



# AMOS LAKE ASSOCIATION WILDLIFE GUIDE

All animals need habitat for survival. The basic elements of habitat are: food, water, shelter and space. If a critical component of habitat is in short supply or missing, this habitat component is a "limiting factor" to an animal's survival.

What is classified a bird? The characteristics include:

- **Vertebrates:** All birds have a backbone, which places them in the Phylum *Chordata*. Unlike most other vertebrates, however, birds have a lighter skeletal structure filled with hollows, gaps, and air sacs to keep birds lightweight so they can fly more efficiently.
- **Feathers:** All birds have evolved feathers, composed of keratin and other proteins and light-reflecting pigments, to serve as body insulation. Different types of feathers may also be ornamental, such as plumes, [crests](#), or streamers. Other feather types help birds control their flight, while some feathers, such as down, are strictly for insulation.
- **Wings:** Wings are one of the most defining characteristics of birds. Even flightless birds have vestigial or adapted wings or flippers they may use for swimming, threat displays, or courtship dances. The size and shape of wings vary between species based on how the bird flies and wing markings are useful to identify bird species.
- **Bill:** All birds have a bony, keratin-covered projection forming their mouth. This bill is frequently evolved for specific bird diet types, and many birds also use their bills as tools for carrying, drumming, drilling, preening, and other tasks. Some birds even use their bills as weapons or to help regulate body temperature.
- **Warm-blooded:** All birds are endothermic, which means they generate their own internal body heat and do not rely exclusively on their environment to maintain their temperature. While many birds will sun themselves to help regulate their temperature, [sunning](#) has more than one purpose and is not solely for body temperature maintenance.
- **High metabolism:** Birds have a high, efficient metabolism that quickly turns food into usable energy. They have a four-chambered heart and high respiratory rate as well, which helps them be efficient and agile fliers as well as maintain their high body temperatures.
- **Bipedal:** All birds have two legs used for perching, walking, hopping, or running. Different types of birds have evolved different leg shapes and lengths to suit their needs. For example, wading birds have thin, long legs suitable for moving through deeper water, while raptors have thicker, more powerful legs for capturing prey.
- **Furcula:** Though not visible to birders, every bird has a furcula, or [wishbone](#), that protects the chest cavity during wing beats. This

keeps the bird's chest organs safe from excessive pressure as the wings move and birds change altitude.

- **Egg-laying:** All birds lay amniotic eggs as part of their reproductive cycle. The eggs have a hard shell and require incubation to continue development until hatching. Egg size, shape, and markings vary for each species, as does the number of eggs laid, necessary incubation time, and the condition of the chicks at hatching.
- **Communication:** Birds have highly developed communication skills, and many bird species communicate vocally through elaborate songs and calls. Nonverbal bird sounds are also part of their communication abilities. For many species, extensive communication is part of courtship behavior, territorial defense, parent-chick recognition, and community cooperation.
- **Navigation:** Migratory and non-migratory birds alike have keen navigational skills. For migrating species, those skills allow them to make journeys of hundreds or thousands of miles through highly variable climate and geographical conditions, yet arrive at the same places year after year. [Non-migratory birds](#) also use their navigation skills to visit the same food sources or nesting sites without difficulty.

## All Birds Are the Same but Different

Many other animals share some characteristics with birds, but only birds represent all the features above to belong to the Class Aves. At the same time, all birds are different, and through the 150 million years of evolution since the Mesozoic Era when birds first evolved from reptiles, small differences have created the roughly 10,000 bird species we enjoy today. Yet with every one of those species, all of these common characteristics are present, making each one a related but distinct bird.



## Habitat

Food and cover are essential for the survival of all species. Loss of suitable nesting sites is a major factor in the decline of some bird species. In the wild,

many species nest in cavities of dead trees. With the loss of hedgerows in some parts of the country and the removal of dead trees in towns, natural nesting sites are often limited. Also, some highly competitive, non-native species of birds have taken over some of the existing nesting sites once occupied by native birds.

Bird species are extremely variable in their habits. Some like deeply wooded areas; others prefer open fields and meadows. Many species are year-round residents, while others such as the cedar waxwing appear only for a few days a year during migration. Other species such as sparrows, blue jays, cardinals, robins, juncos, and chickadees are highly adaptable and found in many environments.

Many people are not aware of the value of dead, dying, and hollow trees, as well as logs on the ground, for birds and other wildlife. Dead trees provide homes to more than 400 species of birds, mammals, and amphibians. Fish, plants, and fungi also benefit from dead and dying trees. Consider leaving standing dead and dying trees in your yard unless they pose a human safety or property hazard, and use old logs and stumps in gardens and landscapes.

All bird species have specific nesting requirements. For instance, Eastern bluebirds prefer nesting sites that border open fields or lawns with a tree or fence post nearby to provide feeding perches. Chickadees prefer to nest in brushy wooded areas.

Tips to create a bird haven right outside your window:

Remember the basics: food, water, and shelter

Choose native plants that provide fruit, seeds, or nectar (we can give you a starter list of great planting selections)

Create safe cover by making a brush pile

If safe, let dead trees remain standing—they'll provide plentiful nest sites and insect food

Get started by downloading this free set of bird-friendly gardening tips, and have fun!

## **Birds of Amos Lake**

American Black Duck  
American Coot  
American Crow  
American Goldfinch  
American Kestrel  
American Redstart  
American Robin  
American Tree Sparrow  
Bald Eagle  
Baltimore Oriole  
Barn Swallow  
Belted Kingfisher  
Black Vulture  
Black-and-white Warbler  
Black-capped Chickadee  
Blackpoll Warbler  
Blue Jay  
Blue-gray Gnatcatcher  
Blue-winged Warbler  
Brant  
Brown Creeper  
Brown-headed Cowbird  
Field Sparrow  
Fish Crow  
Fox Sparrow  
Golden Eagle  
Golden-crowned Kinglet  
Gray Catbird  
Great Black-backed Gull  
Great Blue Heron  
Great Crested Flycatcher  
Great Cormorant  
Greater Scaup  
Greater White-fronted Goose  
Green Heron  
Green-winged Teal  
Hairy Woodpecker  
Herring Gull  
Hermit Thrush  
Hooded Merganser  
Bufflehead  
Cackling Goose  
Canada Goose  
Carolina Wren  
Cedar Waxwing  
Chipping Sparrow  
Common Goldeneye  
Common Grackle  
Common Merganser  
Common Raven  
Common Yellowthroat  
Cooper's Hawk  
Dark-eyed Junco  
Downy Woodpecker  
Double-crested Cormorant  
Eastern Bluebird  
Eastern Kingbird  
Eastern Phoebe  
Eastern Towhee  
Eastern Wood-Pewee  
European Starling  
  
House Finch  
House Sparrow  
House Wren  
Killdeer  
Mallard  
Mallard (Domestic type)  
Mallard x American Black Duck (hybrid)  
Mourning Dove  
Mute Swans  
Northern Cardinal  
Northern Flicker  
Northern Mockingbird  
Northern Pintail  
Orchard Oriole  
Peregrine Falcon  
Pied-billed Grebe  
Pileated Woodpecker

Pine Grosbeak  
Pine Siskin  
Pine Warbler  
Pink-footed Goose  
Purple Finch  
Purple Martin  
Redhead  
Red-bellied Woodpecker  
Red-breasted Merganser  
Ring-billed Gull  
Red-breasted Nuthatch  
Red-eyed Vireo  
Red-shouldered Hawk  
Red-tailed Hawk  
Red-winged Blackbird  
Ring-necked Duck  
Rose-breasted Grosbeak  
Ruby-crowned Kinglet  
Ruby-throated Hummingbird  
Ruddy Duck

Scarlet Tanager  
Sharp-shinned Hawk  
Song Sparrow  
Snow Goose  
Swamp Sparrow  
Tree Swallow  
Tufted Titmouse  
Turkey Vulture  
Warbling Vireo  
White-breasted Nuthatch  
White-throated Sparrow  
Wild Turkey  
Winter Wren  
Wood Duck  
Wood Thrush  
Yellow Warbler  
Yellow-bellied Sapsucker  
Yellow-billed Cuckoo  
Yellow-throated Vireo

**Birds of prey**, also known as raptors, include species of bird that primarily hunt and feed on vertebrates that are large relative to the hunter. Additionally, they have keen eyesight for detecting food at a distance or during flight, strong feet equipped with talons for grasping or killing prey, and powerful, curved beaks for tearing flesh. This group of birds includes hawks, owls, eagles, vultures, falcons and more. The term raptor is derived from the Latin word *rapio*, meaning to seize or take by force.

As apex predators, birds of prey play an important ecological role in maintaining the environmental health of their natural habitat by removing old, sick and weak animals from prey populations, and keeping prey species and mesopredator populations under control. They are also indicator species, which means that monitoring their population changes gives us insight into environmental threats such as climate change, habitat loss and wildlife trade.

New England is a fantastic habitat for birds of prey – vast forests, moderate temperatures, and distinct seasons make it the ideal home for these raptors. There are twenty-three different birds of prey in Connecticut that fall into 4 main categories 8 species of hawks, 3 falcons, 2 eagles, 9 owls, and the osprey.

## Birds of prey of Amos Lake

Herring Gull

Ring-billed Gull

Peregrine Falcon

Cooper's Hawk

Red-shouldered Hawk

Red-tailed Hawk

Sharp-shinned Hawk

Black Vulture

Turkey Vulture

Wild Turkey

Examples of birds of prey not encompassed by the ornithological definition include storks, herons, gulls, phorusrhacids, skuas, penguins, kookaburras, and shrikes, as well as the many songbirds that are primarily insectivorous.



Photographs Susan Rostenberg

## AMERICAN BALD EAGLE *Haliaeetus leucocephalus*

Wintering eagles come to Connecticut looking for open water in which to feed when the land and waters in Maine and Canada are frozen. If harsh weather in Connecticut causes any open water to freeze over as well, the eagles continue to migrate farther south. Up to 100 eagles winter in Connecticut, from December to early March, along major rivers and at large reservoirs. The number of wintering eagles has been increasing slowly, depending on the severity of each winter. With the increase in nesting and wintering eagles in Connecticut, there is still a challenge to reconcile human recreation and shoreline development, which decrease suitable habitat, with the specific needs of this state threatened species.

Adult bald eagles have a snow-white head and tail, and a brownish-black body. The bill, eyes, and feet are yellow. Immature eagles are uniformly grayish-brown. The distinctive adult plumage is attained at 4 to 5 years of age. Bald eagles are about 34 to 43 inches long, can weigh 8 to 14 pounds, and have a wingspan of 6 to 8 feet. The sexes are similar in appearance, although the females are larger. Bald eagles have a life expectancy of 25 to 30 years, and longer in captivity.



Young bald eagles are often confused with golden eagles; however, they are grayer than the darker golden eagle, and the bill is much heavier.



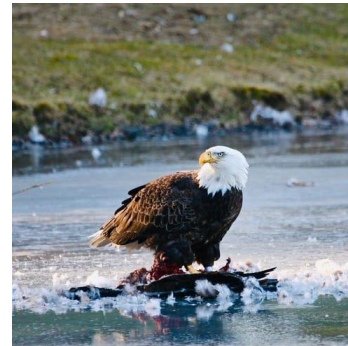
## **Habitat and Diet**

Natural year-round habitat of bald eagles includes lakes, marshes, rivers, or seacoasts, where there are tall trees nearby for nesting and roosting and plenty of fish for eating.

Although bald eagles feed primarily on fish, they also are opportunistic predators and scavengers that will eat anything that can be caught easily or scavenged, such as waterfowl, small and large mammals, and livestock carrion. In addition, they have a reputation of being thieves, robbing other raptors or gulls of their catch.

Eagles kill prey by grasping it with their strong feet and sharp talons. They can carry their prey in flight but are unable to carry much more than 4 pounds. An eagle's beak is used solely for tearing flesh.

Despite their large size, eagles are easily disturbed by unpredictable human activity, making delineated protection zones necessary around areas of high eagle use, particularly nest sites and winter roosts.



Photograph Susan Rostenberg

Disturbance at nest sites may cause the birds to abandon their nest, even if there are eggs or young in the nest. Because winter is a stressful time for eagles, it is important that preferred winter feeding areas be protected. If the birds are frequently disturbed from feeding and forced to travel to a different area for food, their lives may be threatened. Adult eagles are more easily disturbed than juveniles.

## **How You Can Help**

Winter is a difficult time for any wildlife species, including bald eagles. Food is harder to find and cold temperatures cause energy stress. If you see one or more eagles feeding or roosting, leave them alone and observe them from a distance.

It is also important to stay away from nesting areas to avoid disturbing the birds. Several Connecticut bald eagle nests are located on private property where there is no public access. Respect posted areas and do not trespass on private property to view eagles.

The Wildlife Division participates in a midwinter eagle survey in January for the United States Geological Survey; volunteers are always welcome to help in this effort.

*Connecticut Department of Energy & Environmental Protection*

Eagles of Amos Lake

Bald Eagle

Golden Eagle

# OSPREY

## *Pandion haliaetus*

Osprey have white underparts and their narrow wings have a distinctive crook in flight. Their top feathers are dark brown, flecked with white. Their heads are white with a brown streak behind each eye. The adults can weigh



Photograph Susan Rostenberg

between 2 and 4 pounds and their wingspans are generally 4 1/2 to 6 feet.

**Diet:** Ospreys eat fish, almost exclusively. They are also known as fishhawks. They catch fish in their talons and the bottoms of their toes have special spicules which give them a good grip on slippery fish. They often splash into the water after a catch. An osprey can carry a fish weighing up to 4 pounds. The fish are turned to a headfirst position for flight to reduce air resistance.

**Habitat:** In Connecticut osprey arrive from their southern wintering sites in late March. The same pair may breed together for years, and use the same nesting site. They build platforms of sticks, bones, seaweed and debris for nests and will usually add to their existing nest each year. The nests are in tall dead trees or something similar. Osprey will use chimneys, artificial nesting platforms, utility poles or buildings as well.

**Young:** 1 to 3 eggs are laid in April which are incubated by the female with the male providing meals. After about 2 months the eggs hatch and both parents care for the chicks. The baby osprey will stay with the parents for about 2 months. The lifespan of an osprey is about 10 to 25 years in the wild.

In Connecticut, osprey had been diminished to 9 nesting pairs in 1974, but conservation measures have rebounded the population. Nesting osprey are now common and many regularly spend the warm season in the state of Connecticut.

# GREAT BLUE HERON

## *Ardea herodias*

The largest of all herons, these waders can be observed along all of Connecticut's coastlines, rivers, lakes and ponds as well as most of the larger wetland habitats, though usually not in large numbers. Great Blue Herons can be found in all of Connecticut's 169 Towns.

Great blue herons eat mostly fish, but will consume anything in striking distance including amphibians, reptiles, small mammals and other birds. Herons



Photograph Susan Rostenberg

sometimes spear large fish with their 5" long bill and then maneuver it so it can be swallowed whole, head first. Acidic stomach secretions soften the bones. Similar to owls they sometimes "cast", regurgitate, indigestible parts of prey in pellets.

Population decline is still seen in some local areas attributed to elevated mercury and PCB levels in waterways. Since they depend on wetlands and relatively undisturbed sites for breeding they are vulnerable to habitat destruction and human disturbance. Bald eagles and great horned owls are predators of great blue herons.

Great blue herons live in both freshwater and saltwater habitats and generally breed in colonies, heron rookeries, that can consist of 500 or more individual nests. The nest sites are chosen by the males and are highly variable. Usually nests are found in trees 20-60 ft. above ground, but they can be on the ground or 100' up in a tree. Once the male selects a site he displays in the tree to attract a female. After mating the male then collects the sticks and presents them to the female. The female builds the nest that can be anything from a simple 20 inch platform to an elaborate nest measuring 4 ft. across and 3 1/2 ft. deep, lined with pine needles, leaves, moss or grasses. Generally 2-6 pale blue eggs are laid in the nest and incubated by both parents. Incubation lasts about 25-30 days. Egg shells are porous so oxygen gets into the egg through the pores.

Through the process known as "pipping" the chick breaks through the egg with a hard projection on the bill called the egg tooth. The hole is enlarged by the chick to finish hatching. The chicks are fed by both parents. Newly hatched chicks weigh about 1 3/4 ounces, at 1-2 weeks they are about 6 inches, 2-4 weeks at 12 inches, and in 4-6 weeks they are almost 4 feet!

Young are capable of flight at 60 days and depart the nest at 65-90 days. The fledglings may return to the nest for the next 3 weeks. Some birds use the same nest year after year and others build new nests each year. The oldest known great blue heron was 23 years old, but most wild birds' lifespan is much shorter.

Herons of Amos Lake

Great Blue Heron

Green Heron

## Ducks

While all these ducks belong to the *Anatidae* bird family, the family of ducks is so diverse that it is possible to group certain duck species into smaller divisions by how they look and other common characteristics. By understanding the different types of duck groups and related species, identifying ducks can become much easier and birders will learn to better appreciate all ducks.

A drake is a fully sexually mature adult male duck of any duck species, wild or domestic. Males need not have attracted a mate or sired ducklings to be called a drake. The term "drake" refers exclusively to males while the term duck can refer to either gender. The term "hen" refers solely to females. Immature birds of either gender are called ducklings, not drakes or hens.

### Types of ducks seen at Amos Lake

#### Dabbling Duck



#### Mallard Pair Dabbling

"Dabblers" are ducks that tip up in order to feed, rooting through shallow water and mud in search of plants and insects. These ducks will also nibble along the water's surface, and they feed readily on land as well, but they very rarely dive below the water. The most common dabbling duck species is the mallard, but the northern pintail, American wigeon, and different teals are also dabblers.

#### Diving Duck



#### Ring-Necked Duck

Diving ducks are agile swimmers that dive far beneath the surface of the water in search of food, including fish, insects, and aquatic plants. These ducks prefer to stay in the water and can be ungainly and awkward on land, and they have to build up speed to take off from the water's surface. Diving duck species include the scaups, goldeneyes, canvasback, tufted, and redhead.



## Merganser



### Common Merganser

The most prominent features of these small, slim, streamlined ducks are their narrow, serrated, hooked bills. Mergansers are the only types of ducks that regularly eat a large amount of fish and similar prey, and their bills are

specialized to make them keen and ferocious hunters. Species of these ducks include the hooded, common, and red-breasted merganser.

## Perching Duck

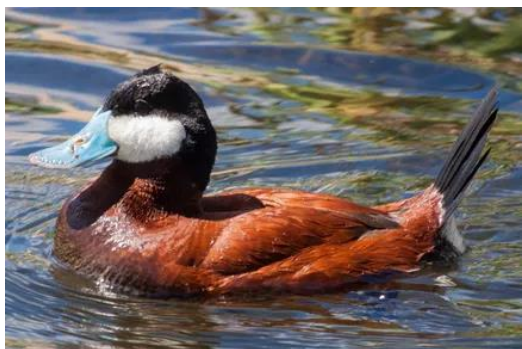


### Wood Duck Perching on a Branch

Perching ducks have prominent talons on their webbed feet to give them better grips to perch. They can regularly be found perching in trees along wooded waterways and other areas with appropriate trees for nesting, and they may nest dozens of

feet above the ground. The Muscovy, pink-eared, wood and mandarin ducks are familiar and popular examples of perching ducks.

## Stifftail



### Ruddy Duck

The stifftails are aptly named diving ducks with spiky stiff tails which they use as agile rudders while swimming. The tail may also be held angled or vertically as a breeding or territorial display, especially between competing males. These ducks often have colorful

bills and compact bodies. Stifftail species include the ruddy duck, masked duck, and blue-billed duck.

## Teal



Blue-Winged Teal - Male

Teals are dabbling ducks that often have brightly colored, distinctive plumage, including fantastic speculum coloration. These ducks prefer to feed along the surface of the water as opposed to tipping up, but they will tip up occasionally. Teals are popular with waterfowl hunters, and they are

carefully managed as game birds. Species include the cinnamon, green-winged, blue-winged, and silver teal.

## Domestic Duck



Domestic Crested Duck

Not a wild species, domestic ducks are instead escapees from farms, gardens, and zoos, and they are often kept as pets. These ducks frequently congregate in mixed flocks on urban and suburban ponds. Their indistinct plumage, wide

range of sizes, and mottled colors show a high degree of hybridization with other domestic and wild ducks. Unfortunately, overbreeding often leads to culling flocks in urban areas.

## Ducks of Amos Lake

American Black Duck  
American Coot  
Bufflehead  
Brant  
Greater Scaup  
Green-winged Teal  
Mallard

Mallard (Domestic type)  
Mallard x American Black Duck (hybrid)  
Redhead  
Ring-necked Duck  
Ruddy Duck

Wood Duck  
Common Merganser  
Hooded Merganser  
Red-breasted Merganser

## **Cormorants**

Adult Double-crested Cormorants are black or dark brown and have an orange-yellow patch of skin at the base of their bills. In breeding plumage, adults have two whitish tufts behind their eyes, hence the description 'double-crested.' First-year birds are pale on the upper breast and darker on the belly. Double-crested Cormorants have slender, hook-tipped bills that are often tipped up at an angle as they swim. They can be distinguished from the other two Washington cormorant species by their thicker bills and by the pronounced kink in their long necks in flight.

### **Habitat**

Double-crested Cormorants are found on both coastal and inland waters. They often perch on rocks, sandbars, or pilings near fishing sites and forage at ponds, lakes, slow-moving rivers, estuaries, and open coastlines. Their breeding colonies are typically located on small rocky or sandy islands, or on the exposed tops of offshore rocks. They may also nest or roost in trees, especially when predators are present.

### **Behavior**

Gregarious throughout the year, Double-crested Cormorants nest in colonies, form dense nocturnal roosts, and travel in flocks during migration. They forage in shallow water within sight of land. They dive from the water's surface to pursue prey underwater, propelled by powerful, webbed feet. After a bout of foraging, they may be seen on exposed perches with their wings spread, drying their feathers. Males attract females by performing a conspicuous 'wing-waving display' that emphasizes their colorful head-tufts and neck.

### **Diet**

Opportunistic feeders, Double-crested Cormorants take a variety of prey species depending on availability. They feed principally on slow-moving or schooling species of fish, and they occasionally consume insects, crustaceans, and amphibians.

### **Nesting**

Unpaired males begin advertising for females shortly after choosing a nest site. The male brings nest material to the female, and the female does most of the building. The nest, a platform of sticks and debris, may be found on a rocky cliff near water, on the ground on an island, or in a tree. As the breeding season progresses, nest materials become

cemented together by droppings. Both parents incubate the 3 to 4 eggs. The altricial young are fed regurgitated food by both parents. After leaving the nest, the young roam the colony in groups called crèches and return to the nest site to be fed. The young are completely independent of their parents at 10 weeks. Second broods are rare.

Cormorants on Amos Lake

Double-crested Cormorant

Great Cormorant

## Geese

Gosling is a specialized term for a young baby goose, typically still covered with soft, fluffy down feathers and unable to fly. Because these chicks are precocial, however, even at a young age they can easily forage on their own and both walk and swim well. Yet despite the amount of independence, they have immediately after hatching, goslings stay in a family flock under the protective eyes of their parents for several weeks or months as they grow and mature.



Photographs Susan Rostenberg

Geese mate in February and March, nest April to May. Gosling mature & forage May to June, Molt mid-June to mid-August. Pond hopping and foraging August through February.

Each Canadian goose produces approx. 3lb of waste per day. An adult goose will drop between 1.5 and 2 pounds of fecal matter daily. Many geese like to congregate where their deposits are either leached into the ground or washed back into the water. Studies worldwide have shown the droppings may carry diseases such as E.coli, salmonella, giardia, and the parasite that cause 'Swimmers' Itch'. They are also high in nitrates which are known to contribute to low oxygen levels in the water, leading to death of fish and aquatic plants and the encroachment of noxious weeds such as milfoil and algae.

The geese prefer wide, open spaces and short grass. To deter geese from your property, leave a barrier strip of tall grass (6" or higher) adjacent to the shoreline. If possible, replace with *Pachysandra*, English



Ivy, Vetch, wildflowers or other ground cover. Erect a small fence 10-12 inches high along their shoreline property. If you don't want a fence, try stringing a wire or length of twine between small posts. The geese seem to avoid crossing the string and move on. Remove nesting materials prior to March.

### Geese on Amos Lake

Cackling Goose  
Greater White-fronted Goose  
Snow Goose

Canada Goose  
Pink-footed Goose

## **Mute Swan**

Huge white bird with long neck, reddish-orange bill, and black face. Adults have a black knob on top of the bill. Immatures are dusky brown with a gray bill. Native to northern Europe and Asia, but introduced in many regions, where it is now common on ponds, lakes, and calm coastal waters. Very aggressive toward native waterfowl. Often seen in pairs or small family groups.

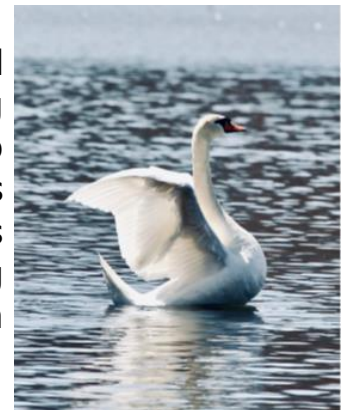


## **Habitat**

A native of Eurasia, the adaptable Mute Swan inhabits fresh- and saltwater ponds, coastal lagoons, and bays. It is often found in close association with people, but occasionally lives in remote areas as well.

## **Behavior**

Mute Swans graze while walking on land, and feed on submergent, aquatic vegetation by reaching under the water with their long necks. They also adapt to feeding by humans. Highly territorial, males will aggressively defend their large territories against their own and other species, including humans, displaying, hissing, and attacking when provoked.



## **Diet**

Mute Swans eat aquatic plant material, grasses, and waste grain. They

also eat insects, snails, and other small aquatic creatures.

## **Nesting**

Mute Swans usually form pairs at the age of two, but do not start breeding until their third or fourth year. The male gathers nesting material, and the female builds a shallow mound on a shoreline. The nest is large, five to six feet in diameter, and made of grasses and reeds with a shallow depression. The female performs most of the incubation of the four to six eggs, although the male will step in and allow the female to take breaks for foraging. Incubation lasts for about 36 days, and both adults tend the young, which sometimes ride on their parents' backs. The young begin to fly at 4 to 5 months but usually remain with the parents through the first winter.

## **Turtles and Tortoises**

These shelled reptilians can be found nearly worldwide.

Turtles and tortoises are easily identified by

their bony or cartilaginous shells. This shell helps protect turtles and tortoises from predators, and is actually developed from their rib bones! Read on to learn about the turtle.



There are over 356 different species of turtles and tortoises. Turtles in particular (as opposed to tortoises) are aquatic reptiles with webbed feet and hard shells. Their jaws are equipped with hard beaks that help them capture and cut apart food. Some species of turtles have eyes and nostrils situated on the tops of their heads, so that they can hide easily in shallow water.

With such a huge variety of species, there are virtually endless fascinating facts about turtles. Some species have traits unique to them in particular, and some adaptations are held by all turtle species.

**Stupendous Shells** – Turtle shells are an amazing evolutionary adaptation. The shell is fused to the ribs and backbone of the turtle, making it impossible for it to leave its shell. The top half of the shell is called a carapace, and the bottom half is called a plastron.

**Personal Protection** – Their unique shells provide these animals with a mobile protection system. When presented with danger, a turtle retracts its head and legs inside its shell. This keeps predators from being able to reach its vital body parts.

**Shell-Less Turtles** – While all turtle species have shells, not all species have hard shells. Some kinds of aquatic turtles have soft, leathery shells instead of hard shells! Leatherback sea turtles and 120ft-shelled turtles are two examples. Turtle for Dinner – Turtles are considered a delicacy in China, and are also used in traditional Chinese medicine. In the United States, nearly 97% of those harvested per year are exported to Asia. Some of these are farm raised, and some are wild caught.

**Turtle vs. Tortoise** – There are a few differences between turtles and tortoises. Tortoises are exclusively land-dwelling animals, and if they are put in deep water they will drown. While tortoises are technically turtles, not all turtles are tortoises. The best way to tell the difference between the two is to look at their feet! Tortoises have elephant-like, unwebbed feet, and turtles have webbed feet for swimming.

### **Habitat of the Turtle**

There are many different species of turtles and tortoises that inhabit a wide variety of habitats. You can find aquatic turtles in the ocean (sea turtles), lakes, rivers, ponds, streams, wetlands, estuaries, and more. Tortoises can be found in rainforests, deserts, coastal dunes, deciduous forests – virtually any non-polar habitat.

### **Distribution of the Turtle**

These fascinating animals are found almost worldwide. Sea turtles can be found in all oceans, except for the north and south poles. Turtles and tortoises can be found in North, South, and Central America, Africa, Australia, and Eurasia. Because they are cold-blooded, colder temperatures restrict their northernmost range.

### **Diet of the Turtle**

Different species eat different types of food. Some are carnivores, and some are herbivores. Carnivorous species eat fish, frogs, snakes, small mammals, and birds. Herbivores will eat a variety of vegetation including grasses, reeds, algae, and roots. Because each species is different, it is important to look them up individually to determine proper dietary needs.

### **Turtle and Human Interaction**

These amphibians are widespread, and frequently interact with humans in a number of different ways. Humans threaten their populations via direct harvesting, as well as having indirect impacts. They are hunted for meat in a

number of different countries, and this meat is frequently exported to Asia for consumption. They are also impacted by deforestation and land development, and struck by cars while attempting to cross roads.

### **Domestication**

Some species of turtles have been domesticated for farming and the pet industry. Some commonly kept species are red-eared sliders, Russian tortoises, spur-thighed tortoises, softshell turtles, and more.

### **Reproduction of the Turtle**

Turtles lay soft, leathery eggs. After mating, the female will dig a nest in sand or mud, and bury the eggs. Some eggs are spherical in shape, while others are more elongated.

The temperature of the eggs while they are incubating determines the sex of the babies. Most eggs will hatch after 70 – 120 days of incubating. All species of turtles are fully independent when they hatch, and no maternal care has been seen in any turtle species.

If you remove turtles, especially snapping turtles from your lake, you can expect to eventually succumb to some unpleasant illnesses or issues such as jock-itch! This is because turtles, but especially snapping turtles, are the creatures in water that can be considered the best at cleaning the water: They remove dead and decaying bodies of fishes, frogs, and other creatures from the lake. They are like turkey-vultures of the lake. Without turtles in your lake, the bacteria levels will increase. In fact, the older larger turtles eat mostly seeds, vegetation and dead matter. It is the younger turtles that require more protein as they grow that consume live fish and may take a duckling. Also, snapping turtles, like all turtles must remain in their territories to survive- moving them can lead to their death. Turtles make a mental map of their territories at a young age, and cannot make new maps as they get older- and they use the earth's magnetics to navigate to north, and the sun for east and west. They are so good at knowing their territories that they will hibernate within 1m of the year before. Moving them, therefore means they will wander lost and may not find hibernation sites, and often the stress will result in them ceasing to eat.

Because turtles prefer dead smelly or fishy meals, you do not smell attractive at all to turtles. They have little interest in biting you, eating you or harming you when they are in the water. We have heard of a few stories of people dangling feet over docks or kicking a turtle when swimming, and have heard of a few cases where turtles may then snap at the person, but snapping turtles, while giving a sharp bite CANNOT BITE OFF A GROWN PERSON'S DIGIT! This is because snapping turtles in Canada do not have enough strength in their jaws to break through bone or even ligaments. Their jaw

strength is not as strong as human's. Alligator snapping turtles in the southern United States grow extremely large and may exert enough pressure to do this, but it is very unlikely that the ones in Canada reach sizes large enough to exert the pressure to break through ligaments and bones. Snapping turtles may bite in water if they associate your dock with food; if you have been fishing off the dock regularly, and then dangle a digit or limb it is possible that the turtle will mistake it for food. However, it is easy to change the turtles habitats; simply swim in the area so the turtle can see the entire human is not food, and of course, stop fishing from that location...at least for a while.

In fact, snapping turtles are actually gentle, shy and somewhat curious creatures when they are in the water. This is because here, they are top predators and can swim very well. Here, they have nothing to fear and they are not vulnerable.

Snapping turtles snap on land because they are the only turtles that do not have a sufficiently large plastron (an under-carriage- and in fact it is very small) and therefore they cannot hide or tuck in like other turtles. Therefore, the only way they can protect themselves while on the land is to snap. However, like other turtles, snapping turtles are actually afraid of humans on land and only snap in defense when they feel threatened...they would prefer to retreat or for you to retreat out of their way.

Snapping turtles are a protected species. Harming a snapping turtle has carried large fine of up to \$25,000. Harming a turtle includes moving a turtle from your lake. Turtles live in territories that they have imprinted in their minds when very young. They cannot replace this "mind map" and moving them may mean that they cannot find feeding grounds, hibernation sites, or mating areas. Moving turtles away from their homes can compromise their ability to survive.

Snapping turtles, like other turtles, live for more than 100 years and in fact there is evidence that they can live more than 400 years. They need to live a long time because it takes more than 60 years on average for a turtle to replace itself- Less than 1% of turtle eggs survive and make it to adulthood. Adult turtles are the most important members of a population because there are fewer natural threats to them. Adults therefore can help sustain populations by recruiting many more offspring in their lifetime. However, because of human fear and predation, pet trades and now more than ever, road traffic, turtle populations are declining rapidly and may never rebound. This means the health of our lakes and our drinking water is also at risk.

Turtles, especially snapping turtles are agents of biodiversity; in addition to cleaning detritus from waters, they spread seeds that grow into plants that support fish nurseries and wetland ecosystems. More than 70% of fish and wildlife in Ontario rely on these areas to survive. Turtles are like the birds of the water. Without them our wetlands and fish nurseries would diminish.

Turtles are sacred creatures. They are as old as the dinosaurs. It is said that turtles were around when God created the world, and they witnessed all of Creation. Turtles are a symbol of Truth. The earth was created on the turtle's back and is referred to as Turtle Island. Each turtle has 13 scutes (triangles) on its shell representing the 13 moons in each year. Each turtle has 28 ridges around its shell, representing the 28 days between moons.

Turtles of Amos Lake

Bog turtle

Musk Turtle

Spotted

Painted turtle

Snapper

Sun turtle



Photograph by Bob Monahan

## Threats

### Habitat Loss and Fragmentation

Anthropogenic is chiefly the pollution or environmental change originating from human activity. Anthropogenic changes like development, dredging, changes in farming practices, wetland draining, and natural changes such as succession reduce not only habitat quantity, but the quality of habitat as well by disrupting the function of remaining habitat patches. Examples of the loss of habitat function include loss of connectivity to patches of similar or complementary habitats increased susceptibility to predation, and reduction in the types of species the patch can support.

Wildlife are under threat from many different kinds of human activities, from directly destroying habitat to spreading invasive species and disease. Most ecosystems are facing multiple threats. Each new threat puts additional stress on already weakened ecosystems and their wildlife.

Fragmentation of habitat may not be large or connected enough to support species that need a large territory where they can find mates and food. The loss and fragmentation of habitats makes it difficult for migratory species to find places to rest and feed along their migration routes.

Humans, human activities, and human trash are common threats to our wildlife.

How can you help.

1. Make sure monofilament fishing line is disposed of properly. Most boat launches and many fishing sites have special containers for waste fishing line. If there is no official container, take old fishing line home and dispose of it in sealed trash.



- a. Remind anglers that waste fishing line should NEVER be tossed overboard or discarded along the shore. It puts wildlife such as great blue herons, turtles and shore birds at risk.
  - b. Plastic 6-pack rings are another common entanglement hazard.
2. Protect nesting sites from human activity.
    - a. Observe nest from a distance using binoculars.

## **Muskrat (*Ondatra zibethicus*)**



Photograph Susan Rostenberg

The muskrat is a medium-sized semiaquatic rodent native to North America and an introduced species in parts of Europe, Asia, and South America. The muskrat is found in wetlands over a wide range of climates and habitats. It has important effects on the ecology of wetlands, and is a resource of food and fur for humans. By eating aquatic plants, they open other areas of the waterways, giving ducks and other birds clear places to swim. Their lodges are also used by other animals as resting areas and nests.

Adult muskrats' weight is 1 1/4 to 4 1/2 lbs. with a body length of 8 - 14 inches. They are covered with short, thick fur of medium to dark brown color. Their long tails are covered with scales rather than hair. They can close their ears to keep water out. Their hind feet are webbed and are their main means of propulsion. Their tail functions as a rudder, controlling the direction they swim in. Muskrats spend most of their time in the water and can swim under water for 12 to 17 minutes.

They live in families, consisting of a male and female pair and they're young. Muskrats, like most rodents, are prolific breeders. Muskrats make their nests on tree stumps sticking out of 15 to 40 inches of water using vegetation. Females have a gestation period from three to four weeks. Baby muskrats are called kits. At 30 days old, kits can swim, dive and feed themselves. Females can have two or three litters a year of six to eight young each. The babies are born small and hairless and weigh only about 1/4 lb.

Muskrats are very social and live in large, territorial families. They communicate with others and mark their territory with a secretion from their glands called musk. The scent serves as a warning to intruders. Muskrats are considered nocturnal, though they are sometimes active during the day. Their most active times are late afternoon and right after dusk. To protect themselves from the cold and from predators, they build nests that are often burrowed into the bank with an underwater entrance. Muskrats feed mostly on cattails and other aquatic vegetation but also eat small animals such as mussels, frogs, crayfish, fish and small turtles. They aren't picky eaters, in fact, they will even resort to cannibalism in their own family. Muskrats eat one-third of their weight every day. Though they need a large supply of food, muskrats usually don't travel any farther than 150 feet away from their homes. Muskrats provide an important food resource for many animals including mink, foxes, coyotes, bobcats, raccoons, eagles, snakes, owls, hawks, snapping turtles, herons bullfrogs and large fish.

In several Native American creation myths, the muskrat dives to the bottom of the primordial sea to bring up the mud from which the earth is created, after other animals have failed in the task.

## **Eastern Spadefoot *Scaphiopus holbrookii***

State Endangered Species





<https://portal.ct.gov/DEEP/Wildlife/Fact-Sheets/Eastern-Spadefoot>

**Background:** The Eastern spadefoot belongs to the genus *Scaphiopus*, which differs from true toads in having vertical pupils, relatively smooth skin, and a distinct spade-like projection on the hind limbs from which its common name is derived. This spade-like projection is used in the excavation of burrows. The Eastern spadefoot is among the rarest amphibians in the northeastern United States. While often referred to as a toad, the Eastern spadefoot is actually a primitive frog. Spadefoots are listed as endangered under Connecticut's Endangered Species Act and designated as a species of greatest conservation need in Connecticut's Wildlife Action Plan. Spadefoots are secretive, spending most of the year in subterranean burrows, emerging at night to feed during warm-weathered rains.

**Range:** The Eastern spadefoot occurs from southern New England, south to Florida along the Atlantic Coastal Plain and as far west as the Mississippi Valley north to Tennessee. New England populations are scattered and typically occur in low elevation river valleys with sandy, well-drained soils.

**Description:** The spadefoot is a medium-sized amphibian, ranging from 1.75 to 3 inches in body length. The skin is smooth and warts are very small and scattered. The spadefoot has large, bright yellow eyes with vertical pupils. The dorsal (back) coloration ranges from brown to gray with two yellowish stripes running down the back and forming a vase-shaped pattern. The venter (belly) is translucent white with a pinkish cast.

**Habitat and Diet:** Spadefoots require dry environments with sandy or loose soils that are sparsely vegetated. These soils are preferred because spadefoots can easily excavate burrows in them. These amphibians breed and reproduce in temporary bodies of water (e.g., vernal pools, flooded fields, etc.). When spadefoots emerge from their burrows they are opportunistic hunters, feeding on a variety of spiders and insects.

**Life History:** Spadefoots spend most of their time in underground burrows, awaiting the warmer rains of late spring, summer, and fall. They can remain dormant for months in a state of torpor. The Eastern spadefoot will dig its burrow several inches below ground but has been known to dig as deep as 8 feet. When heavy rains fall, typically of 2 or more inches, the amphibians emerge from their burrows in large numbers and explosively breed. Eggs are strewn out in irregular bands under water and attached to grass or plant stems. The eggs can hatch in as little as 24 hours with rapidly developing tadpoles that can grow

into land-dwelling amphibians in as little as 14 days. Tadpoles feed opportunistically on vegetation, invertebrates, or other amphibian larvae.

**Interesting Facts:** Because the breeding pools used by spadefoots are ephemeral (short-lived), they do not often support larval development of other Connecticut amphibians. Therefore, spadefoots often breed alone. Spadefoot tadpoles can have cannibalistic tendencies, often eating their own siblings. The breeding call of adult male spadefoots sound like "caw...caw", something similar to that of a young crow. During hibernation, spadefoots curl into a tight ball and excrete a fluid that hardens the soil around them, forming a compact chamber to retain moisture.

**Conservation Concerns:** Spadefoot populations in Connecticut appear to be in decline. Many localized populations have been extirpated, presumably due to urban/suburban developments impacting their breeding pools. Urbanization of early successional habitats and alteration of breeding pools, which are often not afforded wetland protection status due to their highly short-lived nature, are the greatest causes of decline. Some populations in eastern Connecticut remain relatively undisturbed but face threats from both agriculture and sand and gravel extraction. Due to their very secretive lifestyle, it can be difficult to detect the presence of spadefoots and accurately estimate population size. Eastern spadefoots are protected by the Connecticut Endangered Species Act, and collection of these amphibians is prohibited.

**What You Can Do:** If you find an Eastern spadefoot, please take a photograph and report it to the Wildlife Division at [deep.wildlife@ct.gov](mailto:deep.wildlife@ct.gov) or call 860-424-3011. It is best to observe the animal(s) from a distance, and never attempt to capture an individual – it is both harmful to the animal and illegal. Additionally, you may elect to properly manage breeding pool areas if populations occur on your property, after consultation with the CT DEEP Wildlife Division. Often, education and awareness of these endangered amphibians can be a powerful conservation tool.

The production of this Endangered and Threatened Species Fact Sheet Series is made possible by donations to the Endangered Species-Wildlife Income Tax Checkoff Fund.

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## **Fish**

## **Spawning**

Bluegills – that reach three years of age will spawn, probably for the first time. One bluegill will lay 6,000 to 18,000 eggs in a small, shallow crater on a sand or gravel bar. The male makes this “nest” by fanning away bottom material with violent swishes of its body. He will fiercely guard the eggs until the young fish hatch and can swim on their own. To the male, the nest represents the territory (space) it needs for survival of his offspring.

Bass - Female lays between 2,000 and 7,000 eggs per pound of body weight. The male guards the nest, fanning the eggs with his tail to keep off silt and debris. He will attack anything that swims near the nest. They don't leave their children unattended such as walleyes and northern pikes.

Brown Trout – Brown Trout spawn during the fall season between October and December. Using their tails, the females clear a spot in the gravel bottom for their eggs. An average three-year-old female releases from 500 to 1,000 eggs. Fertilized eggs settle into the spaces around the gravel. They are heartier than other types of trout and can handle poorer water quality. Prior to spawning, Brown Trout will become extremely aggressive.

## **Hatching**

Bluegill - takes only two to five days under normal weather conditions. However, unseasonably cold water temperatures may stop spawning activity entirely. Once hatched, the tiny “fry” are only one-eighth inches (2-3 mm) long. Only the earliest and fastest swimmers escape being eaten by other fish, including other bluegills.

Bass – The young also called fry, hatch in five to ten days. Fry remain in a group near the nest and under the male's watch for several days after hatching.

Trout – The young are called Alevins. The eggs will hatch between 3 and 5 months depending on the water's temperature.

Lakes and rivers with abundant rooted vegetation provide hiding places for these tiny fish. When homeowners remove vegetation to create swimming areas fry become easy prey.

## **Diet**

Bluegill – Rapid growth in the first year keeps these small fish constantly looking for food. First zooplankton then, tiny crustaceans make up the fry's

diet. By the end of their first year the bluegill is almost two inches long. As the bluegill grows, its main diet changes to small crayfish, aquatic insects and small fish. Bluegills cruise from cover to cover searching for food, preferred water temperatures and adequate oxygen, exposing them to additional predation from herons and otters. By the end of their second year, most bluegills are about 3.25 inches long.

Bass – Fry feed primarily on zooplankton and insect larvae. At about two inches in length they become active predators. Adults feed almost exclusively on other fish and large invertebrates such as crayfish. Larger fish prey upon smaller bass.

Trout – Juvenile brown trout primarily feed on zooplankton, aquatic and terrestrial insects, and larvae, while adult brown trout predominantly feed on other fish and crustaceans. Both egg and fry cannibalism are relatively common in this species and can be a considerable cause of small-fish mortality.

## **Habitat**

Bluegills – In the spring, bluegills are found along permanent cover such as rocks, logs and piers. By summer these fish have moved into recently emerged aquatic vegetation beds. Sometimes low water conditions may isolate bluegills from the main body of water. In the heat of summer, oxygen levels may drop drastically in these areas and fish will suffocate and die, a condition known as summerkill.

The fish that make it through summer may face problems in winter. In winter, bluegills seek habitats with good oxygen, abundant food and little current. Excessive snow and thick ice reduce the amount of sunlight penetrating shallow water areas. Photosynthesis (which produces oxygen) stops and the plants die. As oxygen levels drop, decomposition of bottom material continues further reducing dissolved oxygen. If levels drop enough most of the fish will suffocate, a condition known as winterkill.

Largemouth bass – seek protective cover such as logs, rock ledges, vegetation, and man-made structures. They prefer clear quiet water, but will survive quite well in a variety of habitats.

Trout – The brown trout's preferred habitats are streams, lakes or brooks. The brown trout has an olive or brown colored body and dark brown or red spots. The tail is square with few or no spots on it. The ideal temperature for the brown trout is 56°F and 66°F.

## **Predators**

Bluegills - At four years of age most bluegills will be 5.5 inches long – too large to be eaten by most other predator fish, but large enough for predation by humans.

Bass – Except for humans, adult largemouth bass are the top predators in the aquatic ecosystem.

Trout – like the bass are the top predators.

The bluegill itself is an important link in the food chain of other fish species and the loss of a bluegill could result in lower numbers of northern pike, largemouth bass, or perch to name a few.

Because fish attending nests are easy to catch, excessive harvest by anglers can occur. This not only removes the adults from the population, but it also leaves the now unprotected nest open to predation. Egg mortality can be 100 percent.

Essential fish habitat includes all types of aquatic habitat where fish spawn, breed, feed, or grow to maturity. You can search for the habitat of a specific species using our EFH Mapper tool.

<https://www.fisheries.noaa.gov/insight/understanding-essential-fish-habitat>

## **Fish of Amos Lake**

### **GAMEFISH**

Largemouth bass	Brown trout (Stocked)
Rainbow trout	Chain pickerel

### **LARGER PANFISH**

Yellow perch	Brown bullhead
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### **SUNFISH**

Bluegill	Pumpkinseed
Redbreast sunfish –	

### **NON-GAME SPECIES**

Golden shiner	Banded killifish
Alewife (stocked)	Creek chubsucker
American eel	

**Coming Soon**

Crayfish



## Resource Page

Wildlife Habitat - Home | NRCS

[Osprey \(wildlifeofct.com\)](http://wildlifeofct.com)

<https://wildlifeinformer.com>

<https://www.ifaw.org/animals/birds-of-prey>

<https://www.thespruce.com/>

<http://species.birdweb.org/>

<https://www.turtleguardians.com/snapping-turtles-and-your-lake/>

<https://portal.ct.gov/DEEP/Fishing/Freshwater/Freshwater-Fishes-of-Connecticut/table-of-contents>

<https://portal.ct.gov/DEEP/Wildlife/Fact-Sheets/Eastern-Spadefoot>

<https://dnr.wi.gov/>

<https://tpwd.texas.gov>

*Meigs Point Nature Center Hammonasset Beach State Park Diane  
Chisnall-Joy*