THREATENED & ENDANGERED REPTILES & AMPHIBIANS CONFIRMED OR POSSIBLY OCCURRING IN WOODSTOWN & PILESGROVE

Including Species of Special Concern Status

This guide is compiled from the New Jersey Threatened and Endangered Species Field Guide published online by the Conserve Wildlife Foundation of New Jersey. This searchable database is available at www.conservewildlifenj.org/species/fieldguide/ For source information, please note all citations, references and photo credits.

REPTILES

A juvenile Bog turtle. © Brian Zarate

BOG TURTLE *GLYPTEMYS MUHLENBERGII*

NJ CONSERVATION STATUS: ENDANGERED

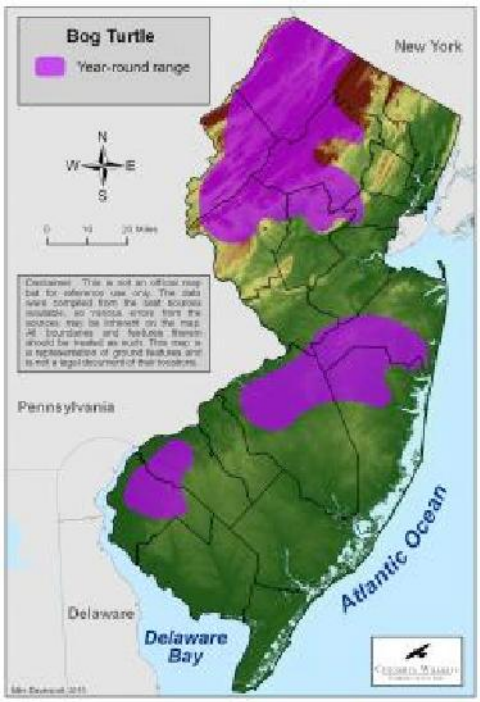
FEDERAL STATUS: THREATENED

Bog turtles are one of the smallest and most secretive of North American turtles, measuring up to 4 inches as adults. The bog turtle is dark brown with a distinct orange patch on either side of the head. The scutes (scale-like horny layers) of the carapace, or upper shell, are brown or black; they may have yellow or reddish centers. Likewise, the plastron, or underneath shell, is brownish-black with a light yellow center. The limbs are brown and may be mottled with variable amounts of dark yellow, orange, or red blotching. The male bog turtle has a concave plastron while that of the female is flat or slightly convex. In addition, the male has a long, thick tail and long foreclaws.

DISTRIBUTION AND HABITAT

The bog turtle occurs in disjointed populations throughout the eastern United States, ranging from New York and southwestern Massachusetts south to northern Georgia. In New Jersey, the bog turtle is distributed in isolated colonies in northern, central, and southwestern counties. The largest populations of bog turtles occur in northwestern New Jersey within the Wallkill and Paulinskill River Watersheds.

Bog turtles love to live in the mud. They are found in wet grassy areas, mossy bogs, and plant meadows that are divided by clear, unpolluted spring-fed streams that flow throughout the year. They like open areas for basking in the sun and nesting.



Range of the Bog turtle in New Jersey.

DIET

Seeds, berries, shoots, and invertebrates dominate the di et of the bog turtle. Insects and their larvae, crayfish, mollusks, worms, snails, slugs, amphibians, nestling rodents, nestling birds, and carrion are also eaten.

LIFE CYCLE

As daytime air temperatures warm during mid-April to early May, bog turtles emerge from hibernation and bask atop piles of grasses and mats of moss. Basking increases their body temperature and makes them hungry for food. It also causes them to mate.

From mid-June to early July, the female lays a clutch of three to four tiny, white eggs in a shallow nest located within a sunny, open area. The eggs hatch anywhere from late August to early September. Barely over an inch long, recently hatched turtles, as well as the eggs, are preyed upon by an array of mammalian and avian predators. If a young turtle survives, it may live well beyond 50 years of age.


A Bog turtle. © George Cevera

Cold temperatures during late October to late November cause bog turtles to retreat to their wintering sites. Bog turtles hibernate within underground burrows where springs ensure that water will flow during

the winter, preventing the turtles from freezing. Bog turtles may excavate their own burrows, utilize old muskrat holes, or enlarge existing tunnels of small mammals.

CURRENT THREATS, STATUS, AND CONSERVATION

The bog turtle, a victim of habitat loss, has disappeared from more than half of its historically occupied sites in New Jersey. Due to population declines, restricted habitat preference, habitat loss, and illegal collecting, the bog turtle was listed as an endangered species in New Jersey in 1974. In 1997, the US Fish and Wildlife Service included the bog turtle on its list of federally threatened species.

New Jersey Biologists have been helping to protect the bog turtle since the 1970s. Current conservation efforts include creating and managing habitat suitable for bog turtles and monitoring of the population. Biologists work with landowners, both public and private, to improve suitable habitat for bog turtles. Livestock such as goats, sheep, and cattle are often used to create, improve, and maintain bog turtle habitat. Livestock grazing controls unwanted vegetation, keeping the habitat as a grassy area. As the animals move throughout the area, they soften the ground, creating favorable conditions for these turtles.

Habitat loss due to natural succession, habitat fragmentation, and illegal collecting are the primary threats facing bog turtle populations in New Jersey. Vegetative succession can negatively affects bog turtles by eliminating open areas and thereby reducing suitable nesting and basking habitats. Invasive plant species such as Phragmites, reed canary grass, or purple loosestrife introduced into a bog turtle wetland can quickly create a monoculture that may eliminate important microhabitats. Habitat fragmentation isolates turtle colonies, potentially resulting in decreased genetic diversity and limited colonization of new sites. Others are killed attempting to cross roadways that split wetlands into two sides.

In addition, bog turtles are highly sought as pets on the black market. Illegal collecting has long been a serious problem for this species. Collecting bog turtles violates both state and federal endangered species laws and is punishable by severe fines and/or imprisonment.

Eastern box turtles are listed as a species of Special Concern in New Jersey. © Ben Wurst

EASTERN BOX TURTLE *TERRAPENE CAROLINA CAROLINA*

NJ CONSERVATION STATUS: SPECIAL CONCERN

KEY FEATURES

Highly domed carapace and a hinged plastron. Most terrestrial turtle found in New Jersey.

IDENTIFICATION

Box turtles range in length from only 4? up to 8.5?. The shell of the box turtle is unique. It's carapace is high and shaped like a dome. It's keel, or the ridge along the backbone is weak or very flat. The plastron

is hinged and can close very tightly, in front and in rear. This is meant to protect the turtle from predators, especially the neighborhood dog.

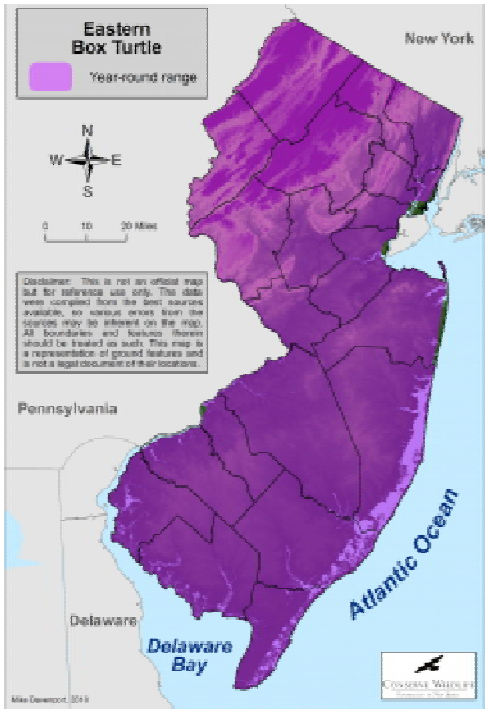
Sexes are slightly similar in appearance. Both have yellow, orange, olive, or tan on their carapace and plastron that is contrasted by a light or dark black background. Individuals can appear very different in coloration. The male (pictured above) is very vibrantly colored. Younger turtles are more vibrantly colored than older ones. Males have a longer and wider tail than females. Their carapace is often more flattened than females. Males have a more vibrantly colored (orange or red) eyes. The plastron of males is slightly concave. Females have lighter colored (light brown to light orange) eyes and their plastron is flat. Their carapace is often more domed in shape.

DISTRIBUTION AND HABITAT

The Eastern or Common box turtle occurs in the eastern United States from central Maine south to southern Georgia and Alabama, west to central Michigan and southern Wisconsin and then south into parts of Illinois, all of Kentucky, Tennessee, and then parts of Mississippi. It can be found in all of the 21 counties in New Jersey.

Box turtles inhabit open woodlands and meadows. They are often seen in neighborhood backyards in rural and suburban areas. They are usually not far from streams or ponds, however, during rainy weather they may roam farther from water. They are the most terrestrial turtle found in New Jersey. They like water, but are not adapted for swimming in water.

Studies have shown that box turtles have very small home ranges. Researchers found that their territories are around 250 square yards or less. If box turtles are removed from their territories and placed in an unfamiliar area, then they may die while trying to find their way back home. It is very important to not take a box turtle from its habitat and relocate it. If you find an injured one and do transport it to a state certified rehabilitator; record the animals location and make sure to inform the rehabilitator so it can be re-released where it was found.



Range of the Eastern box turtle in New Jersey.

DIET

Box turtles are omnivores. Changes in food preference occur during different seasons and life stages. Young turtles eat more insects, while adults eat more plant matter. Young turtles eat earthworms, snails, insect larvae, and some vegetative matter. Adults eat large quantities of fungi and particularly like berries and fruits from trees and shrubs.

LIFE CYCLE

Box turtles, like other reptiles are cold-blooded and in the northern parts of their range hibernate from late October or November until April. During hibernation they burrow into loose soil, vegetative debris, and/or loose sand, and sometimes in the mud of stream bottoms. They dig burrows with their front legs, instead of their back legs (which are used to dig holes for laying eggs). Some hibernate at depths up to two feet deep. They can arise during warm spells.

The plastron of the box turtle can close very tightly to protect itself from predators. © Ben Wurst

Individuals become reproductive at 4 to 5 years in age. They can live to be older than 20 years in age. Mating begins shortly after individuals emerge from hibernation. During courtship, males chase or follow females to mate. Males often bite the edges of the females carapace, head, and neck. The male mounts the female (males have the concave plastron that helps during cop ulation) and hooks his back legs under the back edge of the females shell. During copulation the males body becomes upright and reproduction occurs. There has been evidence that females can remain fertile for two or three years after mating.

Eggs are laid in June and July. Nesting usually occurs in the late afternoon. Females deposit eggs in a hole that she digs in loose or sandy soil and sometimes in lawns. The cavity is around 3 inches deep, or about as long as the back legs of the adult female turtle. Th ey lay between 2 to 7 eggs. Most hatching occurs in September or average incubation is around 87 to 89 days. Young either remain in the nest after hatching, emerge and go directly into hibernation, or emerge and explore for a few days to weeks, then hibernate. They do not require food during their first summer or fall before going into hibernation.

CURRENT STATUS, THREATS, AND CONSERVATION

Box turtles are fairly common throughout their range; however, their population is declining in New Jersey. Habitat destruction and fragmentation isolate individuals from finding mates and food. This causes local populations to decline in numbers or become extirpated from an area. Their slow reproductive rate does not allow for a fast recovery if a local population losses several individuals in a given amount of time.

Many people illegally collect box turtles to breed in captivity for use as pets.

They are highly sought for their use in the illegal pet trade (one of the world's most profitable markets). Many people illegally collect box turtles to breed in captivity for use as pets. Another conservation concern is the impact of high mortality rates from impacts with motor vehicles. Many roads transect suitable habitat for box turtles and many turtles that enter roadways die each year.

These threats have exacerbated their decline and due to that fact the NJ Division of Fish and Wildlife, Endangered and Nongame Species Program has listed them as a Species of Special Concern. This listing will most importantly help garner protection through enhanced habitat protection of suitable or critical habitat for box turtles.

HOW TO HELP

The Endangered and Nongame Species Program would like for individuals to report their sightings of box turtles. Record the date, time, location, and condition of the animal and submit the information by submitting a Sighting Report Form. The information will be entered into the state's natural heritage program, commonly referred to as Biotics. Biologists map the sighting and the resulting maps "allow state, county, municipal, and private agencies to identify important wildlife habitats and protect them in a variety of ways. This information is used to regulate land-use within the state and assists in preserving endangered and threatened species habitat remaining in New Jersey."

REFERENCES

- **Carr, Archie. 1952. Handbook of Turtles, The Turtles of the United States, Canada, and Baja California. Cornell University Press.**
- **Schwartz, Vicki and Dave Golden. 2002. Field Guide to Reptiles and Amphibians of New Jersey. NJ Division of Fish and Wildlife. Available in our online store !**
- **The Davidson College – Herpetology Laboratory. Eastern box turtle information.**

Eastern king snake. © Brian Zarate

EASTERN KING SNAKE *LAMPROPELTIS GETULA GETULA*

NJ CONSERVATION STATUS: SPECIAL CONCERN

IDENTIFICATION

The eastern king snake is a relatively large snake ranging from 36 to 82 inches in length. They can easily reach 5 feet and have even been known to reach 7 feet long. This snake is black with whitish-yellow chain-linked bands that cross the back and connect on the sides. The chains are usually broken up by black blotches down the entire body. It can also be called the "chain snake" due to the patterns on its body. The underbelly of the snake ranges from plain white to heavy blotches of darker pigmentation.

DISTRIBUTION AND HABITAT

The eastern king snake is a subspecies of the common king snake (*Lampropeltis getula*). The common king snake has one of the largest geographic ranges of any North American snake. Common king snakes are found across North America from the Atlantic coast to the Pacific and from New Jersey, the Midwest, and Oregon in the north to Mexico in the south. Eastern king snakes are found throughout the eastern

United States, from southern New Jersey in the north to Florida, Georgia, and South Carolina in the south. Southern New Jersey is the northeastern limit of the species' range.

The eastern king snake inhabits pine forests, rocky areas, fields, swamps, and farmlands. They normally are found close to a water source. They can often be found seeking cover under boards, logs, tins, or other debris.

DIET

The eastern king snake is not a venomous snake but it is a strong constrictor. It captures its prey and kills it by squeezing with its coils until the prey can no longer breathe. This species will eat small mammals, birds, amphibians, fish, lizards, and eve n other snakes including venomous rattlesnakes.

LIFE CYCLE

Male king snakes ompete with each other for females. In some cases, two snakes fight for the female by intertwining their bodies and forcing the other snake down to the ground. The winning snake re turns to the female to mate. Breeding season begins in mid-March and lasts until June. This allows females to lay the eggs in warmer weather to provide proper incubation temperatures. The incubation periods lasts about 8 to 11 weeks depending on the surrou nding temperature. The baby snakes range from about 9 to 12 inches in length.

This snake is usually more active during then day than at night. However, in the summer months it becomes mostly nocturnal.

CURRENT THREATS, STATUS, AND CONSERVATION

Due to popul ation declines and habitat loss, the eastern king snake was listed as a species of special concern in New Jersey. Reasons for the decline in their population are loss of habitat, illegal capture for the pet trade, road mortality, and direct killing. This s pecies, like many snakes, has an undeserved bad reputation and they are often killed, which is illegal in New Jersey.

Conservation of this species is important not only because it is a beautiful creature, but it is beneficial to our environment. This speci es helps keep rodent populations in check and balances out other snake populations as well by preying on them.

HOW TO HELP

The New Jersey Endangered and Nongame Species Program would like for individuals to report their sightings of eastern king snakes. Re cord the date, time, location, and condition of the animal and submit the information by submitting a Sighting Report Form. The information will be entered into the state's natural heritage program, commonly referred to as Biotics. Biologists map the sighting and the resulting maps allow state, county, municipal, and private agencies to identify important wildlife habitats and protect them in a variety of ways. This information is used to regulate land-use within the state and assists in preserving endanger ed and threatened species habitat remaining in New Jersey.

Spotted turtle. © Brian Zarate

SPOTTED TURTLE *CLEMMYS GUTTATA*

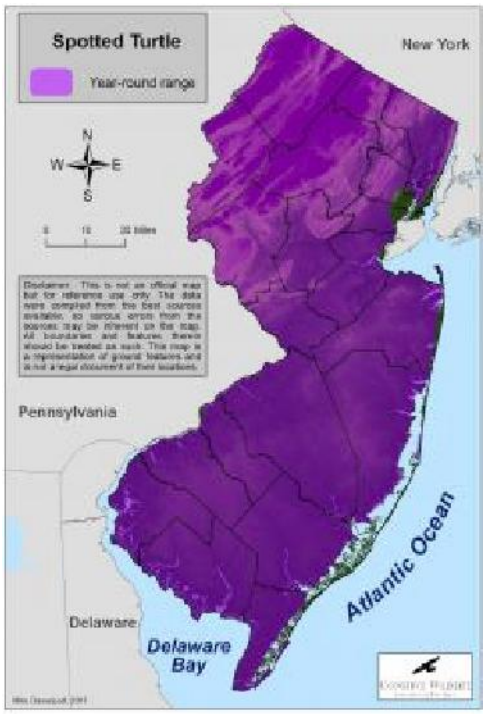
NJ CONSERVATION STATUS: SPECIAL CONCERN

IDENTIFICATION

The spotted turtle can be easily recognized by its yellow-spotted black shell. As the turtle ages the number of spots increase. The more spots on the shell the older the turtle is. This turtle is fairly small reaching about 5 inches in length. There are few cases where some turtles do not have spots; then you can identify them by the orange-yellow markings on the head and neck. The underside of the shell is usually black and yellow. Sex of this species can be determined by tail length and chin coloration. Males have short thick tails and dark coloration around the jaw. Females have long thin tails and yellow coloration around the jaw.

DISTRIBUTION AND HABITAT

The spotted turtle's range is limited to eastern North America from Ontario and Quebec in the north to Florida in the south. The western limit of its range is Michigan and Indiana.



Range of the spotted turtle in New Jersey.

Spotted turtles spend the majority of their time in slow moving, shallow waters with a soft bottom of marshy vegetation including sphagnum moss, cattails, and water lilies just to name a few. These aquatic plants are important in the spotted turtle's habita t. These shallow water ecosystems include bogs, marshes, swamps, ponds, streams, etc. They can occasionally be found swimming in slightly deeper waters. This species occasionally wanders on land to nest. Various moist sites along wetlands are sometimes used for hibernation.

DIET

Spotted turtles mainly feed in water. Their diet may include vegetation matter such as aquatic grasses and green algae. They'll also consume aquatic insect larvae, small crustaceans, snails, and tadpoles.

LIFE CYCLE

Spotted turtles breed between March and May. Breeding can occur both on land and underwater. A female turtle usually has about 2 to 8 eggs in the nest. Females only lay eggs once or twice a year. The gestation period lasts about 70 to 80 days.

The sex of the turtles in the eggs is dependent on temperatures in the surrounding environment. Higher temperatures normally produce females and lower temperatures normally produce males.

CURRENT THREATS, STATUS, AND CONSERVATION

Although spotted turtles may be found throughout much New Jersey, there are still some threats to this species. Habitat destruction, road mortality, predation, collection for pet trade purposes, and pollution are just a few threats facing this species. Habitat destruction is a major reason for the population decline of spotted turtles in this state.

Habitat destruction and fragmentation isolate individuals from finding mates and food. This causes local populations to decline in numbers or become extirpated from an area. Their slow reproductive rate does not allow for a fast recovery if a local population losses several individuals in a given amount of time.

Many species of turtles are highly sought for their use in the illegal pet trade (one of the world's most profitable markets). Many people illegally collect turtles to breed in captivity for use as pets. Another conservation concern is the impact of high mortality rates from impacts with motor vehicles. Many roads transect suitable habitat for spotted turtles and many turtles that enter roadways die each year .

These threats have exacerbated their decline and due to that fact the NJ Division of Fish and Wildlife, Endangered and Nongame Species Program have listed them as a Species of Special Concern. This listing will mostly importantly help garner protection through enhanced habitat protection of suitable or critical habitat for spotted turtles.

HOW TO HELP

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AMPHIBIANS

Carpenter frog. Image courtesy of Flickr user Mike VanValen

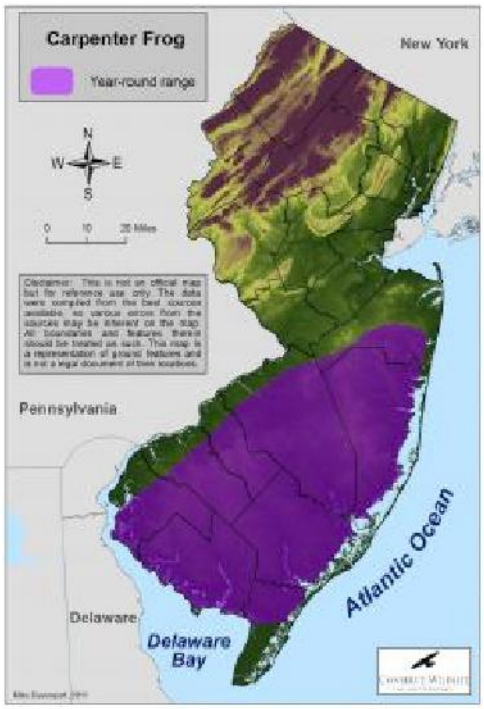
CARPENTER FROG *RANA VIRGATIPES*

NJ CONSERVATION STATUS: SPECIAL CONCERN

IDENTIFICATION

Carpenter frogs get their name from the call they make which sounds like a carpenter hammering. This frog is a medium sized frog ranging from 4.1 to 6.7cm. The color of the species is entirely brown with four yellowish stripes that run down the back and sides of the frog. The tail is grayish with large spots. The underbelly of the frog is usually a white to yellow color.

This species' most unique feature is that the webbing on its feet does not reach the tip of the longest toe. The carpenter frog is often confused with other similar species; however the webbing is the best way to tell them apart. Carpenter frogs are equipped with paired throat po uches that are spherical when inflated. This species is a nocturnal animal, which is often heard but not seen.



Range of the carpenter frog in New Jersey.

DISTRIBUTION AND HABITAT

This species is found in the Atlantic Coastal Plain ranging from the New Jersey Pine Barrens to southern Georgia. Within New Jersey, they are found in most of the southern half of the state except parts of Salem, Camden, Gloucester, and Cape May Counties. They are exceptionally aquatic frogs, barely wandering on land. They like tea colored, still water with an abundance of aquatic vegetation. These habitats include pine savanna ponds, cypress ponds, swales, sphagnum bogs, and aci d swamps because they have adapted to high acidic levels in water.

DIET

Adult carpenter frogs eat crayfish, spiders, and other invertebrates, while their tadpoles eat algae, plant tissue, organic matter, and possibly very small invertebrates.

LIFE CYCLE

The carpenter frog's breeding period is from April to August. The female lays about 200 -600 eggs at a time. The egg masses are usually attached to underwater vegetation. The larvae develop in pools. The tadpoles take about a year to develop and grow to about 3.5 inches. More developed tadpoles have a distinct line in their dorsal tail fin.

CURRENT THREATS, STATUS, AND CONSERVATION

Although the carpenter frog can be found throughout southern New Jersey, their population has been declining and needs to be monit ored. The greatest threat to this species is loss or destruction of habitat. Due to population declines and habitat loss, the carpenter frog was listed as a species of special concern in New Jersey.

HOW TO HELP

The New Jersey Endangered and Nongame Species Program would like for individuals to report their sightings of carpenter frogs. Record the date, time, location, and condition of the animal and submit the information by submitting a Sighting Report Form. The information will be entered into the state's natural heritage program, commonly referred to as Biotics. Biologists map the sighting and the resulting maps allow state, county, municipal, and private agencies to identify important wildlife habitats and protect them in a variety of ways. This informat ion is used to regulate land-use within the state and assists in preserving endangered and threatened species habitat remaining in New Jersey.

A Fowler's toad calling. © Brian Zarate

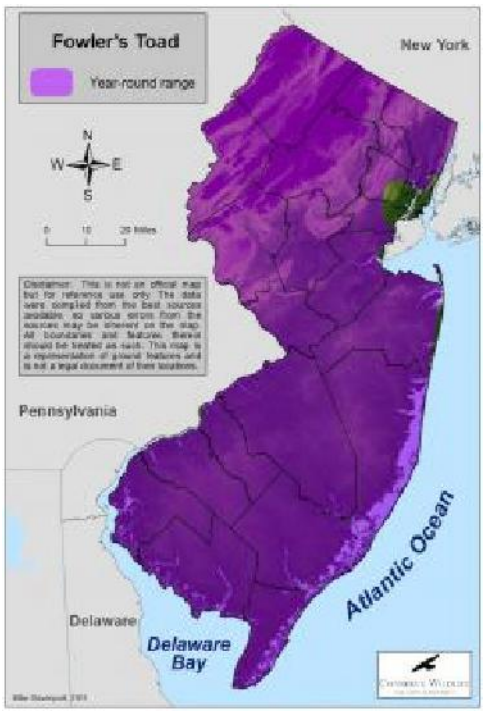
FOWLER'S TOAD *BUFO WOODHOUSII FOWLERI*

NJ CONSERVATION STATUS: SPECIAL CONCERN

IDENTIFICATION

The Fowlers Toad is a mid-sized toad which can range from 2 to 3.5 inches in size. Its coloration is earth-toned ranging from gray to brown to green with darkish spots on its back. There is a light line that runs down the center of the body. Males tend to have darker coloration than females.

There are large hard ridges behind the eyes called the parotids glands, which are longer than they are wide. Three or more warts are typically found within each large dorsal spot, compared to just one or two warts per spot on the very similar American toad (*Bufo americanus*). American toads also have spotted bellies, whereas Fowler's toads have just a single dark belly spot. These toads are more active at night and in March through late September.



Range of the Fowler's toad in New Jersey.

DISTRIBUTION AND HABITAT

The Fowler's toad ranges from Lake Michigan east to New Jersey, south to the Gulf Coast including most states except South Carolina, Georgia and Florida. They are also found in parts of Texas, Missouri and Illinois.

The species prefers open woodlands, sandy prairies, meadows, and beaches. During the colder months and extreme hot, dry periods they burrow underground for protection.

DIET

The Fowler's toad's diet consists of insects and smaller invertebrates. The larvae eat small pieces of organic matter and plant tissue

LIFE CYCLE

Breeding sites include shallow waters of marshy areas, rain pools, lakes, and other flooded areas. Breeding season occurs from late spring to mid August usually after a heavy rainfall. Breeding calls are loud and last about 1-5 seconds and are done several times per minute. Females lay thousands of eggs in long jelly-like strings. They are black on top and tan underneath. The eggs hatch within a week and development into small toads takes about 1-2 months. Tadpoles have short oval-shaped bodies with long tails and are about half an inch long.

Potential predators of the Fowler's toad are snakes, birds, and small mammals. One defense mechanism this species has is camouflage since their coloration blends in with the earth tones in the environment. Another defense mechanism this species has is toxic skin secretions which help protect from predators. When attacked the toxins irritate the predator's mouth and if ingested can be very poisonous. This species is also known for playing dead if they feel threatened or harmed in any way.

Fowler's toads are known to frequent flower beds and often burrow on hot days in mulch or soil and can often be found in crevices by large stones or other areas that offer shelter. © Ben Wurst

CURRENT THREATS, STATUS, AND CONSERVATION

The greatest threat to the Fowler's toad is habitat destruction. Disruption of breeding sites is very detrimental to their existence. Human interactions such as use of off-road vehicles may easily damage the habitat of this species. Another threat to this species is chemical pollution. The pesticides and fertilizers used for lawns and agricultural land may cause drastic declines in population in some areas.

Due to population declines and habitat loss, the Fowler's toad was listed as a species of special concern in New Jersey.

HOW TO HELP

The New Jersey Endangered and Nongame Species Program would like for individuals to report their sightings of Fowler's toads. Record the date, time, location, and condition of the animal and submit the information by submitting a Sighting Report Form. The information will be entered into the state's natural heritage program, commonly referred to as Biotics. Biologists map the sighting and the resulting maps allow state, county, municipal, and private agencies to identify important wildlife habitats and protect them in a variety of ways. This information is used to regulate land-use within the state and assists in preserving endangered and threatened species habitat remaining in New Jersey.