

U.S. Fish & Wildlife Service

Missisquoi

*National Wildlife
Refuge*

Mammals



Missisquoi is one of over 500 refuges in the National Wildlife Refuge System administered by the U.S. Fish and Wildlife Service. The National Wildlife Refuge System is a network of lands and waters managed specifically for the protection of wildlife and wildlife habitat and represents the most comprehensive wildlife management program in the world. Units of the system stretch across the United States from northern Alaska to the Florida Keys and include small islands in the Caribbean and South Pacific. The character of the refuges is as diverse as the nation itself.

The Service also manages national fish hatcheries, and provides federal leadership in habitat protection, technical assistance, and the conservation and protection of migratory birds, certain marine mammals and threatened and endangered species.

Introduction

Missisquoi National Wildlife Refuge is approximately 50 miles north of Burlington in Franklin County, Vermont. It is located on the eastern shore of Lake Champlain near the Canadian border with the headquarters on Highway 78, two miles northwest of Swanton.

The 6,517-acre refuge encompasses nearly all of the Missisquoi River delta. About one-third of the area is swamp dominated by silver maple. The woodlands also contain red maple, American elm, white ash, and white oak. Bulrush, wild rice, sedge, spikerush, burreed, and pickerelweed are the most common marsh plants, but many shrubs, such as willow, alder, sweet gale, hardhack, and buttonbush grow where the water is shallowest.

Although the refuge was established primarily for waterfowl, many species of mammals are present. Among the most readily observed are white-tailed deer, muskrat, raccoon, and red and gray squirrels. Some, because of their size or habits, are less likely to be seen.

The following list of 35 mammals has been prepared by refuge personnel from observations made over the years. The hypothetical listing of bats based on reported range was submitted by Dr. Robert Fuller, University of Vermont.

Shorttail Shrew

*(Blarina
brevicauda)*

Common over most of the refuge. Digs tunnels and uses burrows of other species, especially voles. Feeds mainly on insects, plants, worms, snails, and small vertebrates.



Starnose Mole

*(Condylura
cristata)*

Found throughout the area in damp meadows and woods with moist soils. An excellent swimmer, its diet consists of aquatic insects, earthworms, crustaceans, snails, small fish, and small amounts of vegetable material. Its eyesight is poor and the projections on its nose are sensitive feelers, helping it locate its prey.

Bats

This list is based on reported ranges. The following probably occur on Missisquoi National Wildlife Refuge.

Little Brown Myotis

(Myotis lucifugus)

Big Brown Bat

(Eptesicus fuscus)

Keen's Myotis

(Myotis keenii)

Small-footed Myotis

(Myotis leibii)

Silver-haired Bat

(Lasionycteris noctivagans)

Red Bat

(Lasiurus borealis)

Hoary Bat

(Lasiurus cinereus)

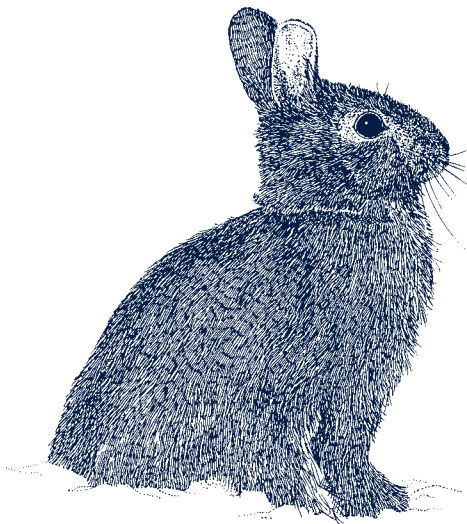
Eastern Pipistrelle

(Pipistrellus subflavus)

Eastern Cottontail

*(Sylvilagus
floridanus)*

Present in small numbers in brushy areas, old fields, woods, cultivated areas, thickets, and brush piles. During cold weather will take shelter in abandoned woodchuck burrows. Feeds on green vegetation in summer, bark and twigs in winter.

**Snowshoe Hare**

*(Lepus
americanus)*

Present in small numbers in brush and second growth hardwood stands on the mainland portion of the refuge. Feeds mainly at twilight and evening; in summer on clover, grasses and ferns; in winter on twigs, buds, and the bark of small trees and seedlings. Young are born with dense fur and open eyes.

Eastern Chipmunk

(Tamias striatus)

Present in small numbers in the drier woodlands that have dense undergrowth. Feeds on seeds, nuts, fruits, bulbs, and insects.

Gray Squirrel

*(Sciurus
carolinensis)*

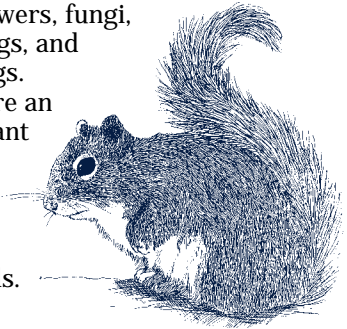
In small numbers where there is mast-producing timber. Tall trees are used for dens or leaf nests. Their diet consists of nuts, buds, seeds, grains, fungi, fruits, bird eggs, and inner bark of trees.

Red Squirrel

*(Tamiasciurus
hudsonicus)*

Found throughout most wooded areas but not common. Prefers to nest in natural cavity or abandoned woodpecker hole. They may

construct globular leaf nests near treetops or use ground burrows. They prefer a conifer woodland because their diet is partially made up of seeds of conifer cones. They also eat nuts, buds, fruits, sap, flowers, fungi, bird eggs, and nestlings. They are an important food source for hawks and owls.



Northern Flying Squirrel

(Glaucomys sabrinus)

Present throughout wooded portions. Favors cool, heavily wooded conifer and deciduous forests. Summer nest may be on a limb next to a tree trunk and winter nest is in a cavity. They often use old woodpecker holes. They eat nuts, seeds, catkins, fruits, buds, insects, mushrooms, bird eggs, and nestlings.

Woodchuck

(Marmota monax)

Very common in and around open fields and agricultural lands. Digs extensive systems of burrows including hibernation and nest chambers. Prefers green vegetation such as herbs and grasses.

Beaver

(Castor canadensis)

Common along streams bordering and coursing through the refuge. Beaver are most often observed during evening hours along the Missisquoi River, Dead Creek, and the Black and Maquam Creek Trail. Beaver build dams to flood areas where they feed and construct lodges. The water areas created by beaver dams benefit waterfowl, marsh birds, and other mammals. The den is enclosed in a large lodge made of mud and sticks and is used for raising young and providing winter shelter. Burrows dug in banks are also used as dens. The beaver consumes bark of deciduous trees

and is particularly fond of swamp white oak and birch. Food is stored under the ice for winter use.

White-footed Mouse

(Peromyscus leucopus)

Common over much of the refuge. They feed on seeds, acorns, nuts, fruits, tender green plants, insects, and small amounts of carrion.

Meadow Vole

(Microtus pennsylvanicus)

Very common in the meadows and fields. Diet consists of grasses, bulbs, seeds, grains, and small amounts of carrion. Nests in sheltered areas under rocks and logs and builds extensive tunnel systems. Females are very prolific, capable of producing a hundred young within a year. They are an important food source for birds of prey and small carnivorous mammals.

Muskrat

(Ondatra zibethicus)

Seen frequently in all water areas. The muskrat uses cattails, burreed, arrowhead, wild rice, cutgrass, bulrushes, pondweeds, water lilies, and other marsh plants for food and houses, creating openings in the dense marsh vegetation. The openings provide habitat for waterfowl. Ducks and geese use the muskrat houses for nesting sites. Muskrats are mainly nocturnal, but may be seen in daylight. They are active throughout the year.

Norway Rat

(Rattus norvegicus)

Present mainly along the Missisquoi River, but occasionally found in marshes. They are omnivorous and will consume fruits, grains, vegetables, carrion and fresh meats, and garbage.

Porcupine

(Erethizon dorsatum)

The few porcupines present are confined to an area in the West Swanton section of the refuge where there are small, scattered hemlock stands. Den sites are in protected places such as rock ledges, trees, and abandoned fox or beaver dens. They eat herbaceous and woody vegetation, grasses, leaves, twigs, mast and bark.

Coyote

(Canis latrans)

A few present but seldom seen. Have been seen along Tabor Road. Den is usually an excavated burrow, well hidden by vegetation or rock. They are omnivorous and will consume carrion, small mammals, and vegetation.

**Red Fox**

(Vulpes vulpes)

Not numerous but may be seen occasionally over most of the refuge except where limited by water. Prefers to use existing burrows for rearing young and escaping from predators, but will dig dens. Preys mainly on small mammals and birds, insects, carrion, and fruits.



Raccoon

(Procyon lotor)

Common throughout the refuge. Dens are usually located in trees but culverts, abandoned woodchuck burrows, and other protected areas are also used. They are omnivorous and will consume fruits, insects, crayfish, buds, seeds, grass, and garbage. Primarily nocturnal but may be seen in daylight.

Fisher

(Martes pennanti)

An occasional visitor. Dens in hollow trees, logs, or abandoned porcupine dens. Fishers are one of the few predators that prey on porcupines. Shrews, mice, squirrels, toads, berries, nuts, and carrion are also included in their diet.

Shorttail Weasel

(Mustela erminea)

Present in small numbers in wooded areas. Eats mice, chipmunks, moles, shrews, and occasionally birds and insects. Molts to white in winter.

Longtail Weasel

(Mustela frenata)

Present in small numbers in drier sections. Dens in natural holes or crevices or excavated burrows. Feeds primarily on small mammals, ground nesting birds and insects.

Mink

(Mustela vison)

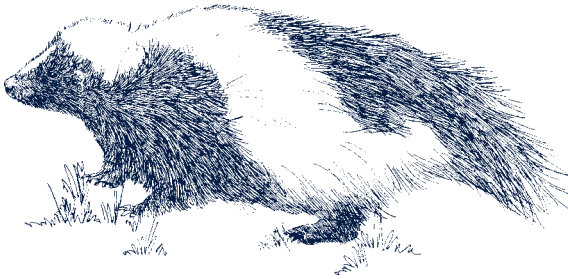
Present but not numerous. Favors forested wetlands. Dens inside hollow logs, natural cavities under tree roots or in burrows along streams. They are excellent swimmers and prey on both aquatic and terrestrial animals, including muskrats, fish, rabbits, and snakes.



Striped Skunk

(*Mephitis mephitis*)

Occasionally seen on drier areas of the refuge. Dens may be in abandoned burrows, stone walls, rock crevices, and stumps. The diet of the skunk includes small rodents, bird eggs, fruits, grains, nuts, grasses, berries, insects, garbage and carrion.

**River Otter**

(*Lutra canadensis*)

Frequently seen in the Missisquoi River, Maquam Creek, and Charcoal Creek. Den may be in an abandoned beaver lodge or muskrat house, dense thickets bordering water, or under fallen trees. Diet consists of fish, frogs, turtles, snakes, and birds.

Bobcat

(*Lynx rufus*)

An occasional visitor. Prefers to den in rock crevices, under fallen trees, or in hollow logs. Most prey is taken by stalking. Diet consists of small mammals such as snowshoe hares, cottontails, squirrels, mice, voles, birds and their eggs, snakes, fish, insects, and some vegetation. Will also eat dead animals if the meat is fresh.

White-tailed Deer

Odocoileus virginianus

Frequently seen over entire refuge. Preferred habitat is forest edges, swamp borders, areas interspersed with fields, and woodland openings. Deer browse on woody deciduous plants, twigs, and young bark. They graze on grasses, herbs, berries, and mushrooms.

**Moose**

Alces alces

A rare visitor. Moose are found in forests with lakes and swamps. They feed primarily on aquatic vegetation in summer and browse on many woody plants in winter, including twigs, barks and saplings. Since 1994, moose have been seen with increased frequency on the refuge.



Missisquoi National Wildlife Refuge
P.O. Box 163
Swanton, Vermont 05488
Telephone: 802/868 4781
Fax: 802/868 2379
Email: r5rw_msqnwr@mail.fws.gov

Hearing impaired visitors may call the
Vermont Relay Service at 1 800/253 0191 or
TDD/800 253 0195

U.S. Fish & Wildlife Service
1 800/344 WILD
<http://www.fws.gov/>

July 1999



printed on recycled paper with vegetable based inks

cover photo: George Gentry