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On the Cover: An Eastern Wild Turkey, *Meleagris gallopavo*, looks as regal as an emperor as he goes into his wing-dragging, tail spreading, full strut display to impress nearby hens and intimidate potential rivals. The full tail fan and extended (6+ inches) beard mark him as an adult male at least 2 years old. The black-edged breast feathers and the wattle/head display readily distinguish him from a hen, which would have brown-edged breast feathers and lack the head coloration. Photo was taken in March from a car blind with Nikon 300mm lens and fill flash. Photo © Bill Byrne

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Bringing Back Our Bunny

Cottontail rabbits are abundant and common animals throughout Massachusetts. City parks; suburban yards; farms; and transmission line, railroad, and interstate highway corridors all create a shrub/young forest interface that is near optimum habitat for cottontails. Although they are indistinguishable in the field, there are actually two species of cottontail rabbit in the state: The New England Cottontail (*Sylvilagus transitionalis*) and the Eastern Cottontail (*Sylvilagus floridanus*). The New England Cottontail tends to be darker and smaller than the Eastern Cottontail and usually has a black spot between the ears, whereas, nearly 50% of Eastern Cottontails will have a white spot on their forehead. Biologists can make educated guesses,

but can *confirm* species identification only through examination of a rabbit's skull, or through DNA analysis.

Until the 1900s there were no Eastern Cottontails in New England. The Eastern Cottontail was introduced into the region through periodic releases into the wild of rabbits imported from the Midwest. These introductions occurred from the latter part of the 1800s up to World War II. The imported rabbits had the ability to exploit a wider range of habitats than our little natives, and have consequently displaced and/or supplemented New England Cottontails throughout their range.

The original range of the New England Cottontail was in New York east of the Hudson River; across all of Connecticut, Rhode Island, and Massachusetts; and north into southern Vermont, New Hampshire and southern Maine. Today there are no longer any New England cottontails in 88 percent of the species' historic range. It is completely absent from Vermont and there are only very small remnant populations in Maine and New Hampshire.

In southern New England, the species persists in southeastern Massachusetts, particularly upper Cape Cod; east of the Connecticut River in eastern Connecticut; and possibly southeastern New York, western Massachusetts, and one small area near the Massachusetts-Rhode Island border. Consequently, the U.S. Fish and Wildlife Service has placed the New England Cottontail on the list of candidate species being considered for the Federal Endangered and Threatened Species list under the provisions of the Endangered Species Act of 1973.

It appears that factors causing the decline of our New England Cottontail populations include habitat loss and fragmentation, competition with expanding populations of the Eastern Cottontail, and genetic "swamping" via hybridization. Of these explanations, researchers believe that habitat loss and fragmentation is the most prominent and significant causative factor.



Photo © Bill Byrne

A peer-reviewed paper in the *Wildlife Society Bulletin* (11/1/06: "A Range-Wide Survey to Determine Current Distribution of New England Cottontails") presented the following summary on the status of our little native: "Historically the New England Cottontail likely inhabited a variety of young forest and native shrub lands throughout the northeastern United States. These habitats resulted from forest disturbance due to wildfire, beaver, hurricanes and other severe storms, and Native American agriculture practices, especially burning.

Following European colonization, early successional young forest became widely available after widespread abandonment of farmlands in the late 19TH and early 20TH centuries. By 1960, most of these second-growth forests were maturing into closed-canopy stands that lacked the necessary understory vegetation to support the New England Cottontail."

Sustaining viable New England Cottontail populations will require human intervention through intensive habitat management to create and maintain very dense thicket/shrub lands. These habitats are key to their survival, offering opportune food sources and protection from predators. Researchers have determined that the New England Cottontail needs large habitat patches at least 10-20 acres in size to survive. At the landscape level, these patches should be located less than half a mile apart so the rabbits can travel between them. This allows for genetic exchange between local populations, and even more importantly, allows existing populations to reach and colonize new habitats and expand in both size and range.

The Division's Comprehensive Wildlife Conservation Plan (see editorial in *Massachusetts Wildlife* No. 1, 2007) has identified the New England Cottontail as one of 21 species dependent on young forest and shrubland habitat whose populations are in decline because of the significant loss of this habitat type. Today, less than 5% of our statewide open space supports this type of habitat. Consequently, the Fisheries and Wildlife Board has established a goal of creating shrub/young forest habitat on 25% of the Division's Wildlife Management Areas. Additionally, the Division has developed



a private land habitat management program that provides technical assistance using federal grant monies provided through formal agreement with the U.S. Fish and Wildlife Service and the USDA Natural Resource Conservation Service. These programs are designed to enable private landowners to undertake habitat management actions that will benefit declining species.

Restoration doesn't end with habitat management in the Bay State alone, however. Recognizing that the problems afflicting the New England Cottontail are regional in nature, Massachusetts has joined with the U.S. Fish and Wildlife Service, the USDA Natural Resources Conservation Service, and the fish and wildlife agencies of Connecticut, Rhode Island, New Hampshire, New York, and Maine to establish a New England Cottontail Initiative (partnership). Through collaborative conservation efforts and the pooling of our technical expertise and resources, we are launching a coordinated restoration program that we hope will allow us to prevent the extinction of the New England Cottontail.

Wayne F. MacCallum
Wayne F. MacCallum, Director

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