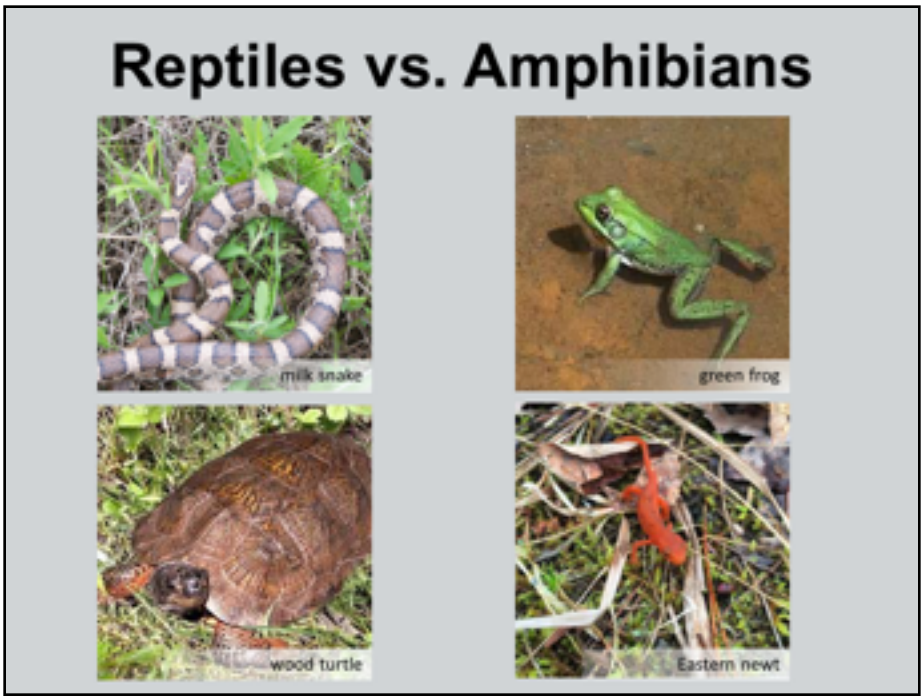
Welcome everyone, thank you for coming. My name is ___. I'm with *Speaking for Wildlife*, a volunteer program run by the University of New Hampshire Cooperative Extension. *Speaking for Wildlife* is a program that brings wildlife presentations and nature walks to communities throughout the state.

In today's *Speaking for Wildlife* presentation, I'll be talking to you about reptiles and amphibians in New Hampshire. Specifically, I'll be going through the snakes, turtles, salamanders, and frogs that are found throughout the state. I'll tell you a little bit about some common and some not-so-common reptiles and amphibians that call New Hampshire home.

I'll talk for about 40 minutes, and then we'll have some time for questions at the end. But if you have questions about the slides I'm showing, feel free to raise your hand during the presentation.



First, let's talk about what makes a wildlife species a reptile or amphibian.
Reptiles and amphibians are often grouped together because they are vertebrates (which means they have a backbone) and because they are considered 'cold-blooded' species*.

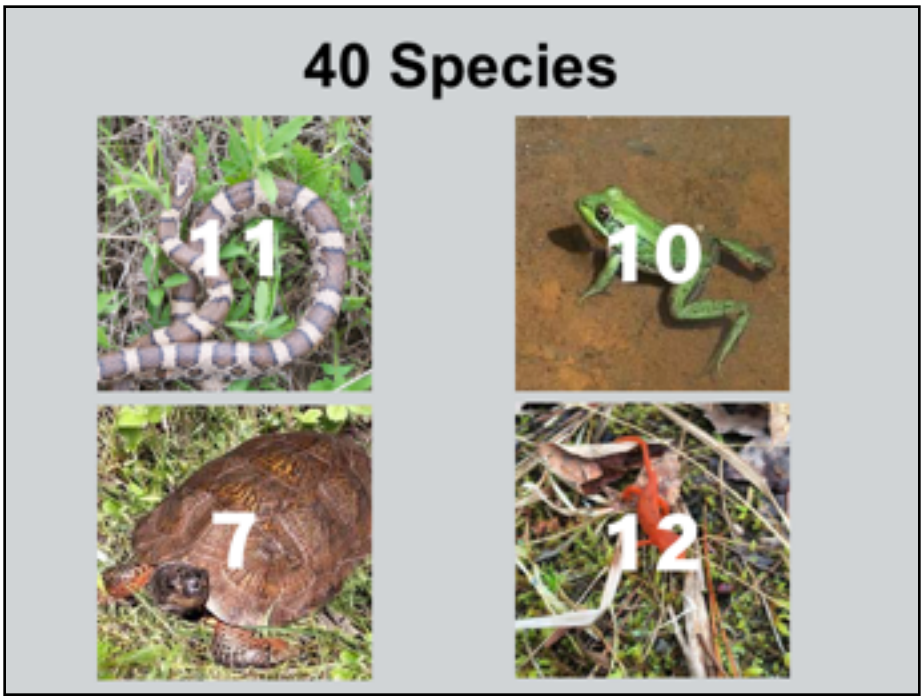
- This means that they are unable to create their own body heat, and rely on outside sources like the sun to regulate their body temperature.
- Though they share this characteristic, there are several differences between reptiles and amphibians.

Amphibians typically live part of their lives in water and part on land. In fact, amphibian is Greek for "double life." In New Hampshire, amphibians include our salamander, frog, and toad species.

- They lay soft, jelly-like eggs, usually in water or a wet place**, where juveniles hatch and spend the early part of their lives.
- When young amphibians hatch from their eggs they are called larvae (salamanders) or tadpoles (frogs) and they breathe using gills. As the larvae mature, they *metamorphose* into adult frogs, toads, or salamanders and their gills are replaced by lungs.

Most reptiles lay hard-shelled eggs, and some species give birth to live young. They breathe air with lungs. Unlike amphibians, they have dry skin covered with scales. Reptiles include turtles, snakes, alligators, and lizards – but ONLY turtles and snakes occur naturally in New Hampshire.

*Presenter's Note: a better term for this is *ectothermic*.
**Red-backed salamanders lay eggs on land and are entirely terrestrial



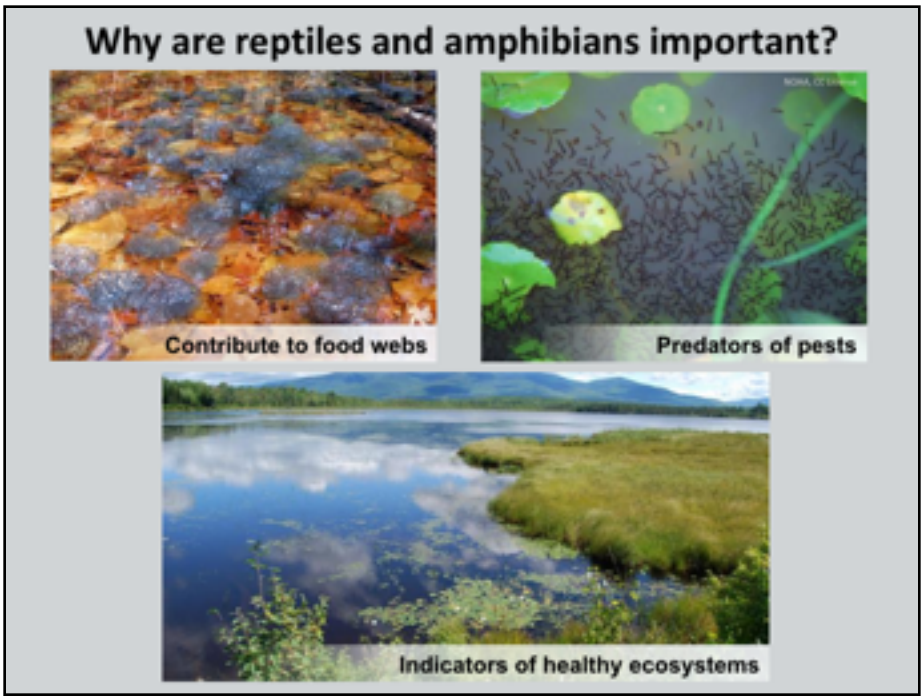
In total, there are 40 species of reptiles and amphibians in New Hampshire.

- This includes seven 7 types of turtles, 11 species of snakes, 12 species of salamanders, and 10 kinds of frogs or toads.
- These species range from among the most common animals in the state, to some of the rarest.
- Many of our state's reptiles and amphibians are listed as species of greatest conservation need* in the NH Wildlife Action Plan, and some are listed as endangered or threatened in the state.

Occasionally, a non-native species is observed in New Hampshire, usually resulting from released pets.

- Non-native reptiles and amphibians should never be released into the wild.
- They are unlikely to survive, and can spread diseases that are harmful to our native species.

[Presenter's note: The NH Wildlife Action Plan is a document that acts as a blueprint for conserving Species of Greatest Conservation Need (or *SGCN*) and their habitats in New Hampshire.]



[Ask the audience] So, why are reptiles and amphibians important?
Potential answers: They are prey species, eat bugs, fun to watch, etc.

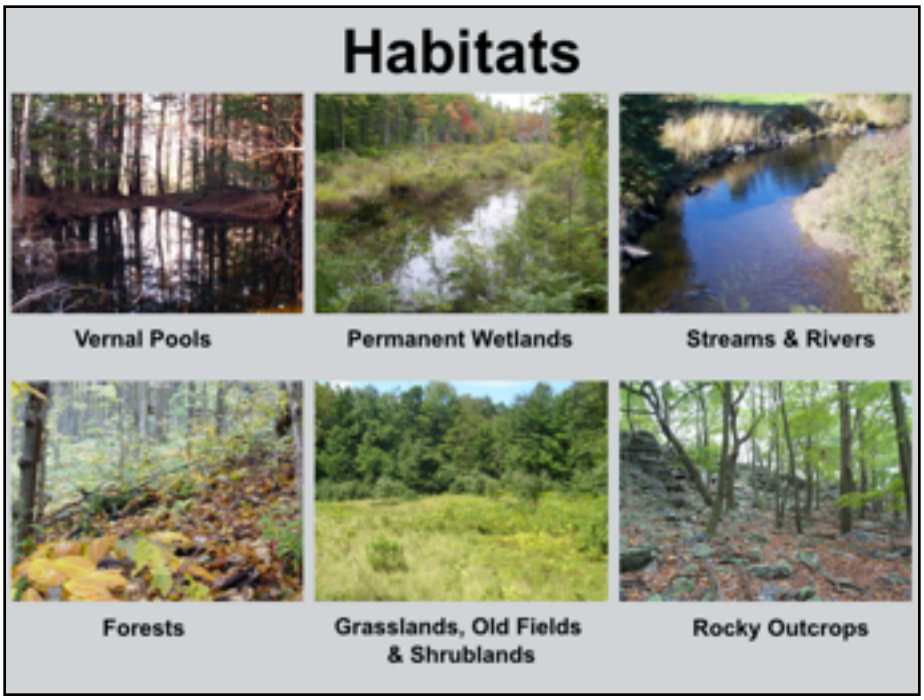
Good answers! There are a number of reasons why snakes, turtles, salamanders, and frogs are important to us and to the environment.

[Advance slide] They are contributors to local and regional food webs.
For example, many frogs produce thousands of eggs that are consumed by a variety of fish, insects, birds, and mammals.

[Advance slide] They are natural predators of some species considered pests to humans.
For example, some salamander larvae consume large numbers of mosquito larvae and adult frogs & toads eat a variety of insects.

[Advance slide] Reptiles and Amphibians are especially sensitive to changes in the landscape, like development, pollution, and the impacts of climate change.
Because of this, they're often considered good indicators of a healthy ecosystem.

[Top left photo - wood frog egg masses; Top right photo - mosquito larvae]



New Hampshire's reptiles and amphibians use a variety of habitats. Can anyone define habitat? [*Let audience try and form a definition*]

- Habitat is simply the place where a certain species of wildlife can find the food, cover, water, and space it needs.
- Each animal has it's own set of requirements. Some species use only one very specific habitat, while other species can use many different habitats.

New Hampshire's 40 species of reptiles and amphibians occupy a wide range of habitats, from lakes, rivers, streams, and marshes, to vernal pools, forests, and old fields. Many reptiles and amphibians move between different habitats during the course of a year or throughout their life cycle, using different habitats as they travel the landscape to find places to breed and lay eggs or as they mature into adults.

For this talk, I'm going to take you through some of the habitats that our reptile and amphibian species need. We will look at the snakes, frogs, salamanders, and turtles that can be found in the field, forest, and wetland habitats of New Hampshire. Our hope is that if people understand more about reptiles and amphibians and the habitats they need to survive, these animals will remain plentiful, and that generations of New Hampshire residents will be able to enjoy them for years to come.

Spring is a busy season for reptiles and amphibians. It's a time when we see longer days, flowers blooming, and temperatures rising. It's also the time when most reptiles and amphibians begin moving about the landscape to find mates and breed, after a winter of hibernation.

As temperatures increase and spring rains soak New Hampshire, a mass migration takes place - with salamanders, frogs, and toads making their way to their spring breeding grounds. The first handful of rainy spring nights where temperatures reach above 40 degrees are often called 'Big Nights' when amphibians like wood frogs, spotted salamanders, and spring peepers move across forest floors and nearby roads by the thousands.

For many frogs and salamanders, the final destination of this spring migration is a vernal pool – one of the many habitats used by reptiles and amphibians. Vernal pools are seasonal wetlands found in forested areas, and are often called 'big puddles in the woods.' They are places where rainwater or snow melt collects in shallow depressions in the forest floor, but only temporarily.

Wetland size isn't always the best indicator of wetland importance. Vernal pools are small in size but are really important ecologically. Fish are top predators in larger wetlands, but they can't survive in these pools that dry out, so vernal pools provide key breeding habitat for amphibians whose tadpoles and larvae are especially vulnerable to predators.

[Click to show wood frog photo]
Wood frogs are one of the first frog species to become active in the spring.
Often heard more than they are seen, wood frogs can be identified by the male's duck-like breeding call *[Click Speaker Icon to Play - Wood Frog Call]*.
Wood frogs lay up to 2,000 eggs in a jelly-like clump attached to the sticks and vegetation submerged in vernal pools.

[Presenter's Note: Adult wood frogs are about 1.5-3" in body length]

Several of New Hampshire's biggest salamanders use vernal pool habitats, and are often called 'mole salamanders' because the adults of these species spend the majority of their life underground or under logs in the forest, and only emerge to breed in vernal pools in the spring.

Spotted salamanders are the most common mole salamander in New Hampshire, and can easily be identified by its bright yellow spots. Spotted salamanders lay their egg masses, which contain 100-200 eggs, in vernal pools each spring before returning to life underground.

Homeowners may occasionally find spotted salamanders under woodpiles or in gardens, dirt basements, or other cool, moist places.

[Presenter's Note: Adult spotted salamanders can be up to 7.5" in body length]

The distribution and abundance of two less-common mole salamanders, the Jefferson salamander and the blue-spotted salamander is complicated because these two species interbreed, resulting in hybrid salamanders*. Hybrids of the two species are found throughout New Hampshire, but pure Jefferson salamanders are only known to occur in the southwestern part of the state.

The rarest salamander in the state is the marbled salamander, which is listed as an endangered species and is found only in the southern part of the state along the Massachusetts border. Unlike the other mole salamanders, marbled salamanders lay their eggs in the fall, rather than the spring. And their larvae spend the winter under the ice in vernal pools.

[Presenter's note: These hybrids are fertile]

Once hatched, the tadpoles and larvae in vernal pools develop quickly into young frogs and salamanders that must leave the pool before it dries up. This happens by early or mid-summer for wood frogs, and by late summer or early autumn for salamanders. The adult salamanders spend most of their lives underground in the forests that surround vernal pools, and wood frogs spend most of the year on the forest floor.

Mole salamanders and wood frogs require vernal pools to survive and reproduce, but many other reptiles and amphibians also use these temporary wetlands during different times of the year or at some point in their life cycle. **[*Click to advance slide*]**

Some turtles, like the spotted turtle, prefer shallow water and will spend time in vernal pools. Others, like Blanding's turtles *(bottom left photo),* will hibernate in the bottom of vernal pools. Blanding's will also use vernal pools extensively for feeding while traveling between larger wetlands and nesting habitats. Species that prefer wet wooded areas, like spring peepers *(middle)* and ribbon snakes *(bottom right)*, will also occasionally use vernal pool habitats.

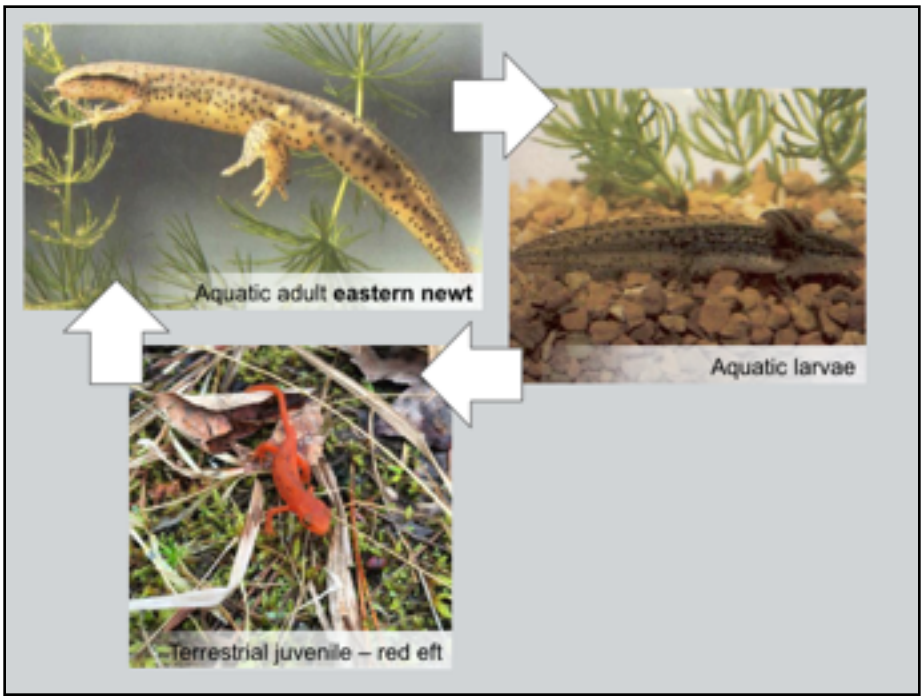
Another habitat type used by some of New Hampshire's reptiles and amphibians are permanent wetlands. These habitats are wet all year round, and don't dry up like vernal pools. They include ponds, marshes, wet meadows, beaver ponds, vegetated wetlands, swamps, and bogs (just to name a few).

[Click speaker icon to play spring peeper call] [Ask the audience] Does anyone recognize this sound?

…. That is the call of the spring peeper, one of the most recognized sounds of spring here in New Hampshire. These tiny frogs are often found near swamps and ponds in wet wooded areas.

This species is seldom seen, but often heard singing in chorus on spring nights. Along with wood frogs, they are one of the first woodland frogs to dig themselves out from under the moss and matted leaves where they hibernate.

Spring peepers have a dark marking in the shape of an 'X' on their back that helps distinguish them from other frogs. *(Point to lower right photo*)



Eastern spotted newts are common and found throughout New Hampshire. In fact, they are the official state amphibian!

Their life cycle is a bit different and more complicated than other salamanders. They're born in small marshes, ponds, or shallow lakes and after about 2-5 months, they change into small land-based newts, called red efts. They are bright reddish-orange in color, and usually have two rows of black-bordered red spots on their back. This bright red color serves as a warning to predators that the red eft produces a poisonous toxin that can kill small predators, like mice.*

After spending 2-3 years on land, the red eft matures into an adult spotted newt, which are less vibrant in color and vary from yellowish to greenish-brown. The adult newts return to the water to breed and remain there the rest of their lives. They typically live from 12 to 15 years and grow to be five inches long.

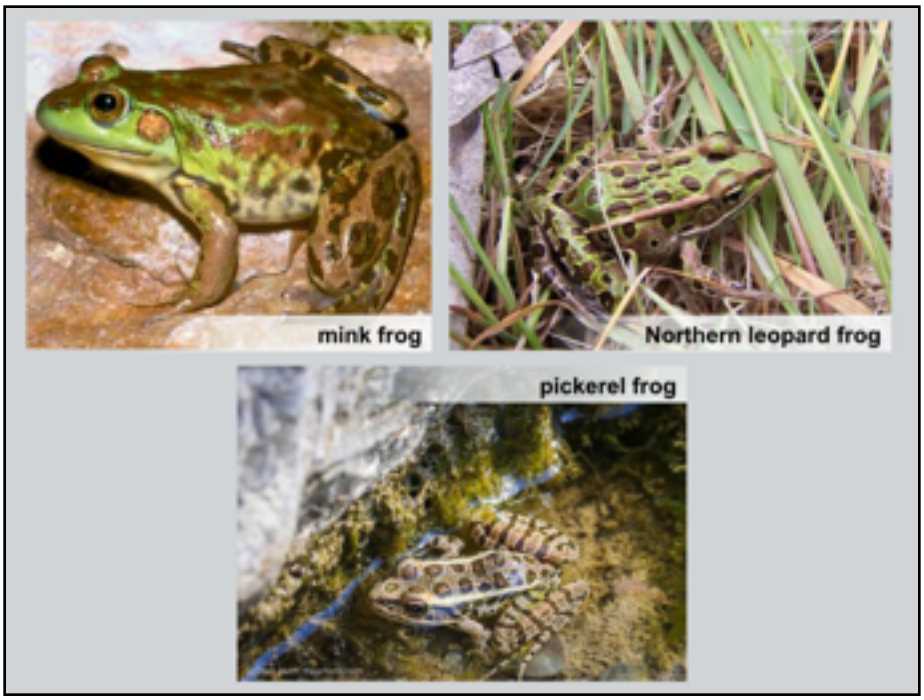
*Presenter's Notes:
- The eastern newt produces toxins in all three stages, but the toxin is at its strongest during the red eft stage.
- All newts are salamanders, not all salamanders are newts.

Green frogs and bull frogs are common throughout New Hampshire and are both found in permanent wetland habitats including the shorelines of ponds, lakes, and streams.

Though they look similar, bull frogs can be substantially bigger than green frogs and are the largest frog in the United States.

- Bull frogs will generally eat anything they can catch, including salamanders, young turtles, small birds, mice, and other frogs.
- Both species have a large circular disc behind their eye*, but green frogs have a prominent ridge along each side of their back, while bull frogs do not.

*Presenter note: That circular disc is called the *tympanum* [tim-puh-nuhm] and it helps frogs hear.



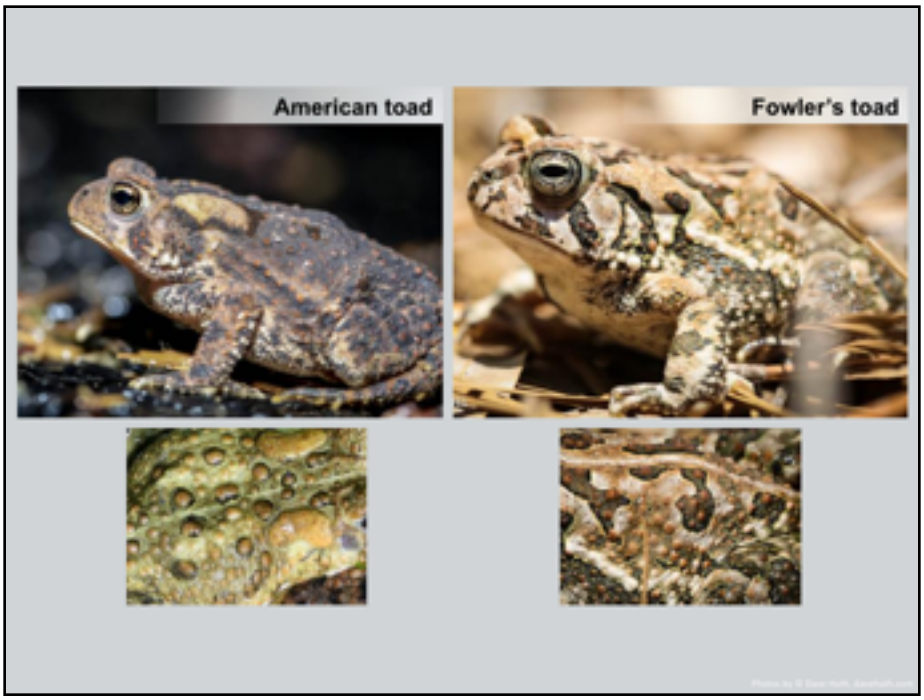
Several other frog species found in or around marshes, bogs, and ponds include mink frogs, northern leopard frogs, and pickerel frogs.

Mink frogs can be confused with green frogs, but if handled roughly, produce a musky “rotten onion” smell. They are only found in extreme northern New Hampshire, north of the White Mountains, and are considered a species in need of conservation.

Northern leopard frogs, though found throughout New Hampshire, are also considered a species in need of conservation.

Pickerel frogs are a common species throughout the state and can be found at the edges of lakes, ponds, and streams in wet pastures and fields. They use the dense vegetation alongside these wetlands for cover.

[Presenter’s note: Pickerel frogs have squarish dark spots and bright yellow or orange inner thighs. Northern leopard frogs have rounded dark blotches with pale borders and lacks bright color on the inner thigh.]



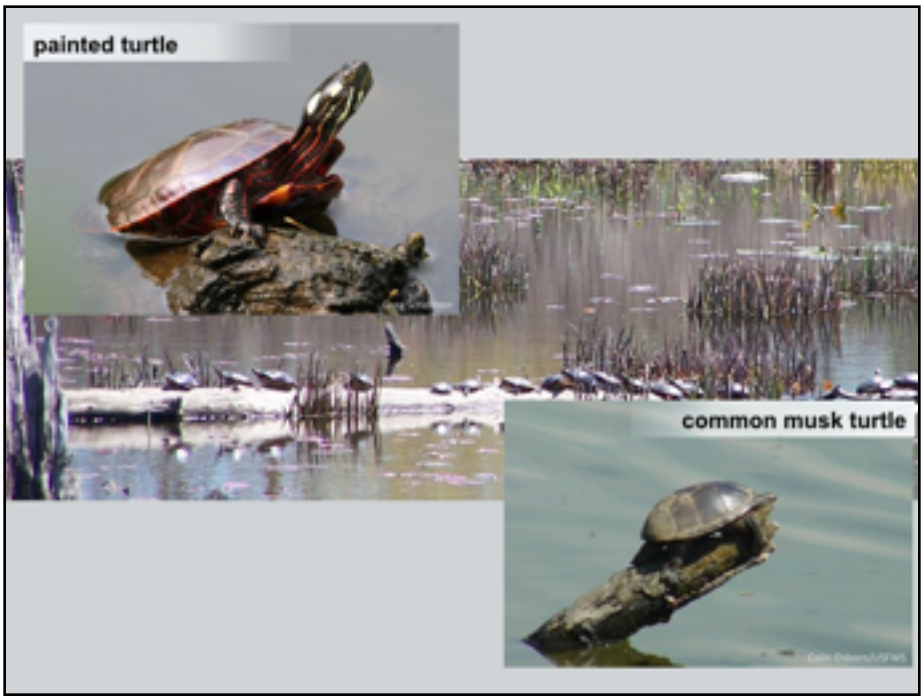
Unlike frogs, toads have dry skin, short hind legs, un-webbed feet, and they live on land most of the year.

- However, they do use the shallow water of wetlands for breeding and laying eggs.
- During the rest of the year, New Hampshire's toad species – the American Toad and Fowler's toad – can be found in forested areas, agricultural fields, lakeshores, floodplains, and even in lawns.

Though the two species look similar, American toads are common throughout New Hampshire and Fowler's toads are restricted to the areas surrounding the Merrimack and Connecticut rivers and are a state threatened species.

- To tell them apart, you can count the number of warts on each of the darkest spots on their back.
- Fowler's toads have 3 or more warts in each of these spots, and American toads only have 1-2 warts per dark spot.

Where they occur together, Fowler's toads and American toads may hybridize and have intermediate characteristics, which can make identification difficult.

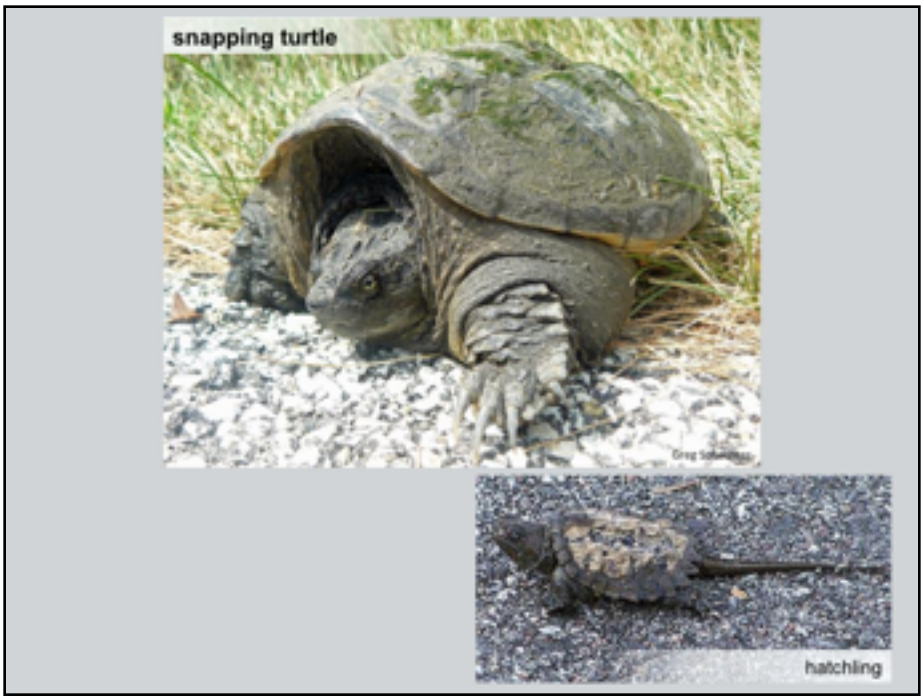


One of the most frequently seen reptiles in New Hampshire is the painted turtle, the most common turtle in the state.

- They're sometimes called sun turtles, because they are frequently observed basking in the sun on the logs, rocks, and hummocks found in a variety of wetlands and open water habitats.
- It's not unusual to see several individuals basking on a log together.
- But look quickly! They will drop off into the water with any sudden movement, which is how they protect themselves from predators.

[Click to advance slide] Musk turtles are another species that might be seen climbing out on limbs over water to bask.

- They're found in southern New Hampshire, and are exclusively aquatic - found in ponds, shallow lakes, slow-moving streams and rivers that have soft muddy bottoms.
- Musk turtles are also known as the 'Stinkpot' for the pungent odor they release.



Snapping turtles, sometimes called snappers, are the second most common type of turtle in New Hampshire. They're found throughout most of the state, but are less common in the north. They're also the state's largest turtle, with a shell length normally between eight to eighteen inches. If you think they're prehistoric looking, you're right! Snapping turtles have been around for about 200 million years.

They live in a variety of habitats, including ponds, lakes, streams, and rivers. However, like most of our turtle species, they leave these wetland habitats in the spring and summer to lay their eggs on land. This is the time of year when you're most likely to see turtles.

For nest sites, snappers prefer sandy soil in sunny spots where their eggs will stay warm. They lay 20-40 ping-pong ball shaped eggs in a hole before returning to the water.

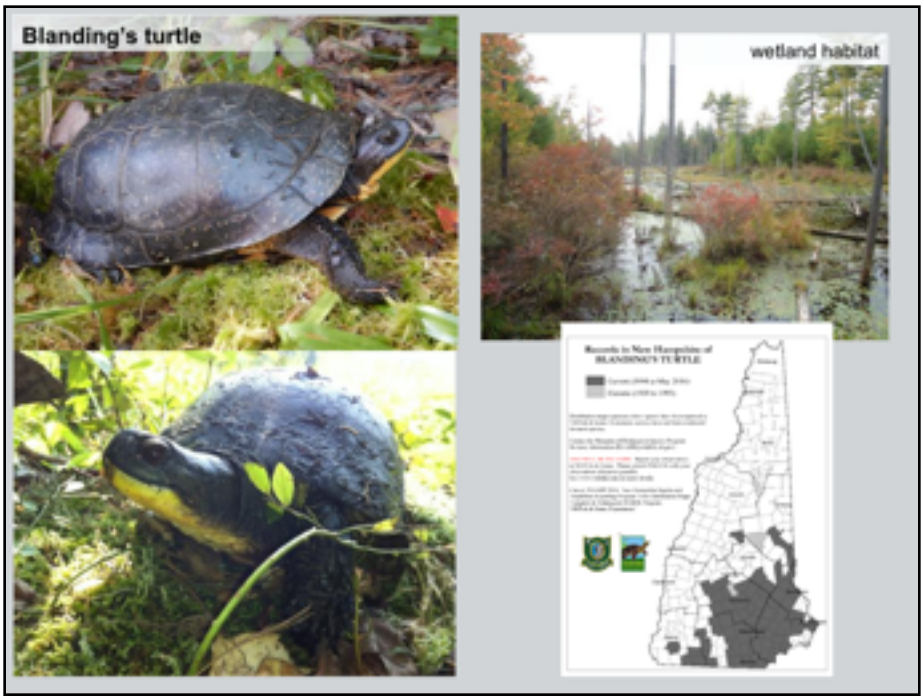
Unlike many other turtles, snapping turtles can't pull their head and limbs completely inside their protective shell. When confronted by a threat on land, snapping turtles may react defensively and snap their powerful jaws. While in aquatic habitats, snapping turtles usually go undetected and will almost always attempt to retreat.

[Presenter's note: Because snapping turtles react can defensively when approached, caution should be taken if/when helping these animals move across a road. The best way to pick up and move a snapper is to grasp the carapace (top shell) with both hands just above the two hind legs near the tail so it cannot reach you with its jaws. It might, however, scratch with the claws on its hind feet.]

Spotted turtles are a small 3-5 inch turtle that can be recognized by its numerous yellow spots covering a dark shell. They are a threatened species, and are only found in southern New Hampshire. They prefer shallow vegetated wetlands but, like many turtles, they use terrestrial habitat for travelling between wetlands, laying eggs, and periods of inactivity.

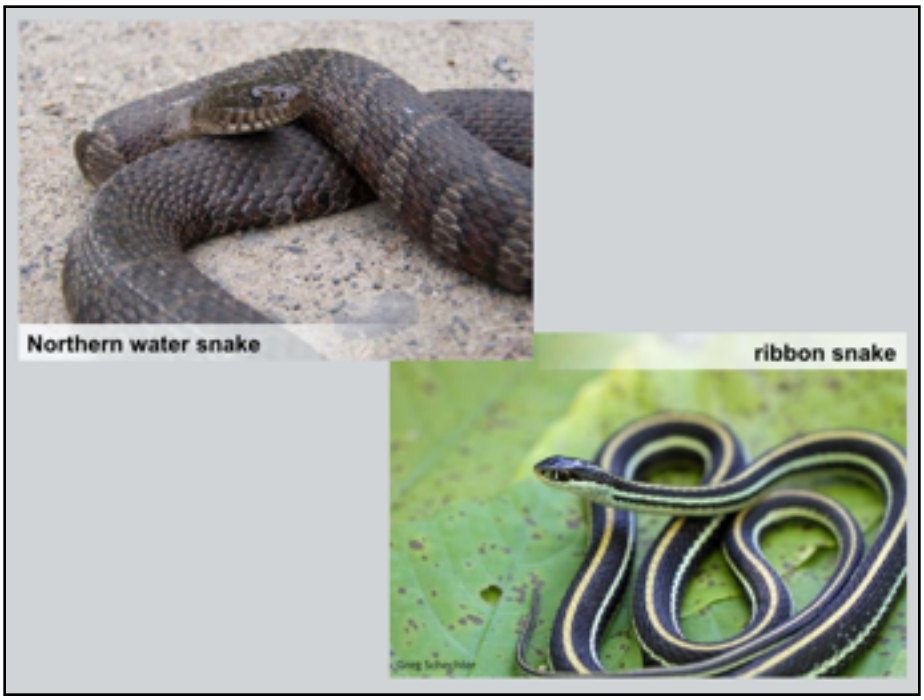
In the spring, females venture onto land to lay 2-8 eggs in a depression in open meadows, fields, or other disturbed areas. Unfortunately, predators like raccoons, skunk and foxes really enjoy turtle eggs. It's estimated that 90% of turtle nests are destroyed by predation.

Like many turtle species – including painted turtles and snapping turtles - the temperature of the nest influences the sex of hatchling spotted turtles. Very high and very low nest temperatures produce females hatchlings, and moderate temperatures produce male hatchlings.



Blanding's turtles spend significant time both in the water and on land. They use numerous types of wetland habitats including marshes, swamps, bogs, beaver ponds and vernal pools. They use the uplands that connect these systems for nesting and travel between wetlands. Research has shown that in the summer, females looking for a good nesting spot can move almost two miles! Because of this, Blanding's turtles require large landscapes with minimal development and few roads.

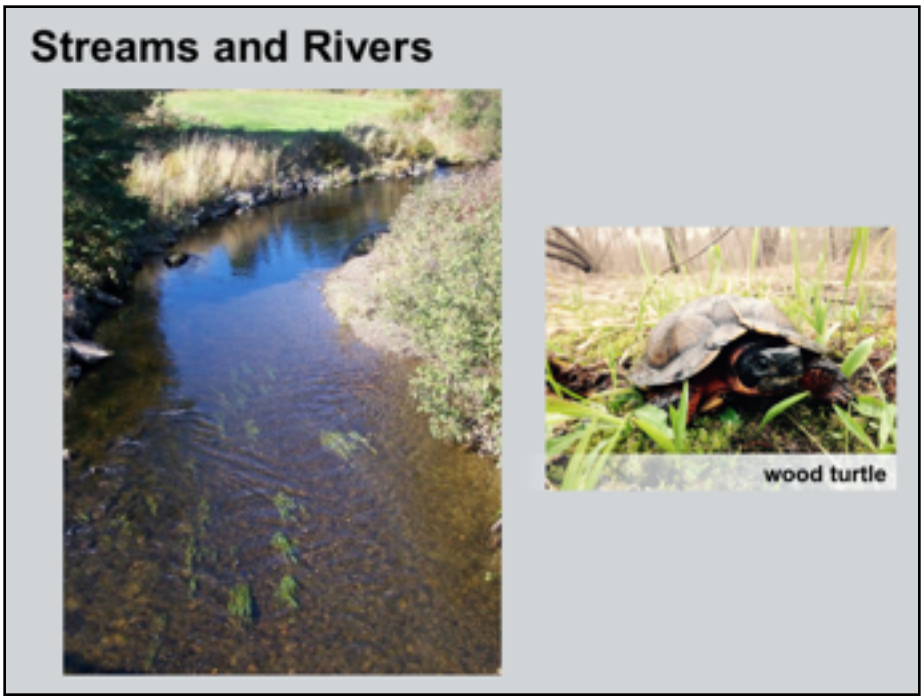
The distribution of Blanding's turtles in New Hampshire is restricted to the southeast part of the state, and they are currently listed as a state-endangered species. They are particularly vulnerable to population declines because they travel very long distances, do not reproduce until late in life (between 14-20 years old), and their young have very low survival rates.



The northern water snake is the only snake in New Hampshire that is consistently found in or near water. You can find a northern water snake in almost any lake, pond, or stream in New Hampshire, as well as in swamps and marshes. These large, thick snakes are most often seen basking on sticks, logs, or rocks near the water.

Ribbon snakes can also be found in and near aquatic habitats such as ponds, swamps, bogs, and stream edges, and will also use wet woodlands.

[Presenter's Note: Northern water snakes are a larger snake typically measure 12-24" in length; Ribbon snakes are a very slender snake measuring 16-35 inches]



Now let's get familiar with some reptiles and amphibians that we might find in stream and river habitats. New Hampshire is home to around 10,000 miles of rivers and streams and several species have adapted to using these unique habitats.

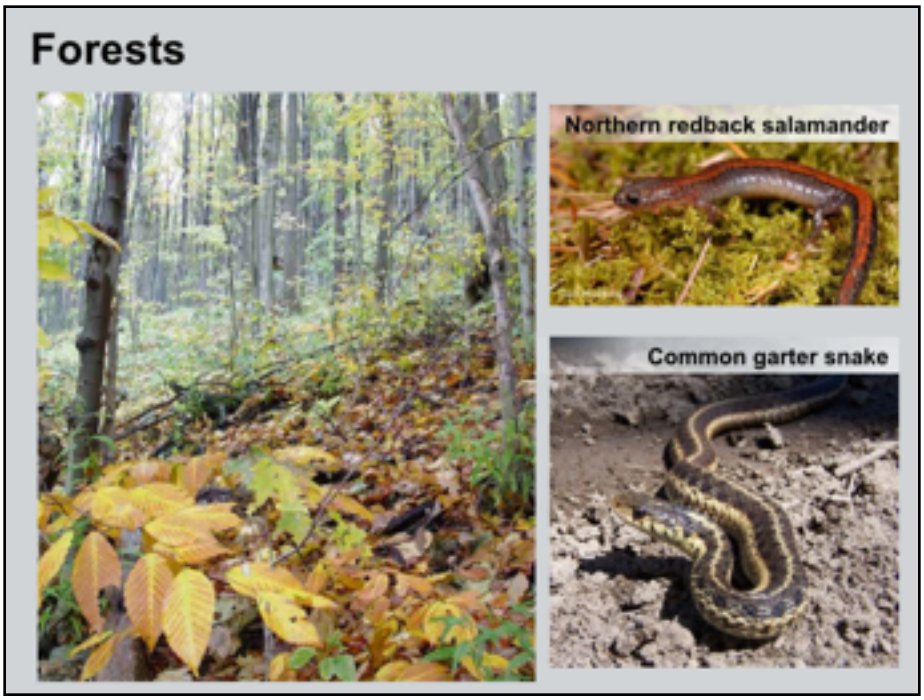
Wood Turtles are most often found in slow-moving streams and channels with sandy or gravel bottoms. They will use terrestrial habitats extensively during the summer, but often opt for floodplains, meadows, woodlands, and fields within 1,000 feet of a suitable stream or river.

Wood turtles are known for their sculpted shells, where each large plate looks like a pyramid. They are found throughout the state (except at high elevations), but have become increasingly rare due to their habitat needs.

A summer afternoon spent exploring a stream might also result in sightings of some of our stream salamander species, like dusky salamanders and Northern two-lined salamanders. Northern spring salamanders are also found in streams, but are most often reported in the White Mountain region where the water is cold and clear.

[Click to Advance Slide] The monster of all salamanders found in New Hampshire is the mudpuppy, a river-dwelling gray-brown salamander that can grow up to 13 inches long and has large red bushy external gills.

- They've been documented in parts of the Connecticut River, but it's unknown whether they are native or were introduced.
- It's possible they were released by educators who used them in classrooms in the early 1900s, but some records indicate they might have been present before then.



Next, let's take a look at the reptiles and amphibians that use forests. Around 85% of New Hampshire is forested, so it's no surprise that some of the reptiles and amphibians that use forested habitat are the ones we see most and might be most familiar with.

[Advance the Slide & Ask the audience] Does anyone recognize this salamander species?
- *[Click*] Yes, it's a redback salamander.
- We usually think of salamanders as living in wetlands, but redback salamanders spend their entire lives out of water in the forest
- They are extremely common in New Hampshire. They are so abundant that the weight of all the redback salamanders put together is more than that of all the breeding birds and small mammals combined! (in northeast forests)
- If you turn over a number of rotting logs in moist woodlands there's a good chance you will find a redback salamander. Just remember to always put the logs back the way you found them.

[Advance the Slide & Ask the audience] Can you identify this snake?
- *[Click]* That's right – it's a garter snake!
- If you find a snake in your yard, there's a good chance it's a garter snake.
- They can vary greatly in appearance, but generally have a dark body with yellow stripes or blotches.
- As New Hampshire's most common snake, they can be found almost anywhere including forests, fields, backyards, and gardens.
- They're active during the day, and are often observed in the morning, warming themselves on stairs and sidewalks exposed to the sun.

[Click speaker icon to play frog call]
The loud, resonating trill of the gray tree frog can be heard during spring and summer in forested areas with small trees or shrubs that are close to water.
These frogs are seldom seen on the ground, and can be found in tree cavities, logs, or under loose bark during the summer.

In the winter, gray tree frogs hibernate beneath leaf littler, rocks, and rotting logs.
- Along with some other frog species, like spring peepers and wood frogs, gray tree frogs can withstand temperatures as low as -20 degrees for several days
- Thanks to a high amount of glycerol in their blood, which acts like a natural antifreeze, they are able to freeze up to 40 percent of their bodies, thaw, and repeat the cycle several times while still surviving

Four-toed salamanders are most often found in wet woodlands near shallow pools and under moss, leaf litter, and woody debris. They're a small salamander, and can be identified in part by the four toes on both their front and hind feet. (Note: most other salamanders have four toes on their front feet, and five toes on their back feet)

[*Ask the audience*] Have you ever heard that salamanders can lose and regrow their tails?

- Well it's true! At least for some species of salamanders, like the four-toed.
- When snagged by a predator, their tail can detach.
- After the tail falls off, it will continue to wiggle, which distracts the predator and allows the salamander to escape safely.
- Eventually, the tail grows back.

The ringneck snake is relatively easy to identify when encountered, due to the distinct yellow band around its neck.

- They prefer moist woodlands as their habitat, which is also habitat for their most important prey – redback salamanders.
- They'll also feed on earthworms, insects and, on occasion, fish found in nearby water.
- Ringneck snakes are relatively small*. They rarely bask in the open and are generally under the cover of rocks and logs during the day. Like the salamanders on which they prey, ringnecks are mostly nocturnal.

*[Presenter's note: Ringneck snakes are slender snakes measuring 10-15 inches]

Grasslands, shrublands, and reverting old fields are important habitats, especially for many of New Hampshire's snake species. Powerline rights-of-way can also provide important habitat for snakes when managed as extensive grasslands or shrublands.

[Click to advance the slide] Snake species that use these areas and a variety of other habitats include brown snakes, which are found in southern New Hampshire, and redbelly snakes, which are common throughout the state. They will find and use a variety of objects for cover, including woody debris, rocks, and human trash and debris piles.

Grassland habitats are an increasingly rare sight in New Hampshire. Many species that rely on these habitats, like smooth green snakes, have seen population declines over the last several decades as these habitats are developed or revert to forest. The maintenance of lawns and hayfields by mowing can also lead to direct mortality of individual smooth green snakes, as well as other species.

Milk snakes are medium-sized snakes covered in red and tan blotches. They have a black and white checkerboard pattern on their belly.

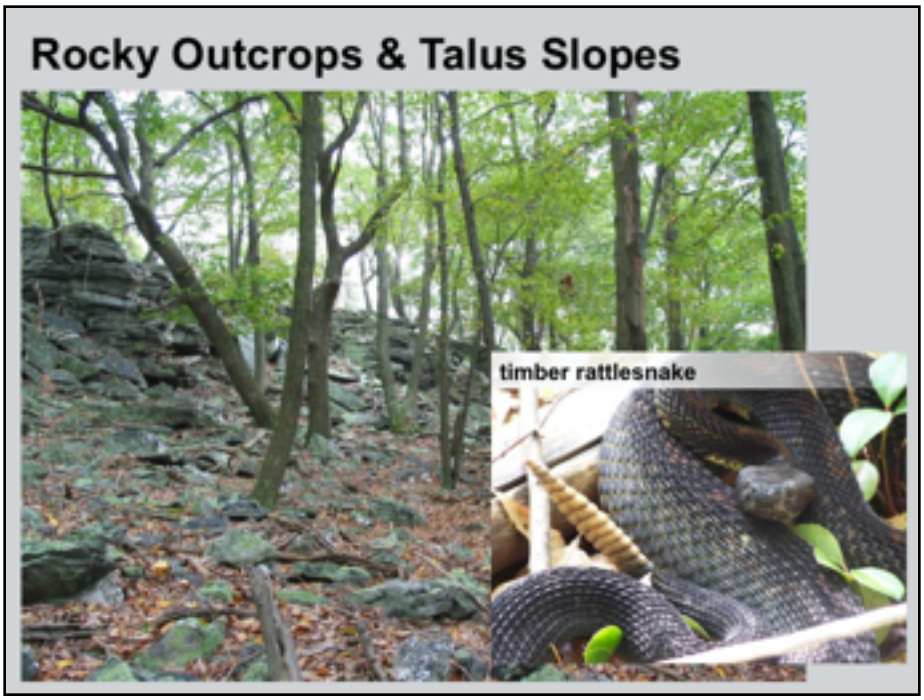
- They're commonly found near fields, woodland edges, and rocky hillsides, but can also be found near human dwellings like barns where there are mice to eat.
- You might even find a milk snake hibernating in your basement if there are cracks in your stone foundation
- Though quite common, their secretive nature and nocturnal habits make milk snakes less likely to be encountered than garter snakes

Like other reptiles and amphibians, each snake species has adapted to particular habitat types based on their food preferences and movement patterns. The more uncommon species are either long-distance travelers or require very particular habitats to find their prey.

- Black racers have large home ranges and require large patches of suitable habitat in the form of dry brushy pastures, rocky ledges, and woodlands.
- Eastern hognose snakes feed on amphibians, primarily toads, so they need to travel to seek out amphibian habitats like wetlands and vernal pools.
- Because of their movement, racers and hognose snakes often come into contact with people, which can trigger people's fear of large snakes, with the end result being a dead snake.
- Due to this and other threats like loss of habitat and road mortality in the southern part of the state where they are found, black racers are a threatened species and eastern hognose snakes are an endangered species in New Hampshire.

Snakes are among the most misunderstood of all wildlife species. As a result, many beneficial and harmless snakes have met untimely deaths at the hands of shovel-wielding humans. But snakes in New Hampshire are almost never dangerous.

- Like most wildlife, snakes only become aggressive when backed into a corner or harassed and they would rather avoid people than be seen.
- Contrary to a popular myth, there are no water moccasins or copperhead snakes native to New Hampshire.

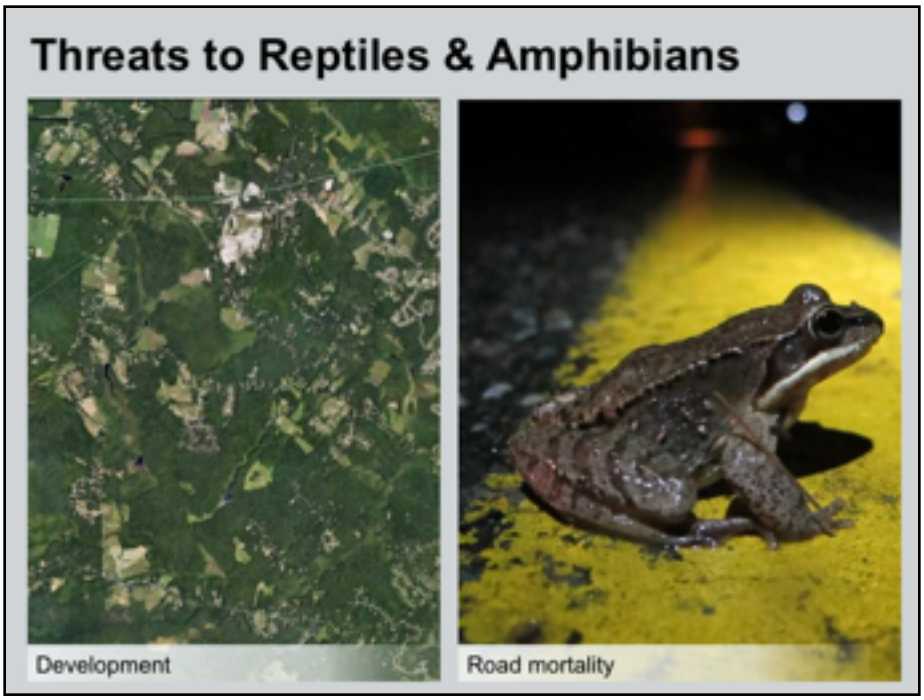


The only venomous snake in New Hampshire is the extremely rare timber rattlesnake, which is an endangered species.
Timber rattlesnakes prefer rocky, south-facing hillsides.

- They give birth to live young in the fall before returning to deep rock crevices to hibernate for 6 months of the year from November until May.
- There is only one small population known to remain in New Hampshire.
- Though they are venomous, timber rattlesnakes are mild-tempered and are unlikely to strike unless provoked.

[Presenter's note: A talus slope is a slope formed by an accumulation of broken rock debris]

So now you've seen some of the many different habitats found in New Hampshire, and have been introduced to the reptiles and amphibians that use them. Many of these species are are listed as species of special concern, threatened, or endangered. Let's take a look at some of the threats to these species, and ways that you can help to conserve our reptiles and amphibians and the habitats they need.



Like almost all of New Hampshire's wildlife species, the primary threat to our reptiles and amphibians is the loss of their habitat.

- Many of these species require specialized habitats, like black racers, or very large habitats, like Blanding's turtles.
- For mole salamanders, the biggest threat is the filling of vernal pools and development of the forested habitat that surrounds them.

The habitats that reptiles and amphibians require continue to be lost or fragmented by roads and houses as New Hampshire's communities expand.

[Click to advance slide]

Many reptile and amphibian species travel to multiple wetlands throughout the year, or venture between wetland and upland habitat to breed and lay eggs, crossing roads in the process.

- Culverts that allow water from wetlands and streams to pass under roads are often undersized, and not suitable for wildlife to pass through.
- This forces reptiles and amphibians to move up the bank and attempt to cross the road which often results in mortality.
- In the case of some species, like Blanding's turtles, roads are the primary cause of mortality.

In some areas of New Hampshire, volunteers help frogs and salamanders migrate across roads on rainy spring nights (aka "Big Nights") to make sure their journey to their breeding pools is a safe one.

Runoff of fertilizers, pesticides, and other pollutants into nearby wetlands is a threat to reptiles and amphibians
- This is especially true for amphibians, since they are very susceptible to pollution due to their moist, permeable skin

[Click to advance slide]
Unfortunately, some encounters with humans can also result in mortality for reptiles and amphibians
- Nesting snakes and turtles may be found in gardens, mulch beds, or wood piles, which are attractive nesting spots
- But spending time in these locations makes them vulnerable to being killed by pets or hit with lawnmowers and vehicles.

Encounters with humans are especially dangerous for snakes. Though they play an important role in our ecosystems*, snakes are misunderstood which often leads fearful homeowners to kill them.
- This type of mortality can lead to population declines and even local extinctions over time

*[Presenter's note: Snakes and all other wildlife are part of the food chain that maintains wildlife diversity and balance. Also, many snakes eat other animals that humans may consider nuisances. For example, rodents and insects that may carry diseases are an important part of the diets of many New Hampshire snakes. In turn, snakes may serve as a food source for animals like hawks, foxes, and bobcats.]

So, what can you do to help our state's reptiles and amphibians?

Often, the best thing we can do for wildlife species is to leave them where they are.
- Reptiles and amphibians which are not in danger should be left undisturbed
- Keep wildlife wild and allow reptiles and amphibians to stay in their natural environments.
- A turtle, snake, frog, or salamander taken into your home is an individual removed from the local population. It is also illegal to possess many of our reptiles and amphibians in New Hampshire.

[Click to Advance Slide] You can also slow down and watch for reptiles and amphibians in roadways.
- Avoid driving on the first warm, rainy nights in the spring to help salamanders and frogs get to vernal pools successfully
- If you see a turtle crossing a road or parking lot, and it is safe to do so, help it safely cross the road in the direction it was traveling.
- Sometimes people will unknowingly move a turtle to unsuitable habitat, so once out of danger, just let the turtle go on its way.
- Be careful to never create a dangerous situation for other motorists or yourself.

You can help to maintain or enhance existing habitat for reptiles and amphibians in a variety of ways.

- Maintaining the natural flow of wetlands, reducing the use of fertilizers and pesticides on your property, promoting native shrubs, and letting your grass grow longer in some areas are all actions that benefit reptiles and amphibians in some way.
- Be mindful when mowing your lawn, gardening, or moving brush or mulch piles that these areas might be used by snakes or turtles

[Click to Advance Slide] You can conserve your own land or support local conservation efforts that seek to permanently conserve large landscapes with a diversity of wetlands and uplands

- This will help to ensure that those areas will never be developed and will continue to function as habitat for reptiles and amphibians

You can also report your observations of turtles, frogs, salamanders, or snakes seen in New Hampshire to the Reptile and Amphibian Reporting Program (aka RAARP).

- These reports are extremely valuable to wildlife biologists, who use the information to help determine the distribution of all reptiles and amphibians in New Hampshire.
- This is especially important for many of our less common species.
- Some reptile and amphibian species are so rare, that their status in New Hampshire is completely unknown. [Advance Slide}
    - For example, there are currently no known populations of Eastern Box turtles in the state, though individuals have been reported.
    - Slimy salamanders were reported historically from one town in New Hampshire (Rindge) but it isn't known whether the report represented a native population and if so, whether that population still exists.

Details on reporting and identification of reptile and amphibian species can be found at wildnh.com.

There are some great resources out there to learn about wildlife.

I'll be passing out a questionnaire in a minute where you can sign up for an e-newsletter called "Taking Action for Wildlife" – you can learn about upcoming events, new research, and new programs related to wildlife in New Hampshire

UNH Cooperative Extension hosts many workshops on wildlife and forest topics and has a lot of information on habitats and land stewardship. You can visit UNH Extension's Forestry & Wildlife website at nhwoods.org.

Other Good Websites:

WildNH.com = NH Fish & Game's website – learn more about New Hampshire's reptile and amphibian species, as well as other wildlife – There is also information on NH's Wildlife Action Plan, as well as distribution maps for many species.

Takingactionforwildlife.org = a partnership between NH Fish & Game and UNH Cooperative Extension – learn about conservation actions that landowners, communities, and conservation groups can take to help wildlife

That's the end of my presentation. Before I take questions, I'd like to thank the organizations who sponsor the Speaking for Wildlife project:

•The **New Hampshire Charitable Foundation** and the **Davis Conservation Foundation** for grants that supported the creation of Speaking for Wildlife,
•**UNH Cooperative Extension** for the support of the Speaking for Wildlife volunteers,
•And **New Hampshire Fish and Game**, whose research and work are the basis for this presentation and who continue to support the program.

Thank you for listening! Questions?