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Migrating Warblers, Catch & Release, Making Baby Trees

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MASSACHUSETTS WILDLIFE

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FEATURES

On the Cover: A prescribed burn on the Montague Plains Wildlife Management Area is an important element of managing globally rare, fire-adapted Pitch Pine/Scrub Oak ecosystems. In this case, tops and branches from harvested trees needed to be burned first to reduce high fuel loads so that prescribed burning could follow. MassWildlife is conducting extensive management work designed to increase the amount of grassland, shrubland, and young forest habitat across the state to aid the conservation of a diversity of wildlife and plant species. See the article on page 4. Photographed with a Nikon D70s and 35mm lens. Photo © Bill Byrne

hugging baby TREES

by Marianne Piché

Photo © Jeff Breton

MassWildlife is working to implement a Conservation Strategy for the New England Cottontail (*Sylvilagus transitionals*) to ensure there is a future for our only native cottontail. This once-common rabbit is now rare and restricted to habitats that consist of dense expanses of young trees and shrubs that are 3-15 feet in height. These stem-packed habitats provide protection from predators (especially raptors) and an adequate supply of food at ground level. The New England Cottontail (NEC) is among a group of 20 rare or declining animal species identified in the Massachusetts State Wildlife Action Plan that are dependent on young forest/shrubland habitats. It was also designated as a candidate for federal Endangered Species Act protection in 2006 by the U.S. Fish and Wildlife Service, with a listing decision to be made by this September.

The Eastern Cottontail (*Silvilagus floridanus*), a non-native, Midwestern cousin of the New England Cottontail, also prefers shrubland and young forest habitat. This species, however, risks going out into open fields and moving through open wooded areas that lack dense cover. It has been theorized that it can do so because its eyes are placed higher on the head, allowing it to detect predators – and therefore seek cover – more quickly than the NEC, whose eyes are situated lower on the sides of the head. While this theory may or may not be true, we do clearly know that the Eastern Cottontail (EC) can exploit a habitat niche that is much broader than the NEC's.

The EC was introduced to Massachusetts from the late 1800s into the early 1900s, and is now widespread throughout the Commonwealth. The NEC, which at one time inhabited much of southern New England and eastern New York, has been in decline for 50 years and now occurs only in small, isolated populations within the previous range.

New England Cottontails are habitat specialists, hopping huggers of baby

Photo © Bill Byrne

Mimicking the natural effects of hurricane, tornado, or fire, a huge mower is used during a project in Montague to set back forest succession and create dense, early successional habitat to benefit species such as the declining New England Cottontail (left) and a host of other species dependent on these stem-dense habitats.

Photo © Steve Wright

To determine where the New England Cottontail still exists, MassWildlife researchers. in this case the Southeast Wildlife District "Rabbit Crew", set box traps (above) and survey for rabbit pellets that can be tested for DNA.

trees. They are restricted to habitat patches that provide dense cover and food throughout the entire year. Many other species utilize this habitat type, but unlike the NEC, most are habitat generalists that move in and out of it during their annual life cycles, yet also rely on and utilize other habitat types to meet their survival needs. Examples include most songbirds, Black Bear, Moose, and Bobcat; species capable of traveling greater distances or through other habitat types to find food or breeding sites. In the process, they are also better able to locate other suitable patches of stem-dense young forest or shrublands that remain unknown to the "homebound" NEC.

These habitats are important to migrating songbirds as resting and feeding stops during their bi-annual migrations, providing cover from predators and abundant insects for food. Some of these species remain in the young forest/shrubland to breed, while the fledglings of species that breed in other habitats may visit to find food and cover in it. Like other wildlife, birds have evolved to change their diet as food availability changes with the seasons and they search for food in different habitat types. This strategy allows certain species to forage over larger areas during spring, summer, and fall.

To survive when winter comes to town, wildlife living in temperate climates evolved one of three survival strategies: migrate, hibernate, or find food. Many examples of our breeding birds migrate, while our bears, woodchucks, bats, and reptiles hibernate. Our cottontail rabbits, however, remain active and at home, and so must find food amidst the cold and snow. Throughout the winter, NECs

are shrub lovers, foraging on the twigs and buds of raspberries, blackberries, dogwoods, meadowsweet, blueberry, etc., and young trees. If they find themselves in a patch of habitat that isn't large enough to provide an adequate food supply and protection throughout the winter, their survival rate declines. The species has been shown to have low winter survival rates in habitat patches that are less than 12 acres in size. They cannot safely disperse to another habitat patch that offers cover and food without the risk of becoming prey to someone else using the strategy of finding food to survive the winter. These include the Eastern Coyote, Fisher, and Great Horned Owl.

New England Cottontails and other lagomorphs leave distinct signs of their presence in winter as they browse twigs, make tracks in the snow, and deposit fecal pellets. Searching for these signs, DFW biologists have been keeping the rabbits company out there in the cold. We don our snowshoes, equip ourselves with data sheets, GPS units, and collection vials, then lower our heads and burrow our way through the thickets in quest of rabbit fecal pellets. We do this in an effort to document the occurrence of the NEC in new locations, as well as to reconfirm their continued presence in areas where we have found them before: It's a required component of the Conservation Strategy for the NEC.

Because they cannot be distinguished from the non-native EC in the wild, either by sight or their sign, we have to gather rabbit pellets and send them to a laboratory for DNA analysis to determine the species. So far, we have been able to reconfirm the presence of the NEC in areas where the species was known to occur in the early 2000s, but with the exception of Nantucket, they now appear to be restricted to specific mainland habitats in southeastern and southwestern Massachusetts.

Habitat Management

The conservation – including protection, restoration, and management – of Massachusetts' wild fauna and flora is the statutory responsibility of the Massachusetts Division of Fisheries & Wildlife (MassWildlife). This responsibility is established and articulated in the Constitution and General Laws of Massachusetts. A crucial component of MassWildlife's State Wildlife Action Plan to conserve the biological diversity of the Commonwealth is restoring and managing habitat. The scope of such work is obviously enormous, and we often accomplish it through cooperative part-

A New England Cottontail hops back into its nearly impenetrable habitat after examination and release. The species inhabits a small fraction of its former range.

Photo © Jeff Breton

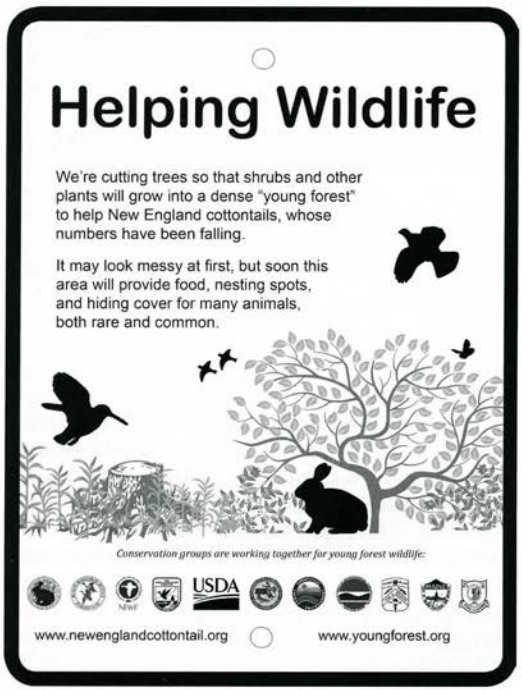
Photo © Paul Metcalf

The Eastern Ratsnake is among three native reptiles associated with early successional habitats.

Ruffed Grouse, Black Racer, Black Bear, Moose, and Bobcat. Young forest habitat is dominated by dense cover composed of tree seedlings, saplings, shrubs, wildflowers, and grasses, all of which appear in response to increased sunlight reaching the forest floor after mature trees are removed. Mother Nature creates this habitat type through periodic disturbances such as hurricanes, tornados, ice storms, insect or tree disease outbreaks, beaver activity, and wildfires.

As a result of these random events, the availability of young forest habitat changes in space and in time, appearing and disappearing across natural areas. This temporal habitat is also referred to as early-successional because newly created patches immediately begin to move through plant succession (changes in vegetative community over time), gradually developing into later successional stages and eventually returning once again to mature forest stands.

As a habitat type, young forests are beneficial to their specialized inhabitants for up to 20 years, at which time



The effort to conserve the New England Cottontail is a regional one involving several state and national agencies.

Rare and Declining Native Species for which Young Forest Habitat is Important or Crucial to Long Term Survival

Eastern Ratsnake

Black Racer

Eastern Hognose Snake

Ruffed Grouse

Northern Bobwhite

American Kestrel

American Woodcock

Whip-poor-will

Willow Flycatcher

Brown Thrasher

Blue-winged Warbler

Golden-Winged Warbler

Prairie Warbler

Mourning Warbler

Eastern Towhee

Field Sparrow

White-throated Sparrow

Southern Bog Lemming

New England Cottontail

A Noctuid Moth

Photo © Steve Wright

Rabbit pellets offer an efficient way to provide definitive proof of NEC presence, but they must be collected and DNA-tested to provide confirmation.

the species that rely on them must find new early-successional habitat to occupy. When an animal or plant species has a limited range or ability to disperse, it cannot benefit from new patches created by natural disturbances unless those disturbances happened to take place nearby. As a result, for species such as the NEC that are restricted to a very limited range and cannot readily disperse, we have no choice but to maintain habitat for them right where they presently occur. To manage for young forest habitat, we mimic the natural disturbances that create it, clear-cutting and clearing older and mature trees to set the successional clock back to "start."

Our restoration and management strategy involves actively managing to maintain early-successional habitats as a component of our landscape. It is *not* about choosing a point in time to return to or to recreate the countryside we once had during a period of high agricultural land use. It *is* about maintaining the level of biodiversity we have today by managing a variety of habitat types in sufficient quantity to prevent the loss of the species that depend on them. Some of these species certainly responded to an increased amount of early-successional habitat as a result of previous land-use practices and expanded their ranges and/or became more abundant in past decades and centuries. But many have now declined throughout their current and historic ranges due in part to the loss, degradation, and fragmentation of their habitats resulting from more recent land-use practices.

Managing a mosaic of habitat types to provide for our rare and declining species will ensure that these species remain a part of our natural heritage. In some cases, a manage-in-place approach is necessary for habitat specialists with limited dispersal capabilities. The Conservation Strategy for the New England Cottontail involves doing just that, and depends on the participation of private landowners with property in focal areas where we know our only native cottontail occurs. Our existing partnership with the NRCS and a partnership they have with the Department of Conservation and Recreation (DCR) Service Forestry

Program positioned us well to utilize this conservation approach.

As conservation partners, we hold events designed to inform landowners about the options they have for managing habitat or woodlands, as well as funding resources that are available to conduct the management. The DFW Habitat Biologist, NRCS conservation planners, and DCR Service Foresters have the privilege of being invited by landowners to their properties to share our knowledge and expertise. We work together to help them develop and reach both habitat and woodland management goals. Planning and completing projects also involves coordinating with local foresters and timber harvesters. Funding for Forest Stewardship Plans is available for eligible landowners through NRCS or DCR, and much of the cost of management can be reimbursed under a conservation plan funded by NRCS.

Each New England Cottontail habitat management project begins with a DCR-approved Forest Stewardship Plan prepared by a Massachusetts licensed consulting forester who has carefully selected a site for habitat management. Each one ends with a DCR-permitted Forest Cutting Plan carried out by local licensed timber harvesters who skillfully clear trees and carefully construct brush piles to provide cover and protection. Locations selected for management are typically in forest stands consisting of poorly formed or diseased trees that are not capable of developing into marketable timber, but can still provide other local renewable wood products such as cordwood, chips, bark mulch, and wood for making pallets. Some mature trees are retained to provide a seed source for the next generation of forest stand, as well as food for wildlife. This management results in the production of crucial habitat right where it is needed in the present, yet also creates a regenerating forest stand that is likely to be more economically valuable (producing timber of better quality) in the future.

In the Southern Berkshire New England Cottontail focal area, 13 private landowners have received NRCS funding assistance to create patches of young forest habitat ranging in size from 5 to 40 acres and totaling 225 acres. To the

landowners, we owe our gratitude for their willingness to actively manage their properties to maintain our current level of biodiversity. The protection, restoration, and management in which they have voluntarily engaged is an important factor that the U.S. Fish and Wildlife Service is considering as it evaluates the conservation efforts being made to reverse the decline of the New England Cottontail. Its success will likely determine if federal listing of the NEC will be necessary.

Young forests are ephemeral, hence maintaining this relatively short-lived habitat type will be an ongoing process. Pursuing it over time will eventually give many other landowners the opportunity to engage in the conservation of baby tree huggers and shrub lovers. The result will be the continued support and maintenance of the biodiversity resources that benefit all the residents of Massachusetts, human and wildlife alike.

Marianne Piché holds a Master's degree in Conservation Biology and has served as a Habitat Biologist for MassWildlife since 2008, working with other natural resource professionals to develop habitat management plans for private landowners, land trusts, and conservation organizations throughout Massachusetts. When she is not planning habitat projects, she enjoys birding, hiking, and kayaking.

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