

NEW ENGLAND COTTONTAIL NEWSLETTER



FALL 2023

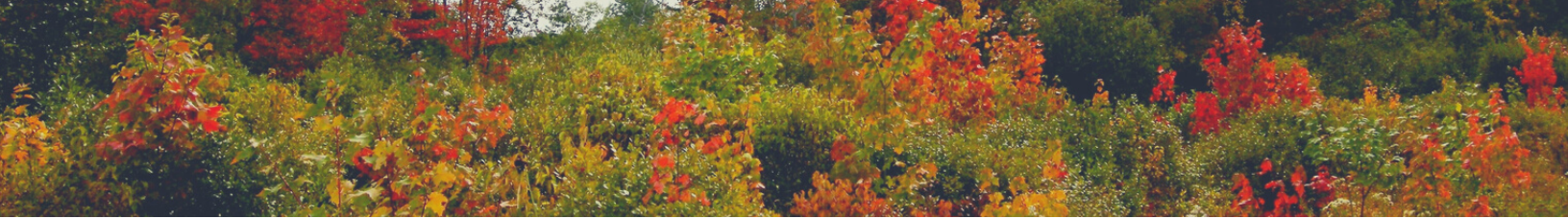
Welcome to the New England Cottontail Newsletter! This publication was produced by members of the New England Cottontail Conservation Initiative. We formed in 2009 as a collaboration between state and federal natural resource agencies, non-governmental organizations, land trusts, universities, and private landowners, with a goal of conserving the New England Cottontail throughout the species' current range. From captive rearing, to research and monitoring, to creating habitat, we are working hard to make sure New England's native cottontail rabbit can thrive. In this and future editions of our newsletter, we will share with you the work we do in carrying out the **Conservation Strategy for the New England Cottontail (*Sylvilagus transitionalis*)**.



Radio collars are used to track New England cottontail movement and survival/USFWS

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Rabbit Bachelorette

Hannah Petit
Master of Science
Exotic Animal Behavior Lab, University of Rhode Island

A conservation breeding program for New England cottontails (*Sylvilagus transitionalis*, NEC) has been ongoing at Roger Williams Park Zoo (RWPZ) since 2011. So far, this effort has bred and released over 250 young rabbits, known as kits, across New England. Learn more about captive breeding at <https://youngforest.org/zoos-and-islands-help-protect-new-england-cottontails>.

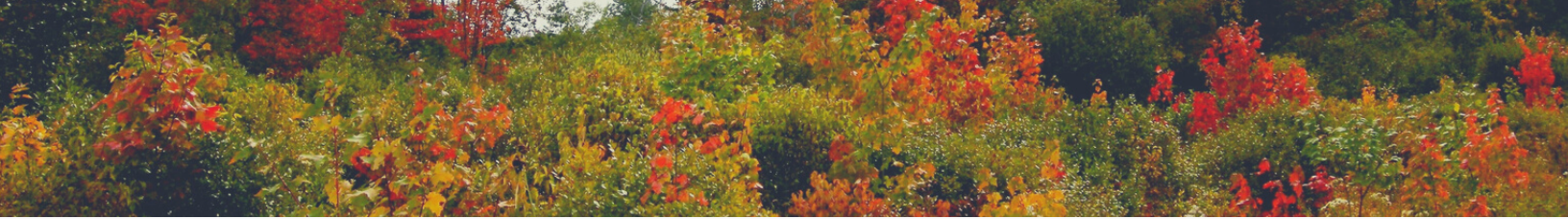
Despite many rabbits producing and successfully raising offspring, some female rabbits in the program have not successfully birthed any bouncing baby bunnies. Some rabbits were not breeding like, well...rabbits. In 2018, the RWPZ teamed up with the Exotic Animal Behavior Lab (EABL), led by Dr. Justin Richard at the University of Rhode Island (URI), to try to learn why some rabbits are not living up to their reproductive reputation. During the 2019 breeding season, the URI lab collected 24-hour continuous video footage of 13 pairs of rabbits. Only one male and female were paired together at a time. Analysis of the video revealed that the pairs that were not producing offspring did not copulate at all. These findings answered the original question of why some females were not producing offspring, but now the scientists were faced with a new question. Why were certain pairings not attempting to reproduce?

Hannah Petit, a master's student in the EABL, thought female mate choice might be the answer. Mate choice is the process by which females choose to mate with certain males based on their preference for different male traits. If female NEC are highly selective, then avoiding unwanted mates could be expected. In addition, females paired with preferred males would increase the chances of kits being born.

To test this hypothesis, in 2022, Hannah created an experiment which she whimsically refers to as "Rabbit Bachelorette." Before pairing males and females together, Hannah created a setup where female cottontails could preview three different males. Males that were visited most often were considered "preferred" by the female. The female was paired separately with each of the males to determine if the preference predicted breeding success.



Mate choice experiments within captive breeding facilities have increased reproductive success of New England cottontails/Roger Williams Park Zoo & Petit

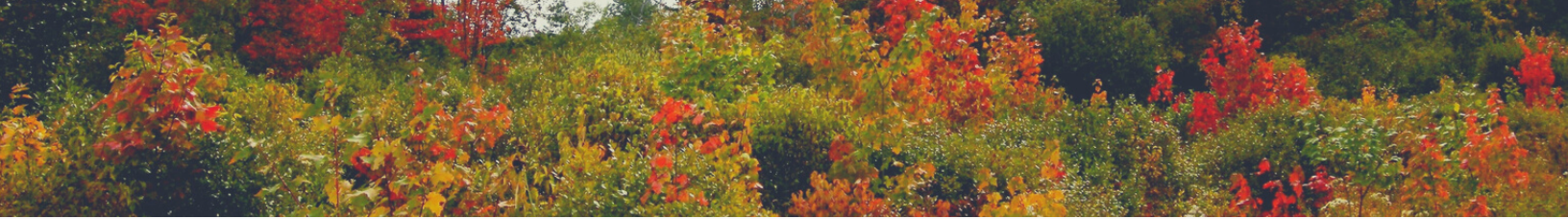


Rabbit Bachelorette (continued)

The rabbit bachelorette approach seemed to work, resulting in the greatest number of kits born in a single year since the program's inception. Clearly, female mate choice was important: females paired with preferred males produced 50 percent more offspring than females paired with non-preferred males. This discovery may have a large impact on the total number of offspring produced in the future to help increase declining wild populations. Overall, the addition of female mate choice increases the effectiveness of RWPZ's critically important captive breeding program and will be an important component of the program in future breeding seasons. Work will continue in Richard's lab at URI to try to figure out what traits make certain males preferable to others so that the breeding program can reach its full potential.



Providing female New England cottontails with a choice of mates has yielded promising results through increased reproduction within the captive breeding program at Roger Williams Park Zoo/Roger Williams Park Zoo & Petit



USFWS Making Strides Towards Achieving Land Protection Goals

Julia Firl
Senior Realty Specialist
U.S. Fish & Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) added two new parcels of land to Great Thicket National Wildlife Refuge this year, with another nine parcels in the queue for acquisition in the coming months. A highlight from southeastern Maine was the acquisition of a 15.99-acre parcel located on the Salmon Falls River near the town of Eliot.

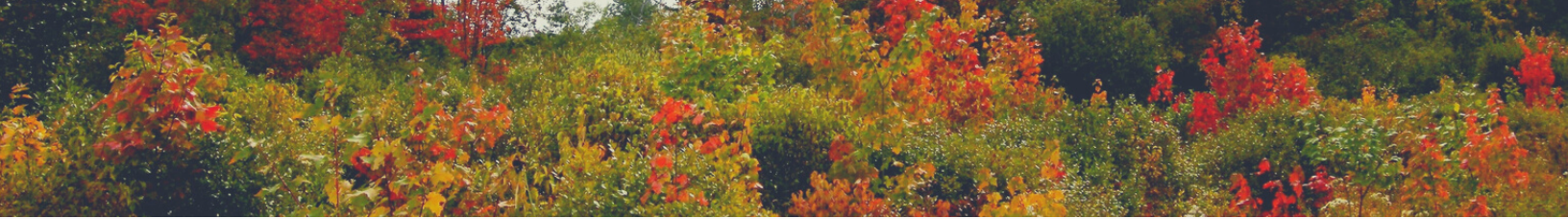
“With a history of timber harvest, the diverse habitats of the parcel offer an opportunity to maintain and create early successional habitat along the riparian corridor where a riparian forest ecotone permanently provides suitable habitat,” says Karl Stromayer, manager of the Great Thicket refuge acquisition focal areas in Maine. In addition to New England cottontails (NEC), other species that rely on young forests, such as the brown thrasher, blue-winged warbler, American woodcock and a host of amphibians, reptiles and pollinating insects, will also benefit from this new acquisition.



Past forest management creates habitat diversity, making the land more suitable for species that require early successional forests/USFWS

NEC have been documented within 0.2 miles of the parcel on Great Works Regional Land Trust’s “Savage Preserve” and on a nearby powerline right-of-way. Within a 1-mile radius of the newly acquired refuge parcel are 152 acres of protected lands, leading the Maine Department of Inland Fisheries and Wildlife to identify the property as a critical NEC traveling and dispersal area. “Acquiring key parcels like this to connect patches of habitat provides the best opportunity for landscape-level conservation,” says Stromayer.

Sellers Gary and Corinne DellaTorre are pleased to know the property will be permanently protected from development. “We enjoyed hiking the land and accessing the river for years before we decided to sell, and we know the wildlife enjoys it, too,” says Corinne. “We are glad to know the wildlife will always have a home here.”

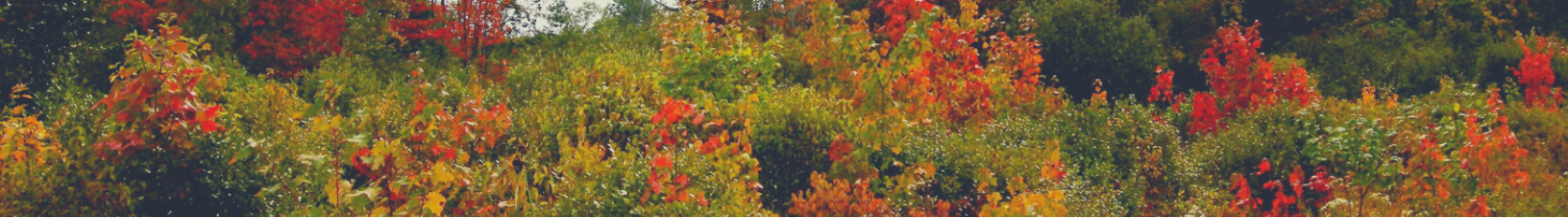


USFWS Making Strides (continued)

Great Thicket National Wildlife Refuge was established by the USFWS in 2016 to protect early successional habitat for species like the NEC. The refuge spans six states and, to date, USFWS has acquired nearly 400 acres. The refuge Land Protection Plan aims to acquire 15,000 acres of land across 10 focal areas. The USFWS expects to reach 1,000 acres of land protection for Great Thicket by the end of 2024. Learn more about the refuge here: <https://youngforest.org/how-create-thriving-young-forest/great-thicket-national-wildlife-refuge>



Riparian corridors, like what is present at the newly acquired Great Thicket NWR property in Maine, provide early successional habitat which has been declining across New England/USFWS



Rabbitat Planting Party

Sarah Dudek
Maine New England Cottontail Habitat Restoration Coordinator

On September 23, to celebrate National Public Lands Day (NPLD), Rachel Carson National Wildlife Refuge hosted a volunteer workday on Cutts Island in Kittery, Maine. NPLD is the nation's largest single-day volunteer effort to promote enjoyment and conservation of public lands. At the Cutts Island event, 58 volunteers planted more than 690 native shrubs, controlled invasive plants, and built brush piles to provide hiding places for a range of wildlife, all efforts aimed at enhancing thicket habitat.

The work directly benefited Rachel Carson NWR's newest residents and Maine's only native rabbit, the state endangered New England cottontail (NEC). Beginning in March 2023, Rachel Carson NWR partnered with the Maine Department of Inland Fisheries and Wildlife to translocate 18 NEC to Refuge property in Kittery. "We're thrilled to be able to augment the New England cottontail population in Maine with this first ever release onto the refuge. We thank our partners for making this possible, as well as the many volunteers who helped us restore this now great habitat here in Kittery," said Refuge wildlife biologist Kate O'Brien.

The regionwide NEC conservation efforts include intensive habitat restoration to create, maintain, and connect thicket habitat. Beginning in 2010, a habitat restoration project was initiated on Refuge property in Kittery with the goal of creating and enhancing thicket habitat after the number of rabbit detections began to decline in the area. After over a decade of working to restore habitat at this site, conservationists are releasing NEC to support an existing small population of rabbits in the town of Kittery. As the population on the refuge grows, biologists hope it will expand into other areas within hopping distance to strengthen the genetics of resident rabbits and to boost the local NEC population.

The staff at Rachel Carson NWR express their gratitude to the volunteers who spend their time and energy tackling conservation projects such as restoring thicket habitat for endangered species. Maine's New England cottontail restoration effort would not be possible without assistance from many conservation partners, including the National Fish and Wildlife Foundation, Wells National Estuarine Research Reserve, Maine Wildlife Park, New Hampshire Department of Fish and Game, Rhode Island Division of Wildlife, Roger Williams Park Zoo, Queen's Zoo, local land trusts, private landowners, and many generous volunteers.



Volunteers help restore thicket habitat to public lands/USFWS



Kits Niche: Hi y'all it's Fall, time to get ready for Winter!

Find the **orange** words, they can be in any direction and can overlap!

Winter Survival

T	C	D	E	C	I	D	U	O	U	S	K	A	Q	X	K	J	A
E	Z	A	T	M	I	G	R	A	T	E	D	D	I	X	I	U	X
M	X	X	M	Q	O	B	A	H	L	D	J	A	K	I	T	V	T
P	B	O	Z	O	L	G	A	A	E	L	E	P	P	O	S	E	O
E	Q	P	O	F	U	G	T	B	Y	I	T	T	G	U	C	F	L
R	T	E	G	O	C	F	V	I	H	S	X	A	B	N	T	X	E
A	X	S	S	V	V	R	L	T	K	X	M	T	H	T	O	P	R
T	G	D	O	L	E	M	X	A	A	Z	O	I	O	K	R	M	A
E	B	D	O	P	M	F	A	T	G	K	H	O	R	N	P	J	T
X	H	I	B	E	R	N	A	T	E	E	B	N	L	H	O	F	E
J	J	M	R	D	Q	N	K	U	M	Y	D	S	Q	R	R	Y	E
S	R	S	U	B	N	I	V	E	A	N	S	B	Q	E	E	V	W

The **temperate deciduous** forest of the eastern United States and southeastern Canada are in between the tropics and the arctic and have four seasons: spring, summer, fall, and winter. Plants and animals that live there for all or part of the year get ready for winter in different ways. Some of our bird friends have already begun to **migrate** south, and our bear buddies are picking a good spot to **hibernate**. How about the bunnies? What will they do this winter? They'll **tolerate** the cold and stay active!

Animals that stay active in winter have evolutionary **adaptations** that help them survive in the cold and snow. Their body conditions may change, or they may change their behavior. Some, like squirrels, go into **torpor**, which is like hibernation but only lasts for a few hours each day. Snowshoe hares change their fur color from brown to white so they are **camouflaged** against the snow, protecting them from predators. Others may burrow under the snow, becoming **subnivean**. The snow actually insulates them from the cold and lets them hide. Other animals, like penguins, may even huddle together to keep warm.

We can help New England cottontails stay active all winter by giving them thick young forest and shrubland **habitat**. Lots of shrubs and young trees, including conifers like juniper, and evergreens like mountain laurel, are good for them to eat, hide in, and gain shelter from the cold wind. This habitat also helps other animals that stay active and tolerate the winter.



New England cottontails depend on thick young forest and shrubland habitat for winter survival/USFWS

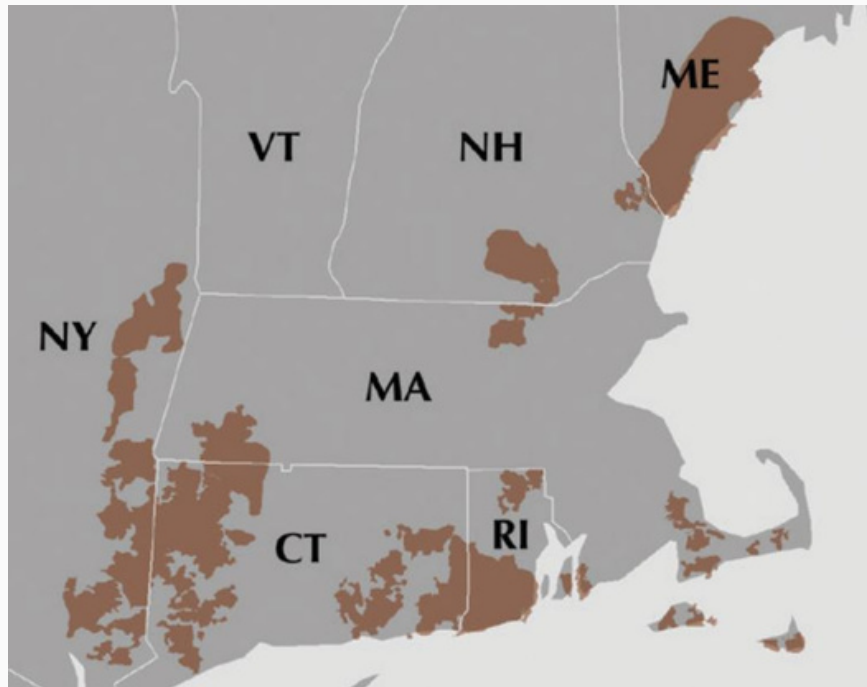
ANSWERS

T	C	D	E	C	I	D	U	O	U	S	K	A	Q	X	K	J	A
E	Z	A	T	M	I	G	R	A	T	E	D	D	I	X	I	U	X
M	X	X	M	Q	O	B	A	H	L	D	J	A	K	I	T	V	T
P	B	O	Z	O	L	G	A	A	E	L	E	P	P	O	S	E	O
E	Q	P	O	F	U	G	T	B	Y	I	T	T	G	U	C	F	L
R	T	E	G	O	C	F	V	I	H	S	X	A	B	N	T	X	E
A	X	S	S	V	V	R	L	T	K	X	M	T	H	T	O	P	R
T	G	D	O	L	E	M	X	A	A	Z	O	I	O	K	R	M	A
E	B	D	O	P	M	F	A	T	G	K	H	O	R	N	P	J	T
X	H	I	B	E	R	N	A	T	E	E	B	N	L	H	O	F	E
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S	R	S	U	B	N	I	V	E	A	N	S	B	Q	E	E	V	W

Learn More and Join the Effort!

Visit our website explaining how we are working together for the New England cottontail:
<https://youngforest.org/wildlife/new-england-cottontail>

New England Cottontail Focal Areas



If you want to learn more about New England cottontail conservation efforts in your state's focal areas, refer to the contacts below:

State Wildlife Agencies:

Connecticut: deep.ctwildlife@ct.gov
860-424-3011
Maine: info.ifw@maine.gov
207-287-8000
New York: wildlife@dec.ny.gov
518-402-8883

Massachusetts: Mass.Wildlife@mass.gov
508-389-6300
New Hampshire: wildlife@wildlife.nh.gov
603-271-2461
Rhode Island: DEM.DFW@dem.ri.gov
401-789-0281

Funding Resources:

US Fish and Wildlife Service
Partners for Fish and Wildlife Program
newengland@fws.gov
603-223-2541

US Department of Agriculture
Natural Resources Conservation Service
Environmental Quality Incentives Program
www.nrcs.usda.gov