New England Cottontail

Sylvilagus transitionalis

Disappearing rabbit trick

Why would a rabbit, the epitome of prolific breeding, be considered for protection under the Endangered Species Act? The New England cottontail is in just this predicament. Its population numbers are declining. As recently as 1960, New England cottontails were found east of the Hudson River in New York, across all of Connecticut, Rhode Island and Massachusetts, north to southern Vermont and New Hampshire, and into southern Maine. Today, this rabbit's range has shrunk by more than 75 percent. Its numbers are so greatly diminished that it can no longer be found in Vermont and has been reduced to only five smaller populations throughout its historic range.

Where the bunnies are

The New England cottontail prefers early successional forests, often called thickets, with thick and tangled vegetation. These young forests are generally less than 25 years old. Once large trees grow in a stand, the shrub layer tends to thin, creating habitat that the New England cottontail no longer finds suitable.

Active at dawn and at dusk or night, the New England cottontail feeds on grasses and plant leaves in spring and summer and eats bark and twigs in winter. Home ranges vary from one-half to 8 acres, with adult males having larger home ranges than females. Research has shown that New England cottontails on patches of habitat larger than 12 acres are healthier than those on patches less than 7 acres. Presumably, rabbits on small patches of habitat deplete their food supply sooner and have to eat lower quality food, or may need to search for food in areas where there is more risk of being killed by a predator.

Anne Brown

New England cottontail

Why are their numbers declining?

Biologists believe the reduced extent of thicket habitat is the primary reason for the decline in numbers and range of New England cottontails. Prior to European settlement, New England cottontails were probably found along river valleys where floods and beavers created the disturbances needed to generate its preferred habitat. Forest insect outbreaks, large storms like hurricanes and ice storms, and wild fire also created disturbances in the forest that promoted thicket growth. During colonial times, much of the New England forest was cleared for agriculture and then subsequently abandoned during the early 1900s. This abandoned farmland allowed for a great deal of early successional habitats to develop. Today, these habitats are aging while others have been developed and are no longer suitable for the New England cottontail.

The introduction of exotic invasive species, such as multiflora rose, honeysuckle bush and autumn olive, in the last century has changed the type of habitat available to New England cottontails. These plants form the major component of many patches where cottontails can be found. It may be that stands dominated by non-native species do not provide rabbits with the food resources that native plant species do.

Today white-tailed deer are found in extremely high densities throughout the range of New England cottontails. Deer not only eat many of the same plants but also affect the structure and density of many understory plants that provide thicket habitat for New England cottontails.

Introduced competitor

In the early 1900s until the 1960s, hunting clubs and some eastern states introduced another species of rabbit, the eastern cottontail, into New England. Eastern cottontails appear able to thrive in a greater variety of habitats than New England cottontails through its ability to detect predators sooner. This helps eastern cottontails forage more safely in relatively open cover, while New England cottontails risk predation whenever they leave the security of their dense thicket habitats. The slightly better ability to avoid predators enables eastern cottontails to live in more diverse habitats, such as fields, farms and forest edges, and they are gradually replacing New England cottontails in many habitat patches.

Identity is more than skin deep

It is nearly impossible to distinguish a New England cottontail from an eastern cottontail by looking at them. The minor differences of ear length, body mass, and presence or absence of a black spot between the ears and a black line on the front of each ear are subtle enough to be missed and are not 100 percent accurate. Scientists used to rely on examining the rabbits' skulls for positive identification, but can now use DNA analysis of fecal pellets. Since rabbits drop fecal material all around their territory, the extracted DNA from pellets collected throughout the region can provide a picture of where the New England cottontail is found.

Understanding the rabbit

Several research projects are underway that will help determine the best management practices for New England cottontail. These projects include an investigation of the range-wide genetic structure of the species and an analysis of the gene frequencies in Maine's New England cottontail population. This research will provide information about the rabbit's dispersal patterns and other behaviors, and will help estimate the size of existing populations. Researchers are also evaluating an alternative technique for identifying rabbit species through DNA in fecal pellets that should facilitate survey efforts to identify new New England cottontail sites and track changes in patch occupancy.

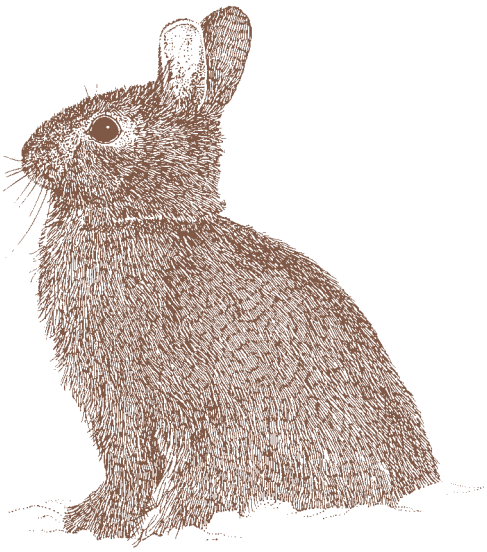
Another important area of research involves moving New England cottontails to former parts of their range. Managers believe that "translocation" may allow the rabbits to more quickly occupy areas where habitat has been restored.

Researchers are also conducting radio telemetry studies to better understand how eastern and New England cottontails use habitats when both species occupy the same area. This information could provide valuable insight on the ability of these two species to co-exist.

Habitat is the key to recovery

It is relatively easy to manage and create thickets for the New England cottontail. The Service, states and many other organizations are working together to manage habitats for the species, which will benefit other animals – such as American woodcock, ruffed grouse, eastern towhees, yellow breasted chats, whip-poor-wills and other shrubland dependent wildlife that are of conservation concern. Recently awarded grants totaling more than $1 million are supporting these efforts and the development of a conservation strategy to recover the New England cottontail.

Landowners play a crucial role in providing cottontail habitat. Many of the known cottontail patches occur on private lands. The Service is working diligently with state governments to develop and implement candidate conservation agreements that provide assurances should the New England cottontail be formally listed as a threatened or endangered species in the future. For more information, view the Landowners Guide to New England Cottontail Management online at http://www.edf.org/.



Northeast Region
U.S. Fish and Wildlife Service
300 Westgate Center Drive
Hadley, MA 01035
413/253 8200
http://northeast.fws.gov

Federal Relay Service
for the deaf and hard-of-hearing
1 800/877 8339

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

April 2009