Species Focus
of conservation concern

New England cottontail

An endangered species in New Hampshire, New England cottontail rabbits prefer dense thickets such as overgrown fields and forests less than fifteen years old. These rabbits only occur in New Hampshire in the lower Merrimack River Valley and in the Seacoast. They feed on grasses and leaves of wildflowers in the summer, and bark and twigs of shrubs and trees in the winter. Populations of these rabbits have suffered from habitat loss and the introduction of eastern cottontail rabbits, which were first released in the early 1900s. Eastern cottontails are now common, being better adapted to developed landscapes. For more information about New England cottontail conservation, consult the publication "New England Cottontail Rabbits in New Hampshire," available from UNH Cooperative Extension.


New England cottontail

Black racer

The black racer snake, a threatened species in New Hampshire, depends on large areas of habitat (25+ acres) made up of shrublands, wetlands, fields, and dry forests. They prey on small mammals, amphibians, birds and eggs, and other snakes. Black racers are susceptible to dehydration, so pockets of wet shrubland may be particularly important to these snakes. Black racers are not well-documented in New Hampshire, but look for them in shrubland habitats in the southern half of the state, including Belknap, Carroll, Cheshire, Hillsborough, Merrimack, Rockingham, and Strafford counties.


Black racer

Eastern towhee

Although still a relatively common bird in New Hampshire, eastern towhees have declined by as much as 9% per year over the past 50 years, due to the loss of shrubland habitat throughout their range. Found south of the White Mountains, eastern towhees feed on seeds and insects in the leaf litter on the forest floor. Look for towhees in dense, shrubby habitats and dry forests such as in pine barrens, old fields, re-growing clearcuts, and powerline corridors.


Eastern towhee

Wildlife found in shrubland habitats

Many wildlife species use shrublands, including those listed below. Be on the lookout for these species, and follow stewardship guidelines to help maintain and enhance these habitats. 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 bittern
- **American bumble bee**
- American toad
- **American woodcock**
- Black bear
- **Black racer***
- Bobcat
- **Canada lynx*****
- Common yellowthroat
- **Eastern box turtle**
- **Eastern hognose snake****
- **Eastern towhee**
- **Golden-winged warbler**
- Gray catbird
- **Moose**
- **New England cottontail****
- **Northern harrier****
- **Purple finch**
- Red fox
- **Ruffed grouse**
- **Smooth green snake**
- **Timber rattlesnake****
- **Whip-poor-will**
- White-tailed deer
- **Wood turtle**

* state-threatened species
** state-endangered species
*** state-endangered , federally threatened

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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Shrublands

Habitat Stewardship Series

NEW HAMPSHIRE WILDLIFE ACTION PLAN

Recognizing

shrubland habitat

Shrubland habitats contain thickets of shrubs and young trees mixed with scattered grasses and wildflowers. Large shrublands—those greater than five acres—are relatively rare in New Hampshire. Typical plants include dogwood, alder, *Viburnum*, pincherry, and many other species.


Shrubland habitat

Shrubland habitats are almost always temporary, existing on the land for a relatively short period of time. New Hampshire's climate and soils are especially suitable for growing trees. If an open field is left alone, unmowed, for just a few years, shrubs and young trees will start to grow. As the trees grow, they shade out grasses, wildflowers and shrubs. Within twenty-five to thirty years, the area that was once a field will become a young forest. This process of vegetation change over time is called **succession**. Old fields, shrublands, and young forests, often called **early-successional** habitats, are becoming increasingly uncommon in our state.


Powerline corridor

Most large shrublands in New Hampshire are found on old fields and pastures, powerline corridors, gravel pits, and in recent clearcuts. These shrublands exist as a result of human activities—through mowing, tree cutting, or abandonment of agricultural fields. **Naturally-occurring shrublands** also exist on the landscape. Abandoned beaver ponds grow into shrublands that may last for twenty or more years after the beavers are gone and the water has drained from the pond. Other natural shrublands include wet shrub swamps, patches of juniper, and very dry oak barrens, which, under natural conditions, are kept shrubby by periodic fires. These natural shrublands may remain open for thirty or more years, but in the absence of additional natural disturbance, these too will revert to forest.

Where are shrublands found?

Shrublands exist in patches throughout the state, but most are difficult to recognize on traditional satellite imagery, so their total expanse in the state is unknown. Communities that map the location of shrublands as part of a natural resource inventory are encouraged to send their data to New Hampshire Fish & Game to contribute to statewide habitat data.


Wet shrub swamp

Why are shrublands important?

Impenetrable and dense, shrublands are often ignored and undervalued by people. For some species of wildlife, such as New England cottontail rabbits, American woodcock, and ruffed grouse, shrublands provide the best possible cover. The shrubs and young trees growing in these areas also provide an abundance of berries and fruit, eaten by many different birds and mammals.

Decline in shrubland habitat

Over the past 100 years, there has been a dramatic decrease in the amount of shrubland in New Hampshire. Land-use change, human development, fewer large beaver impoundments, and fire suppression have led to a decline in many wildlife species that depend on shrublands. Twenty-two of our forty shrubland bird species show population declines. Shrub-dependent New England cottontails occur in less than 25% of their historic range, and are now listed as an endangered species in New Hampshire.

Succession of farmland

The late 1800s and early 1900s saw a widespread abandonment of farmlands in New Hampshire. As fields went unmowed, shrubland habitats grew in their place, becoming common across the state. During this time, wildlife that depend on shrublands also increased. American woodcock, golden-winged warbler, eastern towhee and brown thrasher all thrived in the abundance of dense shrubby cover. By the latter part of the 20th century, most of these abandoned fields had reverted to the forests we see today, and the wildlife associated with shrublands also declined dramatically.

Threats from development

Human development poses a severe risk to shrubland habitats, because the alterations caused by buildings and roads are irreversible. Development also fragments existing shrubland communities, limiting the types of wildlife that can use these smaller habitat patches. Research has shown that some species, such as New England cottontail, cannot survive in shrublands that are near development or along powerlines because of the increased predation from hawks, owls, foxes, and coyotes. New England cottontails need large areas of thickets (more than 5 acres), and will do best in areas away from dense human settlement.

Maintenance costs

In today's landscape, small areas of shrublands may be created naturally—for example, by beaver dam abandonment or small fires. However, most wildlife biologists agree that to sustain wildlife species that depend on shrublands, additional management to create shrubland habitat is needed. Maintaining large areas of existing shrubland may cost money and provide little economic return to landowners. Many federal and state cost-share programs address this problem by providing financial assistance to landowners to create or maintain early successional habitats and shrublands (contact UNH Cooperative Extension for more information about these programs). Another management option is to create early-successional habitat as part of planned timber management, creating temporary openings paid for by timber revenue.


Brontosaurus

Stewardship Guidelines for shrublands

Help spread the word to neighbors and land managers about the importance of shrublands to wildlife. Landowners can take steps to help conserve these habitats on their lands:

Maintain existing habitat

- **Natural processes can help maintain shrubland habitats**. Allowing for the natural abandonment of beaver dams, and where possible, use of prescribed fire will help maintain some shrubland habitats.
- Larger shrublands (>5 acres) provide a better buffer against predation than smaller ones. **Focus conservation on large patches** of shrublands as opposed to smaller or isolated patches.
- Shrublands with **wetter soils are highly valuable**. Vegetation is denser here, providing the thickest cover for such species as New England cottontail rabbits and black racer snakes. American woodcock also use wet shrublands, searching the moist soil for earthworms.
- Consult with a professional to help identify large areas of dense shrub habitat (5+ acres) which can be maintained by **periodic cutting of small patches over time**. Federal and state cost-share programs can help fund these projects, and landowners can get free technical assistance from UNH Cooperative Extension to plan projects such as:
  - Mowing or brush-hogging different sections every 3-5 years
  - Cutting sections every 5-10 years (may require use of heavy equipment such as a "brontosaurus" type mower)
  - Using prescribed fire


Dogwood shrubs

- Even though **invasive shrubs** such as multiflora rose and common buckhorn may provide suitable cover for wildlife, these aggressive plants can cause other ecological problems and should be discouraged.
- All known locations of New England cottontails in New Hampshire occur on private lands. The survival of this endangered species relies on the **cooperation of private landowners willing to create and maintain habitat**. For information about New England cottontail conservation and habitat management, consult the publication "New England Cottontail Rabbits in New Hampshire," available from UNH Cooperative Extension or NH Fish & Game.

Create new early-successional habitat

- Landowners can get free technical assistance through UNH Cooperative Extension to help **create early-successional habitats** on their land. It is critical to identify appropriate locations for new early-successional habitats to avoid damage to sensitive species, waterbodies, or habitats that can be affected by mowing or cutting trees.
- **New openings for shrubland habitat should be located near existing thickets**, such as on the edges of powerline corridors or near shrub wetlands.
- Whenever possible, **encourage shrubs to grow naturally**. Planting is expensive and susceptible to heavy browsing by deer.
- Even small patches of early-successional habitat can be valuable to wildlife. **Allowing the edges of fields to become shrubby**, thus "softening" the edge between field and forest, is an easy way to create early-successional habitat around open fields. Shrub borders at least 20 feet wide will provide habitat for a variety of wildlife species.

Land conservation with management provisions

- Minimizing future habitat loss in areas with natural or maintained shrublands will be critical for conserving shrubland-dependent wildlife. **Putting your land into a conservation easement** will ensure that it will never be developed.
- To permanently conserve shrubland habitat, conservation easements should contain legal provisions and a **long-term funding source for management**.