky cup at the end of each toe that allows them to climb vertical surfaces such as windows and tree trunks. They may be found in branches more than fifty feet off the ground!

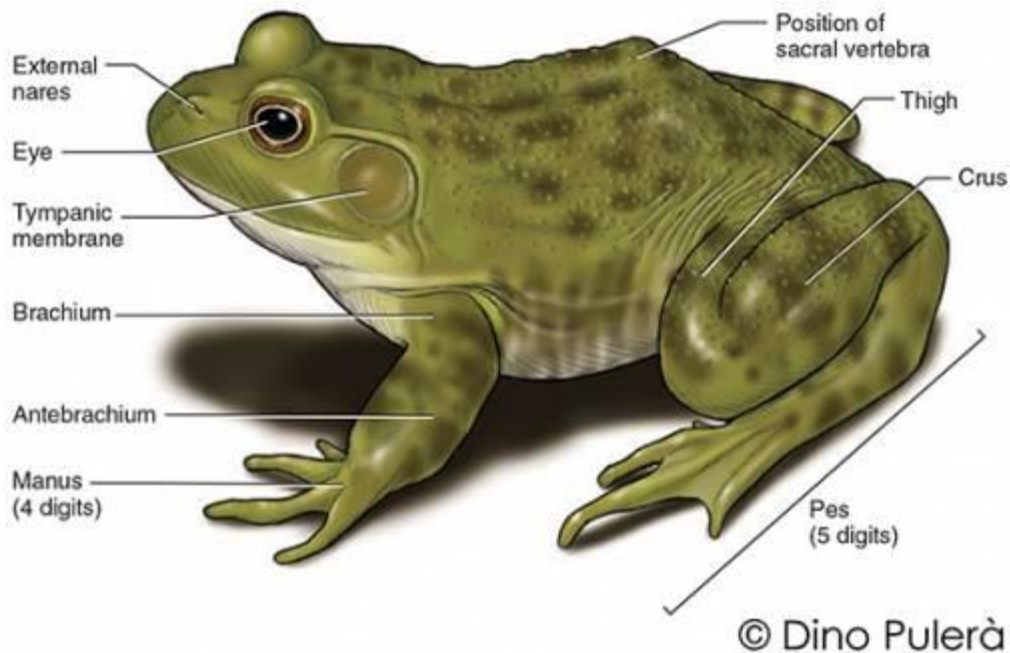
ANATOMY

As amphibians, frogs live part of their lives in the water and part on land. They are vertebrates and are ectothermic or cold-blooded. Similar to reptiles, they cannot regulate their own body heat, so they must bask in the sun to become warm and active. They are also unable to cool their own skin. Therefore, they must take shelter in a burrow or some other source of shade if their environment gets too hot. In the colder months, they become very sluggish and often live underground. Rather than true hibernation, they enter a state of torpor in the winter months, becoming much less active as the temperature drops, and they are unable to warm up. However, no physiological changes occur. They may wake during warmer periods and become briefly active before going back to a dormant state. Most frogs stay on land in shelter over winter, but some frogs burrow in the muddy bottoms of various bodies of water. Some Illinois frogs, such as the Wood Frog, accumulate glycerol in their body tissues. The glycerol acts as an antifreeze, allowing them to survive sub-freezing temperatures.

While tadpoles possess gills, adult frogs breathe through their lungs. They can also absorb oxygen through their soft, moist skin. This type of breathing means that the skin must always be moist and permeable. They lack a protective layer, such as a shell, hair, or skin, so their skin remains permeable. They have mucous glands that enable them to keep their skin very moist.

Frogs have a tympanic membrane or tympanum that aids in the process of hearing, since they lack external ears like humans and other animals. This tympanum is a circular structure located on each side of the frog's head, behind the eyes. It works by picking up vibrations in the air or water and passing them to the inner ear.

Some frogs have poison-producing glands in their skin, which make them taste bad to predators. Sometimes, this poison may even cause the death of a predator. Normally, if poisonous, the frog will be very brightly colored as a warning sign to predators.



<http://www.tipsblackberry.info/external-anatomy-frog/>

DIET

Flying insects, such as flies and mosquitoes, are the most common food of choice for frogs. However, frogs will also scrape algae and bacteria from substrate or filter them from water. Additionally, they may scavenge on decaying organic matter. Once frogs have reached adulthood, they are almost solely insectivorous, capturing a wide variety of insects with their sticky tongues.

COMMUNICATION

A frog's call is very mighty for its size. Both the male and female are equipped with functional vocal cords, but they are better developed in the male. Only males have a vocal sac or pouch, which is spherical, thin-walled, and able to be inflated like a balloon. This pouch inflates while the male frog is calling, adding loudness and resonance to the call. Some frogs have a pair of vocal pouches that extend out to each side. They may also have less-defined, thick-walled pouches that bulge outward from one side of their mouth to the other.

Frogs vocalize the most during mating season. However, they can also be heard at different times throughout the year, depending on the situation. Alarmed frogs normally leap to shelter while simultaneously letting out a loud squeak. When approached by a predator, frogs often emit a very loud, wailing scream of cries, with their mouths open. Frogs also call to proclaim feeding territories and to ward off trespassers. This is especially true in aquatic species like the Bullfrog. Male Bullfrogs will occupy and defend stable territories that they use for feeding and breeding.

Male frogs of the same species often call to each other with rhythmic regularity, possibly to reduce call interference and to allow approaching females to hear them more clearly. After periods of quiet, one individual frog may suddenly begin calling, and the others will then join in quickly. This group chorus may then become quiet again before they all join in calling together once more. This cycle will repeat multiple times. Scientists can distinguish frog calls by using an electronic sound analyzer that results in a graph called a sonogram.

Note: Frog calls will be on the test. Please follow the links provided on each subspecies page to access the audio files for studying purposes. Not all subspecies will have a link. Those without a link will not be included on the test. A link to the folder with all of the audio files is provided in the Bibliography.

REPRODUCTION

MATING CALLS

Frogs normally reproduce in the spring. During this time of breeding, frogs are at their most active and most vocal. The male is the prominent caller, putting out a sort of advertisement call to let other females within hearing range know they are available for breeding. The male will attract the female to breeding sites by using different vocalizations. While these calls often attract females, they also attract other competing males. The males normally arrive at the breeding site before the females. There is evidence that larger choruses of calling males are more effective than smaller choruses, so this early arrival of males benefits the frogs.

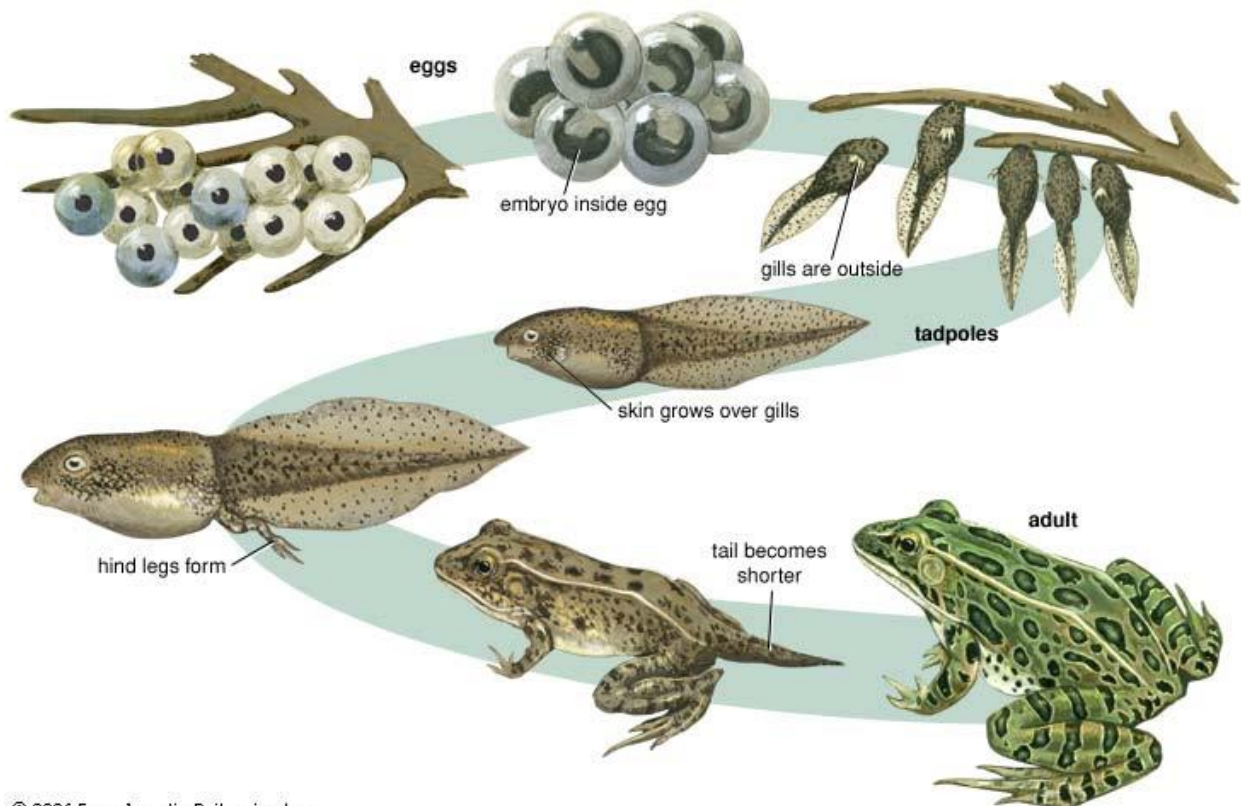
Once the male has successfully attracted a female through his calls, he will wait for the female to approach him. The female makes an approach, and the male climbs on her back, holding onto her with his front limbs around her body. A short time later, the female will release her eggs into the water. The male will then fertilize the eggs by expelling sperm on top of them.

METAMORPHOSIS

Frogs go through a biphasic, or two-stage, life cycle. Frog eggs are not like normal eggs. They do not have shells and therefore must be laid in water or a very damp environment to keep from drying out. The eggs are covered in a gelatinous coating and laid in either sheets, strings, or globs. A female Bullfrog can lay over 20,000 eggs in a thin film measuring two feet by two feet.

When the frog's unique egg hatches, it is in a gilled larval form referred to as a larvae or tadpole. Tadpoles have a horn or beak-like mouth designed for scraping algae. The tadpoles begin feeding almost immediately after hatching. Tadpoles are mainly herbivorous, while adult frogs are chiefly carnivorous. Young frogs do not resemble their parents.

After weeks or months, the larvae transform into the adult form of the frog through a process called metamorphosis. This normally takes place after the tadpole has wintered, and the tadpole will transform the following summer. The frog starts out as a tadpole with gills that enable it to breathe underwater as well as a tail to help it swim. During this stage of development, the frog will only live in the water. As it gets older, the tadpole begins to develop lungs, legs, and a different mouth. The eyes change position, the tail falls off, and hind legs appear. At this point, the frog has reached maturity and now resembles an adult frog. The rest of the frog's life will be spent on land rather than swimming in the water. If in captivity, the frog can live up to 30 years, depending on the species. If in the wild, a frog's chance of longevity is significantly decreased, due to human impact as well as other predators.



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<http://media.web.britannica.com/eb-media/92/93092-034-98FF1DEC.jpg>

CONSERVATION

Frogs act as excellent gauges of environmental health because of their close contact with aquatic, wetland, and terrestrial environments. Over the last few years, concern has increased over worldwide population declines as well as extinctions in frog species. Habitat destruction and degradation are some of the main causes for this decline, but some species are in decline in pristine environments, such as the rainforest,

for no evident reason. This puzzling disappearance of some frog species in remote, pristine parts of the world has scientists concerned about overall planetary health.

Despite the declining population, as of 2017 there are currently no species of frogs listed on the Illinois Endangered Species List. However, there are two frogs on the Illinois Threatened Species List: the Bird-Voiced Tree Frog and the Western Chorus Frog. A State Threatened Species is any breeding species that is likely to become a State Endangered Species within the foreseeable future.

Until the early 1980's, Cricket Frogs were among the most common anurans in Illinois, and they could be found in almost every county. Recently, biologist shave noticed a decline in the number of Cricket Frog populations in the Chicago region but no downstate. One of the causes that has been suggested for this decline is a build-up of toxic substances (pesticides, heavy metals, etc.) in the frogs' breeding ponds, leading to endocrine disruption. A survey of museum specimens collected in Illinois over the past 100 years showed that more frogs from the Chicago region displayed anatomical signs of endocrine disruption compared to the rest of the state. In the heavily industrial and urban landscape of the Chicago region, habitat destruction and fragmentation are also likely involved.

Illinois state law prohibits the use of any wild-caught amphibian or its products (eggs, offspring, byproducts, etc.) for commercial use. However, a person may collect unlisted amphibians for their personal use, as long as none are sold or traded. Amphibians for personal use may be captured by any device that is not designed to cause death or serious injury. If released, an individual must return the amphibian back to the original spot the animal was captured. There are some exceptions to this rule. Bullfrogs, for example, require a person to have a sport fishing license in order to legally capture them. Bullfrogs must be taken by one of the following methods: by hand, pole and line fishing methods, pitchfork, landing net, bow and arrow device, spear, or gig. Firearms, air guns, gas guns, or commercial fishing devices such as nets, hoop nets, traps, or seines are prohibited. Bullfrogs may only be hunted from June 15th through August 31st, with a daily limit of 8 Bullfrogs and a 16 possession limit. Another exception applies to all National Wildlife Refuges, Shawnee National Forest, Federal Public Lands (such as Lake Shelbyville), Nature Preserves, County Forest Preserves, and all Department of Natural Resources owned or managed areas (state parks, fish and wildlife areas, conservation areas, etc.). In all of these areas listed, it is illegal to collect any species without appropriate permits. On privately owned land, permission from the landowner(s) is required.

SUBSPECIES

Family Hylidae

BIRD-VOICED TREE FROG

Hyla avivoca

[Threatened]



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyHylidae.aspx>

The Bird-Voiced Tree Frog averages about 1 to 1¾ inches in length. It has a light spot under each eye. The concealed portions of the hind legs have a pale yellow-green to green- or yellow-white coloring. The body color is gray, brown, or green. An adhesive pad is present on the tip of each toe. The long legs and slim waist are also characteristic. The tadpole is dark brown with three to seven red saddle and thin bronze stripes on the head.

The Bird-Voiced Tree Frog lives in cypress swamps, sloughs, and marshes in the southern ¼ of the state. It is often found in trees or shrubs. It breeds from mid-May into August. Eggs are deposited in submerged packets in the water. Eggs hatch in three to four days. Metamorphosis occurs in about one month. The Bird-Voiced Tree Frog eats insects and other invertebrates.

Call: The Bird-Voiced Tree Frog's advertisement call is a rapid series of ten to twenty melodic peeps lasting several seconds and sometimes varying slightly in tempo. During aggressive encounters, this frog responds with a harsh trill given in singularity or in repetition "prreeeeekkkk." The male's call is a prolonged, quavering, birdlike note.

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EASTERN CRICKET FROG

Acris crepitans



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyHylidae.aspx>

The Eastern Cricket Frog averages about ½ to 1½ inches in length. Its body color is light brown, black, olive, tan, or gray. The skin is warty. A dark triangle is present between the eyes. A dark stripe is found on the rear surface of the thigh. A tiny adhesive pad is present on the tip of each toe of the webbed feet. A light line is present from each eye to each shoulder, and there are light bars on the nose.

The Eastern Cricket Frog lives along the edges of streams, ponds, and ditches. Even though it is in the tree frog family, it does not live in trees. This frog is generally active during the day, but in the summer, it may be active at night, too. The Cricket Frog is fairly tolerant of cold and may be active in the winter, if the weather is not too severe. It is a tremendous leaper for its size. The Cricket Frog breeds from late April through summer. The female deposits up to 400 eggs either singly or in small, filmy packets on the water's surface. A few days later, the eggs hatch into tadpoles which have black-tipped tails. Metamorphosis occurs from 5 to 10 weeks after hatching. The Eastern Cricket Frog feeds on arthropods (spiders, mites, insects and others), particularly insects. It lives throughout Illinois.

Call: The male's call is a metallic "glick, glick, glick" which sounds like two small rocks being hit together.

GRAY TREE FROG

Hyla versicolor



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyHylidae.aspx>

The Gray Tree Frog and Cope's Gray Tree Frog make up the Gray Tree Frog Complex. The members of the Gray Tree Frog complex average 1¼ to 2 inches in length. Cope's Gray Tree Frog and the Gray Tree Frog are two separate species, but they appear identical externally. Their calls are different, however, as described below. They also have different numbers of chromosomes. The Gray Tree Frog is tetraploid while Cope's Gray Tree Frog is diploid. The body is usually gray or green but with many variations. A light spot is present beneath each eye. The concealed surfaces of the hind legs are bright orange mottled with black. The back is warty and has a star-shaped or irregular dark blotch. An adhesive pad is present on the tip of each toe. The tadpole's tail is marked with red and black.

The Gray Tree Frog lives in woodlands near water statewide. It may be found in trees or shrubs that are in or near water. In dry conditions, it may be found in dead trees, under bark, or in rotten logs. Breeding occurs from late April into August. Eggs are deposited in almost any water-filled depression. Packets of two to three dozen eggs are attached to vegetation at the water's surface. A total of 1,800 eggs per female may be deposited. Hatching occurs in a few days. Larvae transform from May through August, about two months after hatching. The Gray Tree Frog eats arthropods (spiders, insects, mites and others).

Call: The call of Cope's Gray Tree Frog is a high pitched buzzing trill with 34 to 69 pulses per second. The call of the Gray Tree Frog is a musical trill with from 17 to 35 pulses per second. The male's call is a musical trill which is similar to the call of the red-bellied woodpecker. When approached by another calling male, the frog will respond with squeaky chirps or yelps that signify aggression. In the summer, these frogs can be heard trilling from trees or shrubs.

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GREEN TREE FROG

Hyla cinerea



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyHylidae.aspx>

The Green Tree Frog averages 1¼ to 2¼ inches in length. Its body color is usually bright green. A white or yellowish stripe is present along each side. It may have tiny, gold flecks on the back. The skin is smooth. An adhesive pad is present at the tip of each toe.

The Green Tree Frog lives in cypress swamps, sloughs and marshes in the southern one-third of the state. It may be found on vegetation, like cattails. It breeds from mid-May through August. Eggs are laid in small packets or films in floating vegetation. Each female may deposit from 500 to 1,000 eggs. Hatching occurs in a few days. Transformation to the land-based form is completed about two months after hatching. The Green Tree Frog eats arthropods (spiders, insects, mites and others).

Call: The male's call is "quonk, quonk, quonk" which has been compared to a cowbell. When threatened, this frog give an aggressive, horse, garble "quarr-quarr-quarr" that is repeated very quickly. They can often be heard after a rain when huge choruses erupt.

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SPRING PEEPER
Pseudacris crucifer



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyHylidae.aspx>

The Spring Peeper averages $\frac{3}{4}$ to $1\frac{1}{4}$ inches in length. It has a dark, irregular, "X"-shaped mark on the back and a dark mark between the eyes. The body color is yellow, brown, gray, or olive with a pink cast. A small adhesive pad is present at the tip of each toe.

The Spring Peeper can be found in moist woodlands statewide. It is seldom seen except when breeding. It lives in trees or on herbaceous plants. It is usually active at night. Breeding occurs from early March to early June. The female deposits several hundred eggs singly, attaching them to submerged objects. Hatching occurs in a few days with transformation to the land-based form being completed in May and June. The Spring Peeper eats small arthropods (spiders, insects, mites and others).

Call: The male's call is a soft, birdlike whistle. Males commonly call in alternating duets or trios while perched in vegetation over water or on surface water. Distant choruses may sound like the jingling of sleigh bells. An aggressive call is made when threatened and is a short, stuttering trill, "*purrreeekkk*," usually rising in pitch at the end. This frog also gives a "rain call" which is heard periodically from trees and shrubs in the summer and fall repeating in a series of peeps or squeaks that are harsher and more dissonant than springtime advertisement calls.

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WESTERN CHORUS FROG

Pseudacris triseriata

[Threatened]



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyHylidae.aspx>

The Western Chorus Frog averages $\frac{3}{4}$ to $1\frac{1}{2}$ inches in length. It has three, broad, dark stripes down the back and a dark stripe that runs from the snout to the groin and passes through the eye. A dark triangle or other dark coloring may be present between the eyes. A light line is found along the upper lip. The body color is gray, brown, green, or olive.

The Western Chorus Frog lives in prairies, cultivated fields, and urban areas. It is seldom seen after the breeding season. It breeds March through May, often in temporary ponds. The female deposits about 100 eggs in clusters that are attached to objects in the water. Each female may deposit a total of 500 to 1,500 eggs. Eggs hatch in a few days. The tadpoles transform in May and June. The Western Chorus Frog eats small arthropods (spiders, insects, mites and others). In Illinois it can be found in the section of the state between Interstate 70 and Illinois Route 13.

Call: The male's call is "crreek" or "prreep" which can be imitated by running a finger across the teeth of a comb.

Family Ranidae

AMERICAN BULLFROG

Lithobates catesbeianus



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyRanidae.aspx>

The American Bullfrog averages 3½ to 6 inches in length. It lacks dorsolateral folds on the back. The webbing on its feet extends to the toe tips. The body is brown, olive, or green with dots or blotches. The tympanum (eardrum) is wider than the eye in males and nearly the same size as the eye in females. The vocal pouch is in the middle of the throat.

The American Bullfrog lives in lakes, rivers, marshes, ponds, and creeks statewide. The adult Bullfrog is solitary and wary. It is usually found at the water's edge. Breeding occurs from late April through August. A male will defend its territory from other male bullfrogs. The female deposits about 20,000 eggs in water. Hatching occurs in less than a week. Tadpoles metamorphose (change to the land-based form) after about 14 months. Tadpoles may grow to over 6 inches in length. The bullfrog eats almost any living thing that it can catch and swallow, although crustaceans and insects make up most of the diet.

Call: The male calls in a series of loud, deep bass notes resembling "jug-o-rum" or "br-wum." These calls function as both breeding calls and territorial calls. In aggressive encounters, the Bullfrog will let out an abrupt, spit-like "phphoot" noise to warn their enemy. During the months of May through August, Bullfrogs can be heard calling from shallow shorelines or from offshore patches of floating or emergent vegetation.

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CRAWFISH FROG

Lithobates areolatus



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyRanidae.aspx>

The Crawfish Frog averages 2¼ to 3 inches in length. It has a short body and a large head. The male has vocal pouches on the sides of the throat. Dark spots on the back are circled by light borders. The belly is white, and the back is smooth. Dorsolateral folds are present along each side of the back. There is mottling on the upper jaws and a hump in the middle of the back. The tympanum (eardrum) is not wider than the eye.

The Crawfish Frog lives in crawfish holes, small mammal burrows, and holes in roadside banks in areas with hardpan, clay soil in the southern half of the state. Wet pastures and golf courses are preferred habitats. This frog is nocturnal, spending the daylight hours in burrows or tunnels. It breeds from March through mid-April but is dependent on temperature and rainfall. The female deposits about 7,000 eggs in shallow water in large, submerged masses. Hatching occurs in several days. The tadpoles transform into the land-based form in late June and early July. The Crawfish Frog eats crustaceans and insects.

Call: The male's call is a chuckling, deep snore. During aggressive encounters, this frog makes abrupt, nasal notes “*wah....wah....wah*”. These frogs can be heard calling during early spring to early summer.

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GREEN FROG

Lithobates clamitans



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyRanidae.aspx>

The Green Frog averages 2¼ to 3½ inches in length. The upper lip is lighter and brighter green than the head. The belly is white. Body color can be green, bronze, olive, or brown. The jaw area of males is green, and the throat is yellow. Webbing between the toes is incomplete. Distinct dorsolateral folds are present and extend about halfway along the back.

The Green Frog lives in permanent streams, rivers, ponds, and lakes with emergent vegetation. This frog is highly aquatic, rarely coming to land. It swims to the bottom to avoid predators. It is a solitary organism except when breeding. Breeding occurs throughout the summer. The female deposits about 4,000 eggs in shallow surface masses on the water. Hatching occurs in a few days. Tadpoles overwinter and transform in the summer of their second season. The Green Frog eats arthropods (spiders, insects, mites and others), mollusks (snails, slugs and others), and annelids (earthworms, leeches) and probably any living thing it can swallow. It is common in the northern one-fourth of the state, in southern Illinois, east central Illinois and in counties along the Mississippi River.

Call: The male's call is two or three well-spaced, explosive notes which resemble the plucking of a banjo string.

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NORTHERN LEOPARD FROG

Lithobates pipiens



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyRanidae.aspx>

The Northern Leopard Frog averages 2 to 3½ inches in length. Its body is brown or green. Two or three rows of dark spots are present between the dorsolateral folds. The spots are rounded with light borders. More spots are present on the sides. The vocal sacs of males are only visible when calling. There is a dark spot on the snout. The dorsolateral folds are light colored and continuous to the groin area.

The Northern Leopard Frog is sometimes called the "Meadow Frog," because in the summer, it is often found well away from water. It lives in marshes, streams, ponds and lakes. This frog is a wary, alert, excellent jumper. It may scream when grabbed by a predator. Breeding occurs mid-March through May in ponds, lakes, sloughs or flooded fields. The female deposits about 3,000 to 5,000 eggs in 3 to 6 inch spheres which are attached to submerged vegetation. Hatching occurs in about ten days to two weeks. Transformation to the adult occurs June through August. The Northern Leopard Frog eats arthropods (spiders, insects, mites and others), mollusks (snails, slugs and others) and annelids (earthworms, leeches). It can be found in the northern one-third of the state.

Call: The call of the male may be imitated by rubbing a thumb across an inflated balloon. The males breeding call can be heard during the day and into the night in the first warm spells of spring.

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PICKEREL FROG
Lithobates palustris



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyRanidae.aspx>

The Pickerel Frog averages 1¾ to 3 inches in length. It has two parallel rows of square or rectangular brown or black blotches along the back between the yellow, dorsolateral folds. The body is gray or tan. The concealed parts of the hind legs and often the belly have a wash of bright yellow color.

The Pickerel Frog lives in permanent water that is not warm or sluggish such as peatlands, mouths of caves, ponds, creeks, marshes, cold springs and swamps. It may wander into grassy areas in summer. This frog is a wary, alert, powerful jumper. Secretions from glands in its skin make this frog distasteful to many organisms. The Pickerel Frog spawns in spring in peatlands, lakes, and swamps. The female deposits 1,000 to 2,000 eggs in globular masses. Eggs hatch in about two weeks. Transformation to the land-based form occurs by the end of June. The Pickerel Frog eats arthropods (spiders, insects, mites and others) and mollusks (snails, slugs and others). It can be found in the northern one-fourth of Illinois and in counties bordering the Mississippi River in the southern half of the state.

Call: The male's call is a short, low-pitched snore with little carrying power. Males sometimes also call while submerged. They also give garbled, throaty notes that are occasionally given singly, perhaps during aggressive encounters.

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PLAINS LEOPARD FROG

Lithobates blairi



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyRanidae.aspx>

The Plains Leopard Frog averages 2 to 3¾ inches in length. Its stocky body is usually brown. A light line is found along the upper jaw, and a light spot occurs on the tympanum (eardrum). A dark spot on the snout and dorsolateral ridges which are interrupted in the lower back area and inset toward the center are also characteristic features.

The Plains Leopard Frog lives in the plains and prairies of central Illinois and in counties along the Mississippi River. This frog breeds with the onset of warm, spring rains. The female deposits several thousand eggs in a submerged mass. Hatching occurs in two to three weeks, and transformation to the adult form usually occurs June through August, although some tadpoles may overwinter. The plains leopard frog eats arthropods (spiders, insects, mites and others) and mollusks (snails, slugs and others).

Call: The male's call is two or three spaced notes like "chuck-chuck" or "chuck-chuck-chuck." After each outburst, the chucks rise slightly in pitch and end with an accent, a soft grunt may terminate the series.

<https://drive.google.com/open?id=10ISPsBt493Lva0ggWedLA4hp2AnkW6PO>

SOUTHERN LEOPARD FROG
Lithobates sphenoccephalus



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyRanidae.aspx>

The Southern Leopard Frog averages 2 to 3½ inches in length. There is no dark spot on the snout. The male's vocal sacs are visible even when it is not calling. The spots on the back are smaller than the eye diameter. The body is light tan, gray-green or light brown. There is a light spot in the center of the tympanum. The dorsolateral folds are light in color and extend to the groin area.

The Southern Leopard Frog lives in streams, ponds, and lakes in the southern one-half of the state. In summer it is often found well away from water. This frog is a wary, alert, excellent jumper. It may scream when grabbed by a predator. Breeding occurs from early March through April in ponds, lakes, sloughs, or flooded fields. The female deposits 3,000 to 5,000 eggs in three- to six-inch spheres in water. Hatching occurs in about one to two weeks. Transformation to the adult occurs June through July. The Southern Leopard Frog eats arthropods (spiders, insects, mites and others), mollusks (snails, slugs and others) and annelids (earthworms, leeches).

Call: The call of the male is a short, chuckling trill.

WOOD FROG

Lithobates sylvaticus



<https://www.dnr.illinois.gov/education/Pages/WFTFamilyRanidae.aspx>

The Wood Frog averages about 1¼ to 2¾ inches in length. The tympanum (eardrum) is smaller than the eye. The body color is tan or red-brown while the belly is light. A dark mask is present on each side of the head.

The Wood Frog lives in moist woodlands with permanent or semi-permanent pools. This frog tends to be aquatic in spring and fall, but during the summer it spends most of its time away from water. It is difficult to find after the breeding season. It breeds in February and March. The female deposits 500 to 3,000 eggs in a globular mass in water. Eggs hatch within two weeks. Transformation to the land form occurs in May and June. The wood frog eats arthropods (spiders, insects, mites and others) and mollusks (snails, slugs and others). This species is found in the northeastern and northwestern corners of the state, the east central border counties and in the southern one-third of Illinois.

Call: The male's call is somewhat like the clucking of a duck. This call usually consists of several harsh notes given in rapid succession. A “cack-a-hack” or “cack-a-hack-a-hack” is normally heard, often delivered in repetition: “r-r-racket, r-r-racket, r-r-racket”.

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BIBLIOGRAPHY

<https://www.dnr.illinois.gov/education/Pages/WildAboutFrogs.aspx>

http://vetmed.illinois.edu/wildlifeencounters/teacher_resources/Lesson1/IDNR_IllinoisFrogsAndToadsPoster.pdf

<https://www.nwf.org/Educational-Resources/Wildlife-Guide/Amphibians/Wood-Frog>

<http://www.arkive.org/bird-voiced-treefrog/hyla-avivoca/>

<http://www.nhptv.org/natureworks/greentreefrog.htm>

Frog Calls

<https://drive.google.com/open?id=1aAvJDxgDfGhHVBfKAU2IJM42eYRxqvkU>