

Species Focus of conservation concern

Least bittern

Least bitterns are rare in New Hampshire, with sightings concentrated in the southern part of the state. These shy birds use marshes dominated by cattails and scattered shrubs, where they feed on fish, amphibians, snakes and insects. Purple loosestrife, an invasive plant that can dominate cattail marshes and is difficult to eliminate, threatens their marsh habitats. Pollution and sedimentation caused by nearby development can also degrade marsh habitats. Least bitterns appear to tolerate urbanized areas as long as their wetlands remain relatively undisturbed.



Least bittern

Blanding's turtle

The Blanding's turtle, an endangered species in New Hampshire, requires large blocks of connected wetland and upland habitat with little development. They spend most of their time in marsh and shrub wetlands, but during breeding or nesting, they will travel up to 1/2 mile and may come into contact with vehicles, pets and upland habitats degraded by development. Individuals can live to be more than 70 years old, but they don't begin to reproduce until they are 15-20 years old. Females lay only a few eggs in late May to early July. This low fertility means that a few adult deaths can have a catastrophic effect on the regional population of Blanding's turtles. Roads have the deadliest impact, as Blanding's turtles are easily killed by vehicles as they try to cross roads in search of nesting sites or mates.



Blanding's turtle

Osprey

Ospreys are fish-eating birds who forage and breed along our large rivers, estuaries and lakes. These large birds also require marsh habitat, where beaver flooding creates standing dead trees (snags) for nesting, and shallow waters for easier access to fish. They will build nests in heron rookeries within beaver flowages; biologists have also had success building artificial nesting platforms on utility poles that cross wetlands, attracting nesting osprey to previously unoccupied areas. Where osprey nests are present, reduce or eliminate all recreational activity within 330 feet of nest sites to prevent disrupting the osprey's breeding.



Osprey

Spotted turtles

The spotted turtle, a threatened species in New Hampshire, has many of the same habitat requirements and life-cycle characteristics as the Blanding's turtle, and both species are found in similar shallow-water habitats in southern New Hampshire. The spotted turtle is declining throughout its range and faces similar threats from habitat loss and road crossings as Blanding's turtles.



Spotted turtle

Wildlife found in marsh and shrub wetlands

Many wildlife species use marsh and shrub wetlands for some aspect of their life cycle, whether for breeding, feeding, cover or nesting. Below are some examples of species that depend on marsh and shrub wetland habitats. Be on the lookout for these species and other wildlife associated with marsh and shrub wetlands. Follow stewardship guidelines to help maintain or enhance marsh and shrub wetlands. Species of conservation concern--those wildlife species identified in the Wildlife Action Plan as having the greatest need of conservation--appear in **bold** typeface.

- **American black duck**
- American bittern
- **American woodcock**
- **Blanding's turtle****
- **Common gallinule**
- **Eastern red bat**
- Great blue heron
- Green darner dragonfly
- Least bittern
- Mink
- Muskrat
- **New England cottontail****
- **Northern harrier****
- **Northern leopard frog**
- Osprey
- **Pied-billed grebe***
- Red-winged blackbird
- **Ringed boghaunter dragonfly***
- **Rusty blackbird**
- **Sedge wren**
- **Silver-haired bat**
- **Spotted turtle***
- Spring peeper
- Virginia rail
- Water Strider
- Whirligig beetle

* state-threatened species

** state-endangered species

Where to get help

If you have information about a wildlife species of conservation concern, contact NH Fish & Game's Wildlife Division at 603-271-2461. Contact the UNH Cooperative Extension Wildlife Specialist at 603-862-3594 for technical assistance for landowners or your community.

Technical assistance and publications on forestry and wildlife topics are available through the UNH Extension Educators in Forest Resources in each county. Contact information for each UNH Cooperative Extension office, additional publications, resources, and web versions of all brochures in the Habitat Stewardship Series are available on the UNH Cooperative Extension website at: nhwoods.org.

The **Taking Action for Wildlife Team**, made up of staff from NH Fish and Game and UNH Cooperative Extension, works to help communities, land trusts, private landowners and others conserve wildlife and habitats in New Hampshire. We help put information from NH's Wildlife Action Plan in the hands of NH citizens. Visit takingactionforwildlife.org for help creating natural resources inventories, conservation planning, managing habitat, and more.

Authorship

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About the Habitat Stewardship Series

Much of the land in New Hampshire is privately owned. These individuals are the primary stewards of our wildlife and forests, and also our clean water, scenic views, fresh air, natural and cultural heritage, and recreational resources. The Habitat Stewardship Series has been created to help landowners and land managers recognize the habitats critical for wildlife species at risk, and to illustrate the role private landowners can play in sustaining those species through conservation, management, and sound land stewardship.

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Marsh and Shrub Wetlands

Habitat Stewardship Series

NEW HAMPSHIRE WILDLIFE ACTION PLAN

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Extension



Recognizing marsh and shrub wetlands

Marsh and shrub wetlands encompass a variety of wetland types, each with different vegetation, but with one thing in common: the soils in them are wet most of the year. The cycle of a beaver flowage, from ponded water (marsh) to abandoned/drained area (wet meadow), and re-growth (shrub wetland), can contain all types of marsh and shrub wetlands over time. These wetlands fit into three groups, identified by their vegetation:



Wet meadow habitat

- **Wet meadows** are filled with sedges and grasses. Wet meadows may not be flooded all year, but they are wet for long periods during spring and summer. They provide a rich habitat for such critical species as ribbon snake, spotted turtle and northern harrier.



Marsh habitat

- **Marshes** contain plants that grow out of water, but whose roots are wet, such as cattails, pickerelweed, and water lilies. Blanding's turtles, American black duck and red-winged blackbirds rely on marsh habitat for their feeding and lifecycles.
- **Shrub wetlands** are thickets of shrubs and young trees growing out of wet soils, and they often flood in the spring. Spotted turtles, Canada warblers, New England cottontail, and American woodcock all use shrub wetlands for food, cover, or breeding habitat.



Shrub wetland habitat

Why are marsh and shrub wetlands important?

Marsh and shrub wetlands are rich habitats that provide a number of critical ecosystem functions such as flood control, pollutant filtration, erosion control, and wildlife habitat. Marshes are important for fish and amphibian breeding and for waterfowl, and they connect people to habitat through hunting, fishing, tourism, and recreation. Shrub wetlands may seem inhospitable to people, but their dense thickets provide reliable cover from predators for many wildlife species.

Where are marsh and shrub wetlands?

High-quality marsh and shrub wetlands are found in all parts of the state, with higher concentrations in Rockingham and Belknap Counties. Lake Umbagog, Great Bay, and the Connecticut River Valley have been identified as particularly important areas for waterfowl habitat, due to their extensive high-quality marsh and shrub wetlands. High-quality wetlands are typically defined as being:

- at least 1000 feet from houses, roads or recreational trails
- surrounded by intact vegetation
- in remote areas where beaver dams don't affect humans

Threats from development

Historically, New Hampshire has lost fewer wetlands to development than many other states. However, we also have little direct protection for these important parts of our ecosystem. As southern New Hampshire faces increasing development pressure, wetlands and their surrounding uplands are at risk. Construction setbacks aren't always required around wetlands in New Hampshire (except septic systems) and marsh and shrub wetlands are routinely filled and damaged by driveway and road crossings. Loss of upland habitat, pollution, salt runoff from roads, and destruction of beaver dams (because of their proximity to backyards) all have a detrimental effect on our marsh and shrub wetland communities.

Threats from invasive plants

Invasive plants such as purple loosestrife, common reed (*Phragmites*), and Japanese knotweed threaten the diversity of plants in marshes, and several woody plants such as glossy buckthorn are a problem in shrub wetlands. Invasive plants take over native vegetation and offer less-valuable habitat and food sources for many species of wildlife.



Purple loosestrife

Stewardship Guidelines for marsh and shrub wetlands

- For land conservation efforts to successfully protect wetlands wildlife, uplands surrounding wetlands need to be protected as well. A 300 foot buffer of upland, unimpacted by development (no paved roads, buildings, etc.) protects water resources and habitat for many species. However, to truly isolate the wetland from negative development impacts, this buffer may have to extend 1000 feet or more from the wetland edge.
- Regenerate and promote growth of aspen and other hardwoods in small patches or strips along slow streams and rivers to enhance the food supply for beavers. Mallards and black ducks will benefit, as they nest on open ground around waterbodies.
- New Hampshire Fish and Game tracks sightings of rare reptiles and amphibians. Report any sightings to the NH Reptile and Amphibian Reporting Program online at wildlife.state.nh.us.
- Maintain habitat structures such as dead standing trees and overhanging vegetation in the water to provide cover for wildlife; keep downed logs as basking sites for turtles.
- Leave and protect standing dead trees as habitat for heron and osprey nesting, as roosting sites for bats, and as cavity nesting sites for a variety of other birds and mammals.
- Focus wetland restoration efforts on restoring flooding to marshes. Bogs and forested wetlands (such as red-maple swamps) aren't easily re-created after damage to their vegetation or after changes in their flooding patterns.
- Don't use heavy machinery within wetland soils to avoid negative impacts on animals or disruption of the wetland's flooding pattern.
- Where feasible, maintain open, sunny areas with little vegetation (or sandy areas) adjacent to or near marshes for turtle nesting.
- Maintain brush and other woody debris in and around wetlands to provide cover for small mammals, amphibians, and reptiles.
- Limit recreational access (either completely or with as few access points as possible), as even low levels of human disturbance can disrupt marsh wildlife. Where access is allowed, avoid trampling existing aquatic vegetation. ATVs shouldn't be allowed in or around wetlands.
- Where human-built dams are present, avoid drawing down water levels in fall and winter, as this exposes dispersing and hibernating amphibians and reptiles to colder temperatures.
- Focus land conservation around beaver flowages across the landscape, not just around present-day beaver impoundments. Doing so allows the natural abandonment and establishment of new dams. Conserving only the present-day impoundments while allowing development and road-building near abandoned dams forever precludes the natural succession of those abandoned beaver ponds—from newly flooded sites, to stagnant ponds, to open meadows, and back to reforested landscapes.
- Maintain beaver dams and flowages and use beaver dam water control devices to maintain a consistent water level (important for protecting property or roads).
- Locate new roads and development where they are unlikely to be flooded by potential beaver dam sites.



A beaver dam