FEASIBILITY STATEMENTS FOR NEW ENGLAND COTTONTAIL GOALS & OBJECTIVES

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<u>Population Goal:</u> Ensure the long-term viability of the New England cottontail in Maine, and expand its current range throughout its former range[1] in Maine.

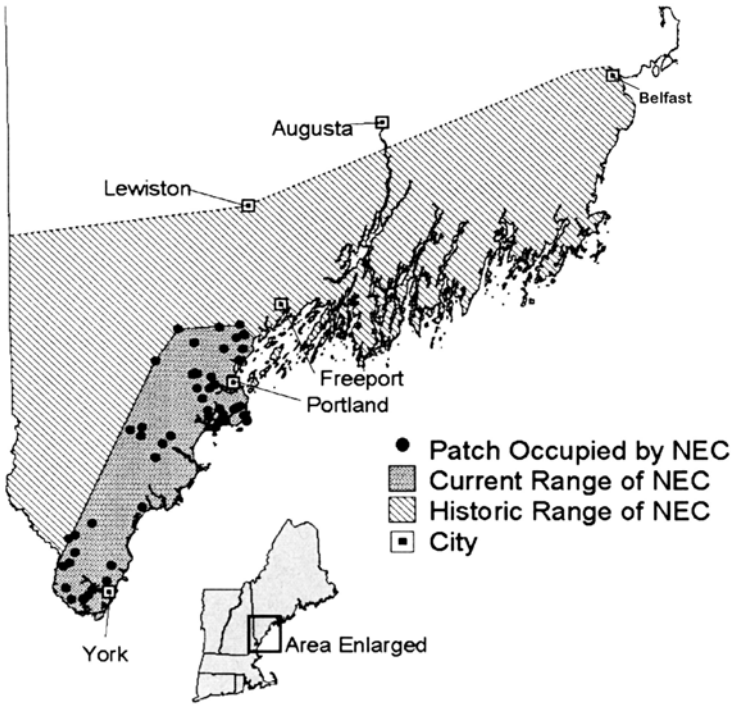

Figure 1. Historical (circa 1960) and current ranges of New England cottontails in Maine. Current range encompasses approximately17% of the historical range.

[1] The former range of New England Cottontail in Maine refers to the land area in Maine that had historically been occupied by New England Cottontail (Fig.1).

Population Objective 1: By 2016, maintain and/or create a minimum of 18 core populations[2] (with densities of 1 rabbit / 2.5 acres) in habitat patches ≥ 25 acres, each connected to 2 to 5 satellite patches within ½ mile of the core area.

Desirability: This objective is desirable because increasing the number of core populations of New England cottontail (NEC) will increase the stability of the population and reduce the probability that local disturbance or disease would affect a significant segment of the population. Furthermore, insuring that these core populations have connectivity to other suitable habitat improves the chances that these core populations will perpetuate.

Feasibility: To achieve this objective, MDIFW will have to trap and move rabbits to at least 12 unoccupied core areas. This will involve identifying potentially suitable parcels of land 25 acres or more in size that have other suitable habitat nearby, reaching long-term agreements with landowners to manage their land for NEC, and developing a trap and transplant program to move NEC to these sites. In all likelihood, these core areas will not come "ready-made" for NEC, but will require habitat alterations and a period of regrowth to achieve the habitat conditions desired for NEC core habitat. Consequently, the feasibility of this objective primarily depends on Habitat Objective III being met (see Feasibility of Habitat Objective III) and whether we can successfully move NEC to new habitats.

The number of rabbits needed and available for 12 trap-and-transfer programs is unknown. If sufficient rabbits cannot be obtained, the repopulation of the core areas will be delayed. One way to increase the number of rabbits available for a trap-and-transplant program would be through captive breeding. However, captive breeding programs are expensive, logistically difficult, and may not be feasible for MDIFW to conduct.

Although we have not attempted a trap and transplant program with NEC in Maine, the success of translocation programs for other species of cottontail has been good. Survival rates for Lower Keys marsh rabbits (*Sylvilagus palustris hefneri*) that have been translocated to suitable island habitats have been high (81% to 100%); however, the number of predators on these islands is much lower than in southern Maine. Studies on the translocation of the riparian brush rabbit (*S. bachmani riparius*) indicated that when some predator control is used, annual survival rates of 49% can be obtained. The annual survival rate for *S. bachmani* is similar to what Barbour and Litvaitis observed for adult NEC living in large habitat patches (i.e., 45%). However, in poor sites, Barbour and Litvaitis observed that annual survival for adults dropped to 15%.

[2] Currently there are 6 sites in Maine that meet the criteria as core populations. The public working group's intent was to triple the number of core areas in the state.

Additional funds will be needed for the trap and transplant program and for a companion study that would monitor the success of the transplant program. The monitoring program would likely involve radiocollaring rabbits to monitor their survival, reproduction, and movements in their new surroundings. Such a monitoring program may be best accomplished as a Masters level graduate study.

Funding for NEC restoration projects should be highly competitive with other wildlife grant requests. Currently, MDIFW regularly receives funding from the USFWS's State Wildlife Grants (SWG) program. Funding priorities for this program are determined to a large extent by the priority ranking a species received in Maine's Comprehensive Wildlife Conservation Strategy (CWCS). New England cottontail received the highest prioritization ranking in Maine's CWCS.

At current staffing levels, it will be difficult for Department personnel to devote sufficient time to the conservation of NEC. Achieving this objective will require considerable field efforts (Wildlife Management Section staff) and coordination of field and monitoring efforts (Wildlife Resource Assessment staff). Personnel time will likely be the factor that hinders progress on this objective, unless sufficient funding is found to bring on temporary staff to work on this project.

Whether or not we will achieve this objective in 10 years will be dependent upon (1) the initial suitability of the habitat for NEC, and (2) our initial success in translocating NEC to new habitats. As mentioned earlier, substantial habitat alteration may be needed to make core habitats suitable for NEC. If this is the case, vegetation may need 5 years to become dense and high enough to provide good habitat for NEC. Thus, some sites may require time to regenerate prior to moving NEC into the site.

As with any new project, it is usually best to start out small, evaluate whether the proposed methods work, and then proceed to full-scale implementation. We suspect that it may take 2 years to identify 3 or more landowners that are willing to manage 25 acres or more of their land as habitat for NEC, procure incentive monies for these landowners, obtain grant monies for the graduate project, and bring on a graduate student. If initial translocations attempts were successful, the graduate student would be able to make recommendations on translocation techniques in 2 to 3 years. That would leave the Department 5 years to complete land management agreements and move NEC to these new habitats.

<u>Capability of the Habitat</u>: The capability or availability of habitat needed to achieve this objective is unknown at this time. Suitable habitat may need to be created through land management efforts.

Possible consequences: Meeting this objective should create sufficient local populations of NEC to sustain the statewide population of NEC. However, sustaining these local populations will require the continued cooperation of landowners to maintain shrubby habitat for NEC for the foreseeable future. For this to occur, landowner incentive programs will need to remain in place or be strengthened. Alternatively, the state could purchase a number of these core areas and perpetually manage these areas for NEC.

Landowners may object to establishing new populations of NEC on or near their land, because they are concerned that the presence of a species that may be state and/or federally listed as a Threatened or Endangered species will jeopardize any plans they may have for the land. To prevent this from occurring, we will try to inform landowners about Candidate Conservation Agreements with Assurances (CCAA). These agreements allow landowners to voluntarily participate in NEC conservation efforts, and avoid some of the land-use restrictions that might be imposed should the candidate species become listed.

Population Objective 2: By 2016, establish at least two of the core populations in each of the following counties: York, Cumberland, Androscoggin, and Sagadahoc County.

Desirability: This objective is desirable in that increasing the range of NEC will increase the stability of the population and reduce the danger of losing significant amounts of the population due to local disturbance. In addition, establishing NEC in less developed parts of their former range may increase the chances of natural expansion into unoccupied habitat. The counties chosen for this objective are representative of the core of the former range of NEC (Fig. 1). Therefore, the probability of successfully establishing NEC in these counties may be higher than in the more peripheral counties within their former range.

Feasibility: The feasibility of this objective is similar to the feasibility of Population Objective 1, with the added constraint that core areas need to be established in specific counties. Because at least 2 sites must be established in each of these 4 counties, more suitable and/or less expensive sites may be passed up for core areas if only limited resources are available for acquiring conservation lands for NEC. For example, it may be less expensive to establish 4 core areas in Cumberland County than to establish 2 core areas in Androscoggin County.

This objective will require moving rabbits into a minimum of 4 sites to create new populations. The feasibility of establishing at least two core areas in each of York and Cumberland counties may be high, given that there are already several large blocks of habitat with NEC living on them in these counties. However, managing and setting aside these blocks of land will be

entirely dependent upon whether landowners are willing to cooperate. Similarly, this objective can only be met if suitable habitat is available in Androscoggin and Sagadahoc Counties.

Capability of the Habitat: The capability or availability of habitat needed to achieve this objective is unknown. Suitable habitat may need to be created through land management activities.

Possible consequences: The consequences of attempting to achieve this object are similar to those outlined for Population Objective 1. Establishment of core areas in a number of counties would help ensure that not all of the NEC population would be affected by local habitat changes or other mortality factors.

Habitat Goal: Maintain current New England cottontail habitat at or near existing sites, create new habitat throughout its historic range in Maine, and maintain or create connectivity between habitat patches.

Habitat Objective 1: By 2009, evaluate the existing 53 sites for New England cottontail, and begin negotiations with landowners to manage the most viable sites.

Desirability: This objective is desirable in that it is one of the first steps in restoring NEC to its former range in Maine. Managing and conserving occupied habitat may be the most efficient means to conserve NEC in Maine.

Feasibility: Our Department has already identified landowners that have NEC on their property; therefore, the first part of this objective has already been completed.

Although it is certainly feasible to begin negotiations with landowners within 3 years to manage the most viable sites for NEC, successfully concluding multiple land negotiations may take longer.

Capability of the Habitat: Not applicable.

Possible consequences: Landowners may not be aware of the presence or status of NEC and may become concerned that the presence of a species that may be state and/or federally listed as a Threatened or Endangered species will jeopardize any plans they may have for their land. In this case, they may take steps to eliminate the habitat or be unwilling to manage for NEC. To prevent this from occurring, we will try to inform landowners about CCAAs. These agreements allow landowners to voluntarily participate in

NEC conservation efforts, and avoid some of the land-use restrictions that might be imposed should the candidate species become listed.

Habitat Objective 2: Of the 53 current New England cottontail sites, identify and conserve those habitats and corridors that contribute to the 18 core areas and satellite habitat patches identified in Population Objective 1 by 2011.

Desirability: This objective is desirable in that managing and conserving occupied habitat may be one of the most efficient ways to meet the habitat needs of NEC in Maine. Without active conservation and management, existing sites are likely to be lost to development or forest succession. Maintaining early successional habitat will also provide habitat for other species (e.g., Blue-winged Warbler, Brown Thrasher) that rely on early successional habitat. These sites will contribute to open space and could provide recreational opportunities such as wildlife observation or trails near developed areas.

Feasibility: The feasibility of achieving this objective will ultimately depend on land availability and the willingness of landowners to manage their lands for NEC. This objective stipulates that of the 53 existing sites, we identify and conserve those sites that would contribute to the 18 core areas needed to achieve Population Objective 1. Not all of the core areas will be associated with the 53 existing sites for NEC. Therefore, only a fraction of the habitats associated with the 18 core areas will be conserved under this objective.

To accomplish this objective in 5 years, MDIFW will have to partner with other organizations (e.g., The Nature Conservancy, Maine Coast Heritage Trust) to conserve these lands. Sufficient personnel are not currently available in the MDIFW's Mammal Group to achieve this objective within the specified time frame. Consequently, we would have to find willing partners and obtain funding to achieve this objective. Monetary incentives will be needed to compensate landowners for the periodic costs of setting back succession on these sites.

Fortunately, there are a number of incentive programs for landowners willing to manage their land for NEC. The Wildlife Habitat Incentives Program [WHIP] of the Natural Resources Conservation Service could be used to recruit landowners to manage their land as early-successional habitat. Through WHIP, the Natural Resources Conservation Service provides technical assistance and up to 75 percent cost-share assistance for the improvement of fish and wildlife habitat. A recent modification of the WHIP program provides enhanced cost sharing to landowners who are willing to commit to a 15-year management program directed towards developing essential plant and animal habitats.

Other incentive programs include the Partners for Fish and Wildlife (PFW) and the Landowner Incentive (LIP) programs of the USFWS. The PFW program

provides cost-sharing and technical assistance to non-federal landowners, including private landowners, local governments, Native Americans, educational institutions, and other entities. One of the priority criteria for the PFW program is that private lands be close to a national wildlife refuge, such as Rachel Carson National Wildlife Refuge. The primary objective of the LIP program is to establish incentive programs that will protect or restore habitats on private lands that benefit species deemed to be at risk by the USFWS.

Capability of the Habitat: Some habitats occupied by NEC are too small or too disconnected from other habitats to contribute to the long-term survival of the NEC. Concentrating efforts on the most viable sites will be more effective than trying to work with all occupied sites. Rabbits in habitat patches with little long-term potential may be moved to other areas where connectivity between suitable habitats is high and there is a higher probability of long-term survival for the rabbits.

Possible consequences: Meeting this objective would help stabilize or increase the statewide population of NEC. Positive relationships with landowners may foster other cooperative efforts to manage NEC or other wildlife populations. Mammal Group staff will have to work closely with other biologists to ensure that the needs of grassland birds (e.g., Bobolink, Field Sparrow, Savannah Sparrow) and other early successional species are not compromised by NEC habitat creation. A variety of early successional conditions could be accommodated if a rotational scheme is used to always keep a proportion of the site's vegetation in various stages of succession.

Habitat Objective 3: By 2016, create and/or conserve additional sites to compliment existing sites to ensure that Population Objective 1 is met.

Desirability: This objective is desirable in that it would create sufficient habitat to stabilize or increase the statewide population of NEC. In addition, increasing the number of sites that can maintain populations of NEC will reduce the danger of losing significant amounts of the cottontail population and/or habitat due to local disturbances.

Meeting this objective will provide habitat for other species (e.g. black racer, Blue-winged Warbler, Brown Thrasher) that rely on early successional habitat.

These sites will contribute to open space, could preserve coastal views, and may provide opportunities for wildlife observation.

Feasibility: As with the previous habitat objective, the feasibility of achieving Objective 3 will ultimately depend on land availability and the willingness of landowners to manage their lands for NEC. Habitat Objective 3 requires that

we acquire and manage at least 12 additional core areas. This will require landowner cooperation, the purchase of conservation easements, or the outright purchase of land. The cost of purchasing and managing land for this objective may limit the feasibility of this goal. Land prices vary widely in southern Maine, ranging from $3,000 to $60,000+ per acre for undeveloped land. Typically, easements on land may cost 20% to 50% of the total value of the land. At a bare minimum, we will need to conserve over 600 acres of land. If we only had to pay $5,000 per acre to acquire land for NEC conservation, we would need $3 million to cover land acquisition costs. Therefore, the quickest and least expensive way to conserve land for NEC is to place as many of these core areas as possible within existing conservation lands.

The feasibility of acquiring funds for land acquisition and management is discussed in Habitat Objective 2. Currently, MDIFW regularly receives funding from the USFWS's State Wildlife Grants program for various wildlife management and research projects. Species are selected to receive grant money based, in part, on the priority ranking they receive in Maine's CWCS. New England cottontail received the highest prioritization ranking in Maine's CWCS. Therefore, funding for various management activities may be available for NEC from this program.

As mentioned earlier, substantial habitat alteration may be needed to make core habitats suitable for NEC. If this is the case, vegetation may need 5+ years to become dense and high enough to provide good habitat for NEC.

Capability of the Habitat: The capability or availability of habitat needed to achieve this objective is unknown. Suitable habitat may need to be created through land management activities.

Possible consequences: The possible consequences for meeting this objective are the same as those identified for Habitat Objective 2.

Habitat Objective 4: By 2016, test and evaluate methods of habitat management for New England cottontail.[3]

Desirability: It would be very desirable to give land owners/managers prescriptions for managing habitat under a variety of situations (e.g., a large block that can be managed in rotation for a variety of species vs. a small block managed strictly for rabbits). There are a number of unanswered questions concerning the value of non-native invasive species for NEC, and how to remove these non-native species without jeopardizing the NEC population. This objective may also address these questions.

[3] It was suggested by the public working group that this project could be done on the Scarborough Marsh Management Area.

Feasibility: Parts of this objective may be best accomplished as one or more graduate studies. In addition to any graduate studies, this objective may require a habitat manipulation study that may take 10+ years to fully evaluate. If this is the case, it is suggested that this study be carried out on state or private conservation lands where habitat conditions could be closely controlled and monitored. Funding for these programs should be available from some of the grant programs discussed above.

Capability of the Habitat: Not applicable.

Possible consequences: Achieving this objective should improve our knowledge of how to manage early successional habitats for NEC and other wildlife species. Results from these studies will be shared with landowners and will hopefully lead to the creation and maintenance of additional suitable habitat for NEC.

Because some of these tests will likely have to be done on areas that are included in Habitat Objective 3, less than optimal management may occur as methods are tested.

Habitat Objective 5: By 2016, permanently conserve 12 of the 18 core areas to benefit New England cottontails and other early successional species.

Desirability: This objective is desirable in that increasing the number of sites under permanent conservation agreements will increase the stability of the population and reduce the danger of losing significant amounts of the population and/or habitat due to changes in land ownership. Creating additional conservation areas with early successional habitat will also provide habitat for other wildlife species (e.g., Blue-winged Warbler, Brown Thrasher).

Feasibility: The cost of purchasing and managing land for this objective may limit the feasibility of this goal. As stated earlier, the cost of purchasing conservation easements or outright purchase of land could exceed $3 million if only private land is used to create the 18 core areas. Therefore, it is essential to try to locate as many of the core areas on existing conservation lands as possible. Potential funding sources that could be used to achieve this objective are listed under Habitat Objective 2.

Capability of the Habitat: The capability or availability of habitat needed to achieve this objective is unknown. Suitable habitat may need to be created through land management activities.

Possible consequences: The possible consequences for this habitat objective are the same as those identified for Habitat Objective 2.

Outreach Goal: Work with landowners and the public to conserve and manage habitat for New England cottontail.

Outreach Objective 1: By June 30, 2006, develop and distribute educational materials to all towns having New England cottontail habitat (e.g., brochures, posters, press releases, articles in newsletters, and conference presentations). Inform the general public, landowners with New England cottontail habitat, and town officials about the importance and management of early successional habitats for New England cottontails and other early successional species.

Desirability: This objective is desirable in that informing the public about the plight of New England cottontails is expected to increase support for conserving habitat for this species. Along with increased support for conserving habitat for NEC, people may better appreciate the importance of early successional habitat for a variety of wildlife species.

Feasibility: It should be feasible to begin distribution of educational materials on NEC habitat needs and management by June 2006.

Capability of the Habitat: Not applicable.

Possible consequences: If the public is better informed about the plight of NEC, they may be more willing to conserve habitat for NEC, and more willing to support conservation efforts for NEC and other early successional species.

Outreach Objective 2: By 2009, develop and deliver landowner incentive programs to promote management of NEC on private and public lands. This should include information about landowner protection programs (e.g., Candidate Conservation Agreements with Assurances).

Desirability: This objective is desirable in that most landowners will need monetary incentives to conserve and manage habitat for NEC. Landowner protection programs, such as the CCAA, are desirable because NEC are being considered for federal listing as an endangered or threatened species. Without CCAAs, landowners may be reluctant to conserve NEC habitat out of fear that the commercial or recreational value of their land will be permanently lost.

Feasibility: By 2009, it should be possible to develop the necessary materials and deliver them to interested landowners.

Capability of the Habitat: Not applicable.

Possible consequences: Hopefully, the outcome will be that a number of landowners will be willing to either manage their lands for NEC, set up conservation easements, or sell their land for NEC conservation.

Outreach Objective 3: By 2007, develop an educational program about the dangers of importing eastern cottontail rabbits

Desirability: This objective is desirable in that it may reduce the likelihood that someone would release eastern cottontails in Maine. Because NEC and eastern cottontail often utilize the same habitat, keeping eastern cottontail rabbits out of the state would ensure that the two species do not compete for limited habitat.

Feasibility: An educational program may include flyers, presentations, and web-site information. It should be feasible to produce this information by 2007. We can utilize organizations, such as ReMaine Wild (state wildlife rehabilitators organization), the state chapter of The Wildlife Society, Maine Audubon, Sportsman's Alliance of Maine, hunting clubs, and other organizations to distribute information to their members and the general public.

Capability of the Habitat: Not applicable

Possible consequences: Hopefully, as the result of this educational effort, people will not introduce eastern cottontails into Maine. In addition, people that receive this information may be more likely to report sightings of animals they suspect are eastern cottontails and individuals they suspect are illegally introducing eastern cottontails to the state.