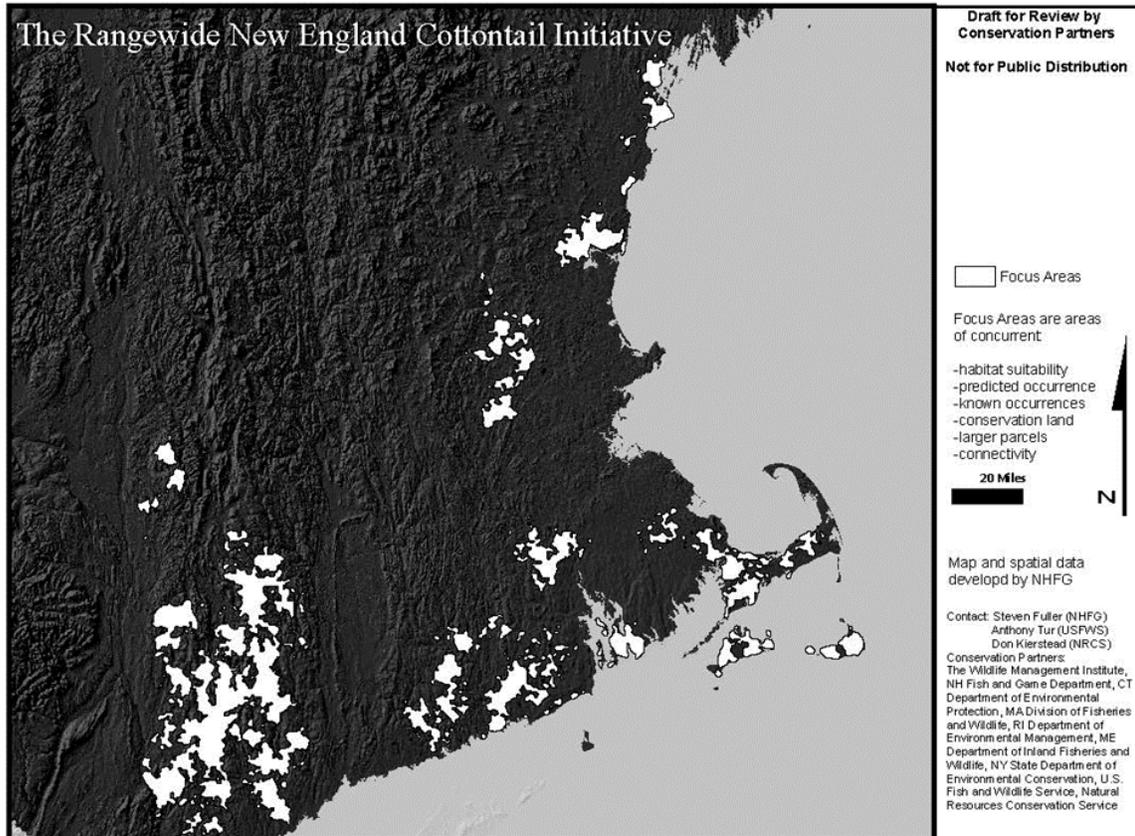


# NEW ENGLAND COTTONTAIL HABITAT RESTORATION SPECIAL INITIATIVE PROPOSAL UNDER THE WILDLIFE HABITAT INCENTIVE PROGRAM



*Above figure depicts New England Cottontail focus areas within the historic range.*

## SECTION 1 – Proposal Overview

### **NRCS New England Cottontail Habitat Restoration Initiative (NECI):**

A comprehensive strategy to support the recovery of the New England Cottontail in its historic New England Range.

**Total Acres of Emphasis Area:** 750,000 acres

### **Natural Resources Conservation Service (NRCS) Contact:**

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## **Executive Summary:**

In 2006, the New England Cottontail rabbit (NEC) was listed as a federal candidate species under the Federal Endangered Species Act (ESA) due to an 86% decline in its historic range since 1960. NEC is listed as a priority species in every Wildlife Action Plan (WAP) for the states in which it occurs (Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, and New York), and is listed as an “endangered” species by state law in Maine and New Hampshire. The NEC is extirpated in Vermont, and only five distinct populations remain within its historic range.

NEC requires at least 25 acres of continuous early successional habitat within a larger landscape context that includes: dispersal corridors, shrub wetlands, and smaller parcels containing dense thickets. Landscape fragmentation, loss of habitat from succession, infestations of invasive plants, and alterations of hydrology, are the most common resource concerns affecting NEC. Also, working with private landowners to convert more profitable or aesthetically pleasing land uses such as forest and grassland to shrubland or early successional forest is a challenge.

Because NEC often inhabits enriched landscapes suitable for agriculture and forestry operations, formal federal listing of the species will impact producers who have lands designated as critical habitat. For this reason alone, it is critical that we preclude the need to federally list the species, develop and maintain habitat within priority areas, and work to offer incentives to landowners to support NEC conservation.

### Current Efforts

The state wildlife conservation agencies of NY, CT, RI, MA, NH and ME, along with the U.S. Fish and Wildlife Service (USFWS) and the NRCS, as well as non-government conservation organizations, are working together to deliver outreach efforts within NEC priority areas. These areas are available via GIS and include ranked parcel data created by Dr. Steven Fuller of New Hampshire Fish and Game (Exhibit 1, attached)

NRCS in ME, MA, and NH have each set up special funding pools under WHIP for private landowners to improve habitat for NEC. However, there is greater opportunity to expand these efforts in all six states, which host the historic range of the species, through a collaborative strategy to target and leverage NRCS funds. NRCS has also funded agreements, and is working directly with biologists from partner agencies, to increase capacity for additional outreach, planning and implementation.

Due to difficult economic times, and a lack of economic return from shrubland habitat compared to field or forest, landowners who are usually willing to allow projects on their land do not have the matching dollars. To overcome this hurdle, NRCS, USFWS, and State agencies are working together to pool dollars to effectively eliminate the landowner’s cost share. Due to these reasons, State Conservationists (STCs) are encouraged to investigate scenarios when 90% WHIP payment rates are justified to restore identified essential habitat.

## Goals

To preclude the need to federally list the species and to enable potential down-listing from endangered under Maine and New Hampshire law, partners in the region agree approximately 5,000 acres of habitat created or enhanced within the identified priority areas region-wide are needed. Furthermore, 59 species of greatest conservation need in New England depend on early successional habitats and will also benefit from this initiative (See Exhibit 2). Through this proposal, NRCS will create and enhance approximately 2,500 acres of shrubland, thickets and early successional forest over five years. NRCS and partners will target these acres within priority landscapes derived from GIS landscape analysis, field reconnaissance, documentation of occupied landscapes, pellet surveys, trapping, and genetic analysis. A region-wide practice list will be used to focus dollars within priority landscapes, yet individual states will use state-specific scenarios under approved practices.

In addition to the goals of this initiative, special technical assistance needs will be addressed for habitat planning and monitoring through contribution agreements, conservation activity plans, and federal and state grants. Additional capacity to build upon this initiative will still be needed in the region. NRCS states will submit a proposal in January 2011, to secure funds under an existing national contribution agreement between National Fish and Wildlife Foundation (NFWF) and NRCS focused on recovering candidate species to fund shared positions co-located in NRCS field offices.

## Collaboration and Participation

STCs will collaborate with State and Federal agencies, as well as non-government partners, to continue an aggressive outreach campaign to increase enrollment of landowners in priority areas. State technical committees and the appropriate local work groups will be fully engaged in the initiative. Technical assistance information will be provided as consistently as possible among agencies. STCs will also work to ensure field staff are adequately trained and prepared with the tools needed to deliver effective assistance.

## **SECTION 2 – Threats and Resource Concerns**

In their status assessment of NEC as a candidate for listing under the Federal ESA, the USFWS determined the following were major threats to the survival of the species: degradation or loss of suitable habitat due to forest maturation or land use conversion, increased predation due to small parcel size and inadequate cover, decline in populations due to habitat fragmentation and barriers to dispersal, and potentially reduced habitat quality due to the proliferation of invasive plants. These threats identified by the USFWS fall under the following NRCS wildlife resource quality criteria:

- Fish and Wildlife – Inadequate Food
- Fish and Wildlife Inadequate Cover/Shelter

- Fish and Wildlife - Inadequate Space
- Fish and Wildlife - Habitat Fragmentation
- Fish and Wildlife – Imbalance Among and Within Populations
- Fish and Wildlife – Threatened and Endangered Species: Declining Species, Species of Concern
- Plant Condition – Noxious and Invasive Plants

### **Common Resource Settings and Strategies:**

The most common resource setting for the development and enhancement of NEC habitat is on abandoned farmland which has, or is reverting to, forest. Special care will be taken to identify seeps which provide a winter water source with the development of thick winter cover adjacent to these areas. Often these seeps are floristically bio-diverse, and typically include herbaceous plant species which are an important summer food source for NEC. Restoration of these areas is a high priority for our partnership, and a point of interest to many landowners.

A typical NEC contract involves cutting mature vegetation to develop thick young shrubland, regenerating forest, and developing a matrix of herbaceous vegetation and shrubland thickets in as large an area as feasible. This can be achieved by several scenarios and NRCS practices (identified in section 3).

Where suitable shrubland habitat is beginning to revert to mid-aged forest, typically a chainsaw is needed to cut vegetation which is over-matured and canopy closure is beginning to take place. In more mature forest settings, typically a feller buncher and whole tree chipper, or an excavator with a rotary cutter, is used to clear large openings to begin natural succession. Typical site selection for these projects is on low-quality timber stands with species such as Aspen (*Populus* sp.), Birch (*Betula* sp.), Red Maple (*Acer rubrum*) and White Pine (*Pinus strobus*). Over-mature shrub thickets of Alder (*Alnus* sp.), Sumac (*Rhus* sp.), Willow (*Salix* sp.) etc., can also be mechanically treated using similar techniques to increase vertical structure, stem densities and overhead cover. Prescribed burning of fire-maintained coastal plain communities is also an option in parts of the NEC's range.

Because of past plowing, land shaping and drainage, especially on enriched landscapes such as coastal plains and riparian areas, the seed bank in the soil is often depleted of native shrub species. Furthermore, planting of invasive species was common in these landscapes so the seed bank is often dominated by invasive species. At several sites in the region, seed and plantings are being used to help re-establish natural communities well-suited to the site and, where possible, re-establish declining natural communities associated with, but not limited to: Appalachian Oak/Pine/Hickory forests, Atlantic White Cedar (*Chamaecyparis thyoides*) Swamps, Swamp White Oak (*Quercus bicolor*), Black Gum (*Nyssa sylvatica*), and Pitch Pine (*Pinus rigida*) - Scrub Oak (*Quercus illicifolia*) Barrens. Offering community restoration objectives will broaden the conservation value of dollars spent on projects, attract more landowners, and increase partner involvement and capacity.

Dense thickets of invasive shrubs are often occupied by NEC within priority areas. In this situation, care must be taken to “phase” the restoration efforts in order to leave enough food and cover for NEC winter survival, while transitioning the parcel to native vegetation.

Other opportunities exist to restore farmed wetlands or seasonally wet areas with poor hay quality and low productivity. Often these areas are mowed seasonally to preserve the open nature of the grassland. In this setting, seeding, live stakes, and natural succession can be effective for developing overwintering habitat or corridors at least 100 feet wide which promote dispersal to other adjacent habitats. Commonly, these areas are invaded by Reed Canary grass (*Phalaris sp.*) which persists unmanaged for decades. Permitted herbicide applications and/or plowing are needed to begin the natural succession of the site.

Creating a “feathered edge” at least 50 feet wide, by cutting forest adjacent to farm fields, offers additional opportunities to connect habitat. Agricultural producers see a benefit in creating and maintaining shrubland habitat for wildlife along forested field edges because it reduces shading and improves crop yields.

Specific Resource Concern	Total Acres Needing Treatment	Total Acres To Be Treated with NRCS Funds	Dollars Needed to Achieve Treatment
Invasive Plants	3,000	2,000	\$1,500,000
Threatened and Endangered Species: Terrestrial Wildlife: Food, Water, Cover and/or Space	5,000	2,500	\$5,307,500

Based on NRCS’s NEC initiative projections of 2,500 acres treated and financial assistance needs (see Section 4), implementation of NRCS practices will cost approximately \$2,723 per acre. A typical NRCS conservation plan will require:

1. Brush management and/or herbaceous weed control to kill and control invasive plants.
2. Seeding desired native woody vegetation adapted to the site.
3. Cutting trees and shrubs (e.g., chainsaw, brushsaw, rotary mower, or feller buncher) to encourage dense forest regeneration and rehabilitation of shrublands.
4. Brush management to kill and control invasive plants.

## SECTION 3 – Core Conservation Practices and Extents

Conservation Practices	Practice Code	Unit	Amount
Early Successional Habitat Management and Development	647	Ac	2500
Brush Management	314	Ac	2000
Herbaceous Weed Control	315	Ac	500
Tree and Shrub Establishment	612	Ac	2500
Forest Site Preparation	490	Ac	1500
Restoration and Management of Declining Habitats	643	Ac	500
Upland Wildlife Habitat Management	645	Ac	2500

*Note several of the above practices can be used on the same acre depending if the site is currently in grass, forest, presence of invasive plants, or if habitats are being maintained or enhanced.*

### **Supporting Practices:**

- 655 Forest Trails and Landings
- 578 Stream Crossing
- 472 Access Control
- 386 Field Border
- 340 Cover Crop
- 422 Hedgerow Planting
- 666 Forest Stand Improvement
- 338 Prescribed Burning
- 528 Prescribed Grazing
- 391 Riparian Forest Buffer
- 644 Wetland Wildlife Habitat Management
- 657 Wetland Restoration

**SECTION 4 – Resources Requested and Other Contributions**

**Total Dollars Proposed and Received for NEC Conservation**

**\$6,807,500 WHIP Financial Assistance (FA) Requested for entire proposal**

**\$4,405,802 Partner Contributions to Date:**

NRCS Funded Contribution Agreements

\$75,000 2008 – ME Contribution Agreement USFWS-Wells Reserve  
\$30,000 2008- NH Contribution Agreement UNH-Extension  
\$30,000 2010- NH Contribution Agreement UNH-Extension

National Fish and Wildlife Foundation

\$21,316 2007  
\$245,946 2009  
\$99,116 2010

Maine Outdoor Heritage Fund

\$15,000 2008  
\$20,000 2010

USFWS

\$30,000 2005 – CCS Program  
\$12,725 2006 – CCS Program  
\$12,500 2008 – CCS Program  
\$38,400 2009 – CCS Program  
\$30,000 2010 – CCS Program  
\$25,000 2010 - Visitor Services  
\$50,000 2008 - Partners Program

\$35,000 NEAFWA – RCN - 2009

\$500,000 Wells Reserve, Defenders of Wildlife, Environmental Defense Fund,  
Wildlife Management Institute, Volunteers, MDIFW (In-Kind  
Services)

\$731,975 State Wildlife Grant NH, CT, MA, RI  
\$193,499 State Wildlife Agency Matching Funds (NH, MA, CT)  
\$115,800 Wildlife Management Institute Matching Funds

National Fish and Wildlife Foundation

\$40,000 2008  
\$300,000 2009  
\$300,000 2010

\$150,000	Wildlife Conservation Society
\$100,000	Open Space Institute
\$100,000	Partners for Fish and Wildlife
\$30,000	US Fish and Wildlife Service Coastal Program
\$925,525	University of Rhode Island Genetics Analysis
\$149,000	International Science Education Grant-USDA, University of Rhode Island- Genetics and Biodiversity

**Total Requested Dollars of WHIP Financial Assistance (FA)**

	<b>FY2011</b>	<b>FY2012</b>	<b>FY2013</b>	<b>FY2014</b>	<b>FY2015</b>
CT	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
MA	\$62,500	\$175,000	\$200,000	\$200,000	\$200,000
ME	\$250,000*	\$250,000	\$250,000	\$250,000	\$250,000
NH	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
NY	\$100,000	\$180,000	\$280,000	\$400,000	\$540,000
RI	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
<b>Total</b>	<b>\$1,062,500</b>	<b>\$1,225,000</b>	<b>\$1,380,000</b>	<b>\$1,500,000</b>	<b>\$1,640,000</b>

\* The Maine and New York STCs have requested \$70,000 of extra CTA TA money to help increase planning capacity for this initiative.

**SECTION 5 – Participant Information for Civil Rights and Outreach**

<b>Customers With Resource Problem</b>			<b>Expected Participants *</b>
	<b>Male</b>	<b>Female</b>	<b>Total</b>
Black (not Hispanic origin)	10	10	20
White (not Hispanic origin)	50	25	75
Asian/ Pacific Islander	2	2	4
American Indian/Alaska	1	1	2
Native(not of Hispanic origin)	0	0	0
Other (not of Hispanic origin)	2	2	4
Hispanic origin and any race	10	10	20
<b>Totals</b>	<b>75</b>	<b>50</b>	<b>150</b>

*\*Expected participants: assumes goal of 2,500 acres treated with an average size of 20 acres per participant.*

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## **SECTION 6 – Landowner Protections**

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To alleviate real or perceived threats to private landowner rights due to the presence of an at-risk, state-identified endangered species (ME and NH only), or candidate species for listing under the federal ESA, workgroups in New Hampshire and Maine realized a need to address such concerns. Currently, programmatic NEC Candidate Conservation Agreements with Assurances (CCAA) are being developed in Maine and New Hampshire under the authorities of the USFWS and ESA. A CCAA is intended to facilitate the conservation of candidate species by providing property owners incentives to implement practices beneficial to the target species. A CCAA then provides assurances to private landowners that the State and/or Federal government will not impose additional restrictions on land-use beyond those mutually agreed to under the CCAA should the species become federally listed. In NH and ME, where the NEC is already listed as endangered under state law, the CCAA becomes an effective means to provide landowners legal protection from the incidental taking (killing, harassing or harming) of NEC during prescribed and approved management activities. Enrollment in a CCAA is a voluntary act on the part of landowners, but it provides an incentive that may sway an otherwise cautious landowner to adopt practices beneficial to the NEC.

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## **SECTION 7 – Documentation of Locally Led Processes**

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### **Strategy:**

For NEC populations across their historic range to recover, partners agree that the approach must be threefold. First, continue surveying suitable habitat across the range to determine occupied landscapes. Second, continue outreach by working with local partners, land managers, conservation commissions, and other partners to target properties with the highest potential for restoration and management by using GIS technology, landscape modeling and local knowledge. And third, efforts should be coordinated with several agencies and partner organizations to have a robust ability to deliver restoration and management on a diverse landscape with a wide variety of ownerships.

### **Summary of the Local Processes:**

Beginning in 2007, numerous partner organizations, including NRCS, have worked in New England via meetings, teleconferences, field tours, and landowner informational meetings to develop techniques for targeting landowners in key landscapes and protocols for restoration. Hereafter is a summary timeline of key events which occurred with various state, local, and federal partners to bring us to where we are today.

## **Massachusetts**

The Massachusetts Division of Fisheries and Wildlife (DFW) and NRCS have formally established a partnership to increase capacity for NEC outreach and restoration as follows:

- April, 2009: Memorandum of Understanding between DFW and NRCS whereby DFW provides NRCS with biological technical assistance for planning and NRCS agrees to annually allocate \$500,000 of WHIP, WRP and/or EQIP financial assistance dollars to eligible applicants for implementing practices that will benefit at-risk species identified in the MA Wildlife Action Plan (WAP), including New England cottontail.
- September 2010: Cooperative Agreement between DFW - Natural Heritage and Endangered Species Program (NHESP) and NRCS whereby NHESP provides NRCS with technical assistance on developing a NEC ranking model, training on rare species and their habitats (including NEC) and review of conservation plans.

In addition, the USFWS, DFW and NRCS and been working together to conduct planning and outreach activities for NEC in Massachusetts. Some efforts that have occurred to date include:

- September 2009: Planning meeting addressing monitoring and management needs for NEC in the Mashpee area of Cape Cod. Attendees included NRCS, DFW, USFWS, Mass Military Reservation, MA Department of Conservation and Recreation, National Park Service and the Mashpee Wampanoag tribe.
- October 2009: Outreach meeting to club with large landholding in Western MA.
- October 2010: Outreach meeting to private land managers on the upper Cape
- November 2010: Outreach meeting to Cape Cod Compact of Land Trusts

## **Maine**

March 16, 2007 – NRCS hosted a meeting of interested parties at its Scarborough Service Center to discuss actions needed to conserve NRCS in Maine. Since the initial meeting, a NEC Work Group was formed and the work group has been meeting three to six times a year at NRCS's Service Center or the Wells National Estuarine Research Reserve. Numerous full workgroup meetings, subcommittee meetings, and teleconferences have also occurred. Partners in the workgroup keep growing, but major contributors include: NRCS, Environmental Defense Fund, USFWS's – Ecological Sciences, Partners Program, Rachel Carson National Wildlife Refuge, and Gulf of Maine Coastal Program, York Co. SWCD, Maine Department of Inland Fish and Wildlife, Maine Forest Service, Maine Assoc. of Conservation Districts, York and Cumberland Co. RC&D, American Forest Foundation, University of NH, and Maine Coast Heritage Trust.

Major outcomes of Maine's NEC workgroup to date include:

- NRCS developed an action plan for the group to outline goals, objectives and tasks and a timeline to guide workgroup activities,
- ME NEC Outreach Brochure and Sign published and distributed to > 1,200 landowners,
- WHIP – NEC habitat designated as an essential habitat under WHIP, a NEC WHIP AERT and 90% payment schedule was developed for use,

- [\*A Landowner's Guide to New England Cottontail Habitat Management\*](#) (Arbuthnot 2008) was published and distributed,
- Worked with the American Forest Foundation to write a white-paper titled *Exploit Market-based Incentives to Create and Manage Early Successional Habitats*,
- Numerous outreach workshops held with Maine Land Trusts, Private Landowners and Town Conservation Commissions,
- Developed a NEC habitat management pilot project on the Wells Reserve to test management strategies. The project was funded by NRCS's WHIP,
- USFWS's Partners for Fish and Wildlife Funded several NEC projects on private lands,
- 2008 – 2009 - Re-inventoried historic NEC occurrence sites and extensively surveyed new sites using pellet count methodologies and genetic testing to identify newly occupied sites. Volunteers were trained to help conduct surveys. These data were used for GIS Model development and outreach efforts,
- Worked with NH and the NFWF to develop a [\*New England Cottontail Business Plan\*](#) under their Keystone Species Initiative. This business plan has led to multiple NFWF grants (see Section 4 above), and is the main fund source for Maine's New England Cottontail Coordinator Position,
- Along with NH, have championed development of landowner protections in the form of a Candidate Conservation Agreement with Assurances
- With the aid of NH's Jeff Tash and Dr. Steve Fuller, the workgroup developed a Maine GIS Model to identify and rank NEC focal areas and created a parcel ranking process. Maine's Focal Area and Parcel Ranking Model and the Regional NEC Habitat and Parcel Model recently developed by Dr. Steve Fuller are currently being integrated for use in Maine,
- Actively prepared RFPs for federal and state grants to help achieve the goals and objectives of Maine's NEC initiative. See Section 4, above, for a list of grants received to date,
- Participated in NEC workshops and site visits organized by USFWS, NH and ME,
- Maine's NEC Coordinator has conducted, and continues to conduct, outreach to high ranking priority parcels identified by the ME GIS NEC Parcel and Focal Area Ranking Model, resulting in 5 WHIP applications. These parcels are in varying stages of NRCS's 9-step planning process.

## **New Hampshire**

**August 2008-** A Contribution Agreement between NRCS-NH, New Hampshire Fish and Game, and University of New Hampshire Cooperative Extension was enacted to develop a framework for the region to target landowners for conservation and development of NEC habitat. Several key outreach materials were developed. A summary of the accomplishments of these agreements are:

### **1. NEC Brochure and Outreach Materials**

- Brochure completed, printed 2,000 copies
- Distributed copies to Epping NRCS office, UNH Cooperative Extension County Foresters, NH Fish & Game

- Sent mailing to approximately 250 landowners in identified key landscapes.
- Published short NEC article for Wildlife Action Plan Newsletter
- Created NEC page on UNHCE website

## 2. Meetings

Date	Location	Number of Attendees	Description
9/22/08 to 9/24/08	Concord, NH		CCAA Training
10/23/2008	Concord, NH	14	NH NEC working group meeting
11/19/2008	Scarborough, Maine	10	ME NEC working group meeting
12/15/2008	Durham, NH	15	NH NEC working group meeting
2/3/2009	Durham, NH	7	Smaller NH working group meeting (UNHCE, NHFG, USFWS, NRCS)
3/26/2009	Maine		ME NEC working group meeting
4/2/2009	Concord, NH	8	WMI, NHF&G, USFWS, and UNHCE
4/30/2009	NH Audubon, Bellamy, NH		Site visit with NH Audubon at Bellamy property (UNHCE, NHFG, USFWS, NRCS, and NH Audubon)
5/14/2009	Maine		ME NEC working group meeting
6/17/2009	Maine		ME NEC working group meeting
10/07/09	Concord, NH	10	NH NEC meeting
10/19/09	Londonderry, NH	3	Pellet survey prep meeting
11/6/09	Concord, NH	6	NH NEC meeting (pellet surveys)
11/13/09	Durham, NH	3	Pellet survey meeting
12/21/09	Newmarket, NH	3	Discuss collaboration with TNC

## 3. Organized Pellet Workshops

- Put out requests for volunteers through website, and various publications.
- Organized a list of, and communicated with interested volunteers for pellet survey workshop held in fall 2009.
- Discussed need for volunteers for pellet surveys with Adrienne Kovach (UNH).
- Organized workshop for volunteers interested in assisting with pellet surveys.
  - December 19, 2009- Durham, NH (18 attendees).

## 4. Organized Interagency Workshop

- Two NEC Habitat and Management workshops targeted landowners and natural resource professionals (including NRCS, and NHDES staff).
  - April 1, 2009- Londonderry, NH (26 attendees).
  - April 10, 2009- Durham, NH (33 attendees).

- Provided a Powerpoint presentation to NH Golf Course Superintendent's Association (25 attendees).

#### **5. Pellet Surveys**

- Prepared pellet surveys in both 2008 and 2009 through organization of meetings, creation of maps, and facilitated communications between various partnering agencies.

#### **6. Gathered Landowner information on 5 key landscapes**

- Obtained tax maps, and landowner contacts for landowners in 7 key landscapes.
- Met with conservation commissions in target area towns.
- Met with Strafford Rivers Conservancy in Dover, NH.

#### **7. Worked with Landowners**

- Outreach to 50 landowners through meetings/workshops, phone calls, and site visits.

**2009- State Wildlife Grant (SWG)** funded to develop coordination, increase capacity, and build an organizational structure for partner organizations to recover the species in all 6 states across the region.

**January 2010-** USFWS Conference Call to facilitate planning at the regional level. Discussed building capacity and hiring new planners and developing a standard planning template based on current conditions.

**February 2010-** NEC land conservation meeting with various partners (Trust for Public Lands, The Nature Conservancy, Wildlife Management Institute, New Hampshire Fish and Game, Strafford Rivers Conservancy, and NRCS). Discussion included targeting key landscapes for NEC and land protection, including abandoned ditched farmlands which can be restored to develop critical habitat.

**June 2010-** Maine and New Hampshire two day field tour: Several partner organizations, including NRCS Plant Materials Center staff, toured several planned and installed sites across the range in Maine and New Hampshire. During the tour, several challenges to creating NEC habitat were discussed including the dominance of invasive plants both living and in the seed bank. Progressive techniques to restore landscape floristic biodiversity via direct seeding both in the forest and in grassland settings are being developed. The group agrees that, in addition to our ability to develop NEC habitat, the opportunity exists to restore landscapes on enriched soils which have a long agricultural history in New England (20 attendees).

**June 2010-** Regional Meeting at USFWS Hadley, MA. All 6 States were represented with members from NRCS, State Wildlife Agencies, State Regulatory Agencies, Wildlife Management Institute, US Fish and Wildlife Service, University Faculty, Cooperative Extension, Defenders for Wildlife, Environmental Defense Fund and The Association of



Fish and Wildlife Agencies. Discussions at this meeting involved coordination between various agencies, how best to deliver a consistent message to landowners in priority areas, and how to fund projects efficiently with various matching funds. Dr. Fuller presented his parcel and landscape level GIS planning tool. Maine and New Hampshire both provided updates on landowner targeting efforts. Discussion focused on how to streamline the chain of events between initial contact with the landowner and project implementation. A common roadblock is the landowners' reluctance to pay as little as 10% of the total project costs due to the fact that shrublands have a lower economic gain than forest or grassland. To overcome this hurdle, the group discussed various funding sources available and the need to work together to reduce landowner time and expense to increase recruitment.

**September 2010** to present – NRCS, USFWS and State Wildlife Agencies have been exploring the feasibility of elevating NEC conservation that have been ongoing in Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, and New York to varying degrees to a more unified Regional NEC initiative. This proposal is an extension of this effort.

**November 2010-** NH NEC meeting with members of the University of Rhode Island's Husband Genetics Lab to discuss continued pellet and trapping surveys and strategies for preserving genetic diversity between distinct population segments, if and when rabbits are to be moved into captivity for breeding and re-released into suitable habitat. Discussions also focused on how members of conservation commissions, conservation districts and other partners can bring projects to coordinators as well as how to most efficiently work with landowners, based on land type, to complete applications, plan writing, project implementation, and payment.

## Exhibit 1



Figure 1: Location of Historic & Current NEC Populations

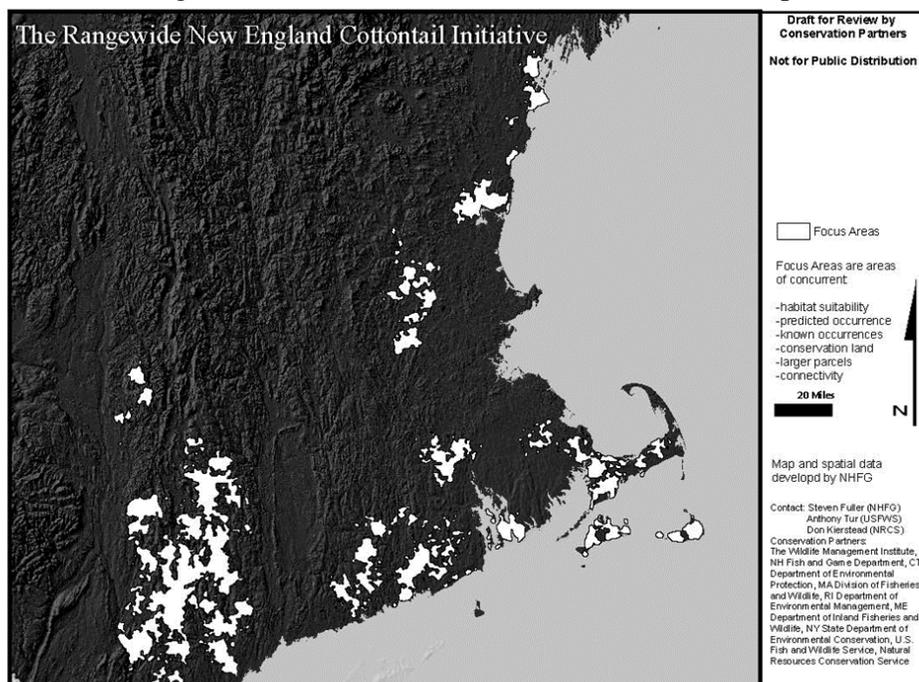


Figure 2. NEC Range-wide Focal Area Map (Dr. Steven Fuller)

## Exhibit 1 (Continued)

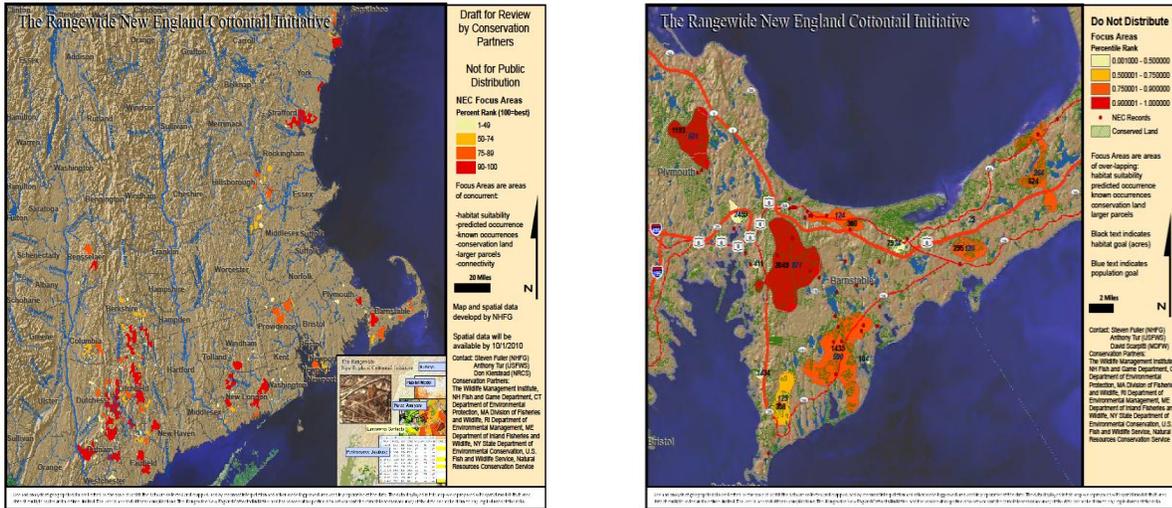


Figure 3 (left): Prioritized range-wide focus areas in ME, NH, MA, CT, RI and NY.  
 Figure 4 (right): Cape Cod, MA used as an example of a regional priority area ranked by habitat suitability (Dr. Steven Fuller)

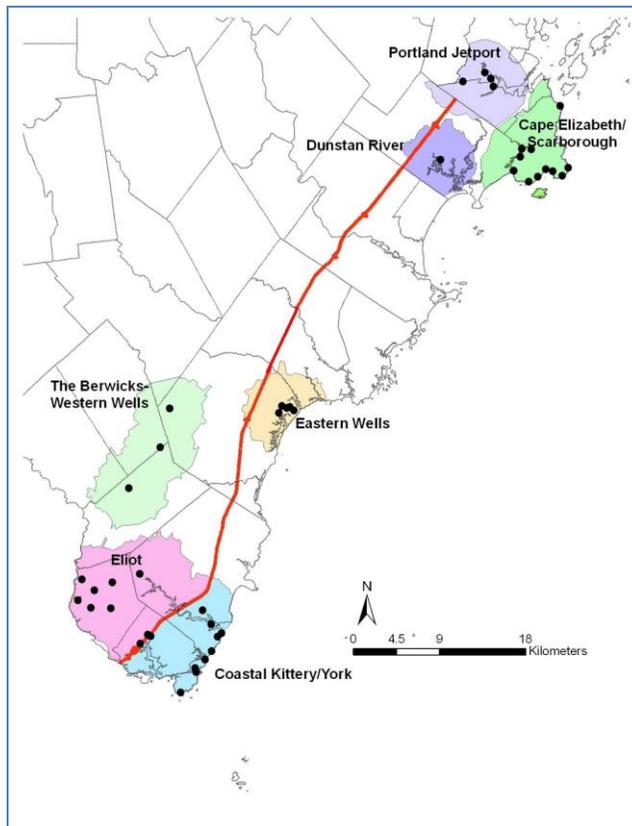


Figure 5: Maine NEC Focal Areas with recent known locations as black dots (Kelly Boland, EDF)

## Exhibit 2

### SPECIES OF GREATEST CONSERVATION NEED IN NEW ENGLAND THAT REQUIRE YOUNG FOREST AND SHRUBLAND HABITATS

N	SPECIES	Scientific Name
1	American Kestrel	<i>Falco sparverius</i>
2	American Redstart	<i>Setophaga ruticilla</i>
3	American Woodcock	<i>Scolopax minor</i>
4	Barn Owl	<i>Tyto alba</i>
5	Black Racer	<i>Coluber constrictor</i>
6	Blue-winged Warbler	<i>Vermivora pinus</i>
7	Broad-Winged Hawk	<i>Buteo platypterus</i>
8	Brown Thrasher	<i>Toxostoma rufum</i>
9	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>
10	Common Nighthawk	<i>Chordeiles minor</i>
11	Copperhead	<i>Agkistrodon contortrix</i>
12	Eastern Hognose Snake	<i>Heterodon platirhinos</i>
13	Eastern Kingbird	<i>Tyrannus tyrannus</i>
14	Eastern Pipistrelle	<i>Pipistrellus subflavus</i>
15	Eastern Red Bat	<i>Lasiurus borealis</i>
16	Eastern Screech-owl	<i>Otus asio</i>
17	Eastern Small-footed Myotis	<i>Myotis leibii</i>
18	Eastern Smooth Green Snake	<i>Opheodrys vernalis</i>
19	Eastern Towhee	<i>Pipilo erythrophthalmus</i>
20	Field Sparrow	<i>Spizella pusilla</i>
21	Golden-Winged Warbler	<i>Vermivora chrysoptera</i>
22	Gray Catbird	<i>Dumetella carolinensis</i>
23	Great Horned Owl	<i>Bubo virginianus</i>
24	Hoary Bat	<i>Lasiurus cinereus</i>
25	Hooded Warbler	<i>Wilsonia citrina</i>
26	Indigo Bunting	<i>Passerina cyanea</i>
27	Little Brown Myotis	<i>Myotis lucifugus</i>
28	Mourning Warbler	<i>Oporornis philadelphia</i>
29	New England Cottontail	<i>Sylvilagus transitionalis</i>
30	Northern Bobwhite	<i>Colinus virginianus</i>
31	Northern Harrier	<i>Circus cyaneus</i>
32	Northern Long-eared Bat	<i>Myotis septentrionalis</i>
33	Prairie Warbler	<i>Dendroica discolor</i>
34	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>

35	Rough-legged Hawk	<i>Buteo lagopus</i>
36	Ruby-throated Hummingbird	<i>Archilochus colubris</i>
37	Ruffed Grouse	<i>Bonasa umbellus</i>
38	Savannah Sparrow	<i>Passerculus sandwichensis</i>
39	Silver-haired Bat	<i>Lasionycteris noctivagans</i>
40	Snowy Owl	<i>Nyctea scandiaca</i>
41	Southern Bog Lemming	<i>Synaptomys cooperi</i>
42	Spotted Turtle	<i>Clemmys guttata</i>
43	Whip-poor-will	<i>Caprimulgus vociferus</i>
44	White-eyed Vireo	<i>Vireo griseus</i>
45	White-throated Sparrow	<i>Zonotrichia albicollis</i>
46	Willow Flycatcher	<i>Empidonax traillii</i>
47	Wood Turtle	<i>Glyptemys insculpta</i>
48	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>
49	Yellow-breasted Chat	<i>Icteria virens</i>
50	Canada Warbler	<i>Wilsonia canadensis</i>
51	Rufous-sided Towhee	<i>Pipilo erythrophthalmus</i>
52	Short-eared Owl	<i>Asio flammeus</i>
53	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>
54	Northern bog lemming	<i>Synaptomys borealis</i>
55	Red bat	<i>Lasiurus borealis</i>
56	Small-footed bat	<i>Myotis leibii</i>
57	Big brown bat	<i>Eptesicus fuscus</i>
58	Common gray fox	<i>Urocyon cinereoargenteus</i>
59	Eastern Rat Snake	<i>Elaphe obsoleta</i>

Breeding Range Density Maps: Dr. John Sauer, U.S. Geological Survey  
Population Trend Graph: Kelley, J.R., Jr., and R. D. Rau. 2005. American woodcock population status, 2005. U.S. Fish and Wildlife Service, Laurel, Maryland. 15pp.