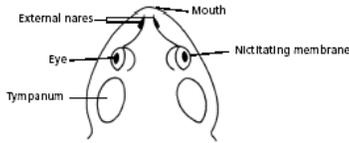


# 2018 LANCASTER COUNTY MIDDLE SCHOOL ENVIROTHON

## FROGS AND TURTLES

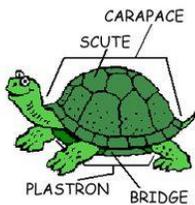
### BASIC BACKGROUND – FROG



**NICTATING MEMBRANE:** A transparent part of the frog's lower eyelid that moves over the eye to clean it and protect it.

**TYMPANIC MEMBRANE:** The eardrum that receives sound waves.

### BASIC BACKGROUND – TURTLE



**CARAPACE:** Top of shell.

**PLASTRON:** Bottom of shell.

Top and bottom shells are joined by bone.

**SCUTES:** Bony scales that cover shell.



**NORTHERN GREEN FROG:** Green frogs choose freshwater wetlands for shelter and food. The top of the frog is variable bright green to brown. Green frogs are sometimes confused with Bullfrogs. The best way to tell the difference is to look at dark ridge folds that start of the eye pass the tympanic membrane and continue down the back on a Green frog. Male frogs defend feeding territories using vocal calls, jumping and wrestling, and chasing intruders. The call a Green frog makes sounds like a sudden, loud pluck of a banjo string. These types of frogs are most often found in the shallow waters. These frogs have excellent vision and hearing, and their tympanic membrane

is very sensitive. Females lay clutches of about 3,000 eggs in a filmy clump that floats on the surface of the water. Green frogs eat insects, crayfish, small fish, and other frogs. Green frog eggs are eaten by turtles. Tadpoles are eaten by aquatic insects, fish, and birds. Adult green frogs are prey on by birds such as ducks, herons, and crows, as well as other frogs, and snakes.



**RED-EARED SLIDER:** Red-eared sliders are found from Virginia to Florida, and west to New Mexico. However, they are not native to Pennsylvania and should never be released into the wild in Pennsylvania. This type of turtle is often sold as a pet to be cared for in captivity. The pet owner must be prepared that a Red-eared slider can live for more than 30 years in captivity. Red-eared sliders and other turtles don't have teeth. Like other reptiles, birds, and mammals, they breathe air, though they spend much of their time in and near water. The red-eared slider is recognized by an elongated broad red stripe behind its

eyes. The carapace is yellowish green. It enjoys basking on tree logs just out of the still wetland freshwater.

It is suspicious of any sound or movement and will slide into the water at the slightest agitation. Adult turtles will eat aquatic plants and some aquatic bugs, tadpoles, and small fish. This turtle will hibernate in winter months.



**WOOD FROG:** The wood frog is 2-3 inches long and likes a moist swampy deciduous forest area. A dark brown line forms a mask like feature from its snout, through the eyes, and ends past the tympanic membrane. The rest of the body is dark brown to reddish brown. Its tympanic membrane is smaller than the eye. Wood frogs are part of a small group of animals that can freeze but not die. When the temperature freezes, the wood frog buries itself in woodland mud and hibernates in a way that allows its breathing and heartbeat to stop and over half of the water in its body freezes. When spring arrives, the ice melts, heartbeat and breathing return, and the frog is active again. The male wood frog

calls in a clacking sound much like a quacking duck to attract a mate. The female frog will lay about 1750 eggs that become submerged in shallow water of the wetland where they will attach to plants. The eggs stay together as a group which helps to keep them warm as they develop. The adult frogs will leave the eggs and not form a nest.



**BOG TURTLE:** The bog turtle is Pennsylvania's smallest turtle, only 3-4 inches in length. Recognize this turtle by the large orange blotches on each side of its neck. The shell and body are dark brown to black. It's rare to find this turtle. The bog turtle has very specific habitat requirements. It is Lancaster County's native Endangered Species. It is a species at serious risk of extinction. Bog turtles prefer wet meadows and bogs where tussock sedges and grasses are found in the wetland. Two main elements that cause its Endangered classification included loss of habitat when wetlands are developed and illegally collecting the

turtle in the wild to be sold illegally. It is the rarest of all North American turtles. Bog turtle nest in the warm months of June and July. About 3 white eggs in oval elliptical shapes are deposited between grasses just above the water line. Little hatchlings will emerge from shells in late August through September. Bog turtles are omnivores and eat insects, slugs, worms, frogs, salamanders, berries, cattails, skunk cabbage, and Japanese beetles.



**NORTHERN SPRING PEEPER:** Considered a sign of spring is the call of the spring peeper. They begin calling their familiar sleigh bell like chorus at the beginning of spring. When peepers peep a large bubble seems to form under the frog's mouth.

Many frogs can do this. The bubble is the frog's vocal sac. To make a call, the frog closes its nostrils and mouth while squeezing its lungs. This action makes the vocal sac inflate like a balloon. The peeping sound forms as air leaves the lungs, passes over the vocal cords and into the vocal sac. The size of a spring peeper is comparable to a paper clip. They are found in

wooded and grassy areas of swamps. Tan and brown colors shade spring peepers with dark lines that form an X on their backs. With large toe pads they can climb but are most comfortable in the loose matter of a

forest or grassy area. They are nocturnal. At night they feed on beetles, ants, flies, and spiders. Females lay eggs underwater. During the winter, they hibernate under logs or behind loose bark of trees.

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**WOOD TURTLE:** Happy in open meadows, bogs, forests, old fields, and small streams, the wood turtle is found throughout Pennsylvania. A medium sized turtle, the wood turtle's carapace can be brown and sometimes gray. Yellow and black line can be found in the scutes. The bottom of the turtle is yellow with dark blotches. The carapace is jagged with scutes that appear to be carved like wood. The female deposits 7-14 eggs in a small hole in the ground that she dug. The female turtle then covers them with soil and lets the sun heat or incubate the eggs for about 2 ½ months. The wood turtle remains on its own during the summer but comes back to the point generally for hibernation with other

turtles. This is one example of why a turtle should not be taken out of its home territory. The wood turtle is diurnal and omnivorous. Its food choices include grass strawberries, insects, earthworms, newborn mice, and other turtle eggs.



**NORTHERN LEOPARD FROG:** Once this frog appeared on restaurant menus as a delicacy of "frog legs". Today the northern leopard frog is a species of special concern. Its population has dropped significantly from the 1970's. Scientists believe a combination of factors have led to its decline in population including over consumption, air pollution, deforestation, and water pollution. Northern leopard frogs get their name from the dark spots that appear on their backs and legs with a greenish brown background. A white line extends from snout to just behind the tympanic membrane. Female frogs are slightly larger than the males. Northern leopard frogs eat a variety of things.

They sit very still and wait for prey and then pounce with their powerful legs. They eat smaller frogs, beetles, flies, small birds, and garter snakes.



**PICKEREL FROG:** The pickerel frog is often found near streams, ponds, bogs, and swamps with cool clear water. The pickerel frog is carnivorous and eats insects and spiders. The pickerel frog protects itself from predators with a bad tasting toxic secretion. Humans should avoid picking up the frog as well as the secretion can be irritating. The pickerel frog's body patterns are a bit more organized than the leopard frog. With a background of greenish brown or tan the pickerel frog has two rows of dark brown or black squarish blotches over its back. Its eyes are located on the top of its head. The distinctive call from

the male frog is a steady low pitched snore given while the frog is completely submerged in water. The call comes from a pair of vocal sacs.

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**PAINTED TURTLE:** The painted turtle prefers slow moving wetland waters. It is most often seen basking on logs, stumps, and rocks. The carapace is olive green to black with red markings on the edge. The plastron is tan with dark blotches. Its legs and tail have yellow and red stripes. Predators include raccoons and mink. In the wild the painted turtle has a life span of 60 years or more. Painted turtles are omnivores eating earthworms, minnows, crickets, and other insects. They swallow their food whole and underwater. Painted turtles sleep underwater, buried in sand or mud. They can breathe air and absorb air in water. Painted turtles hibernate under logs, stumps, or in beaver or muskrat lodges.



**SNAPPING TURTLE:** Snapping turtles have a different body design than most Pennsylvania turtles. The carapace is large and the plastron is small, narrow, and hinge less. The carapace and plastron are connected by a ligament and not fused by bone. The turtle has a long neck with a hooked upper jaw making its head able to flex and snap its prey. The feet have long claws and webbing for mobility in mud and water. The shell is often jagged edges and ridges along the top. Snapping turtle also has a long obvious tail. They are found in bodies of water with soft muddy bottoms. They may migrate from one body of water to any

traveling over a ½ mile. As a predator, they sometimes bury themselves in mud with only their eyes showing waiting for prey. The diet of a snapping turtle includes dead fish, crayfish, frogs, aquatic insects, and waterfowl. They rarely bask in the sun.



**BULL FROG:** The bull frog is abundantly found in Pennsylvania and one of the largest species of frog in the state. Bull frogs are most often confused with green frogs. The best way to tell them apart is to look for a line or skin fold that on a bull frog starts at the eye and wraps around the tympanic membrane, while on a green frog this line runs straight down its back. Male frogs are territorial and make a deep full call that seems to have three beats. A bull frog's call can be heard up to a half a mile. It is a nocturnal ambush predator. A hungry bull frog can feed on a wide variety of species including insects,

crayfish, small mammals, snakes, and other frogs. A female bull frog can lay 20,000 eggs which float in a clump on the surface of slow moving water. It can take 1-3 years for a bull frog tadpole to metamorphosis into an adult.

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**NORTHERN REDBELLY COOTER:** The Northern redbelly cooter is a threatened species found in freshwater bogs and swamps. Threatened species are nearly endangered due to significant drops in population. Land development and road fragmentation has depleted its habitat. The adult redbelly cooter can be 12” or more in size. The carapace is dark brown to black with vertical red markings. The plastron varies from pink, orange, to red. The turtle’s head, neck, legs, and tail have yellow stripes. The redbelly cooter is an omnivore and feeds on minnows, worms, insects, and aquatic vegetation. They bask on logs but are shy and wary. They swim well to escape anything

that alarms them. During the winter, the redbelly cooter will hibernate under mud in shallow water. A female redbelly cooter will search for a suitable nest site in sandy soils out of the water in late spring. The warmth of the sun and temperature conditions can effect whether male or female turtles hatch from the eggs. Cool nests will produce more male turtles. Warm nests will produce more female turtles.



**MAP TURTLE:** Map turtles get their name from their appearance. Their carapace has designs that resemble a map with contour lines or waterways. The lines are generally yellow or orange. These lines fade as the turtle gets older. In addition to the carapace, map turtle have ‘map lines’ on their face, neck, and legs. On the carapace, a spiky dorsal fin like feature is sometimes found. The map turtle is nocturnal and rarely leaves the water unless nesting. A female can lay about 12 eggs in a nest with full sunlight. Temperature will determine whether hatchlings are male (cool temps) or

female (warm temps). Map turtles wait until the last moment to enter hibernation. While during the summer they will bask in the sun in groups in wetlands near lakes and rivers; in the winter they search our slow moving deeper water to hibernate. The male turtles will eat freshwater mollusks, dead fish, and some vegetation. The female map turtle has more powerful jaws that can crush freshwater clams and large snails to provide her with a wider array of food. The loss of wetland habitat has greatly affected the population of this turtle.