

Chapter 1



USFWS

Crooked Pond on Massasoit National Wildlife Refuge

The Purpose of, and Need for, Action

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Introduction

Massasoit National Wildlife Refuge (NWR; refuge) is located in Plymouth, Massachusetts. The U.S. Fish and Wildlife Service (USFWS; Service) acquired the land for the refuge in 1983 to conserve the federally endangered northern red-bellied cooter. In addition, it protects other wildlife and plant species including rare moths and other native pollinators, migratory songbirds, and small mammals. The 209-acre refuge is comprised of pine-oak upland forest with varying understory, and wetlands, including open water coastal plain “kettle” ponds and associated shoreline habitats. The refuge includes three parcels: the 184-acre Crooked Pond parcel which abuts Myles Standish State Forest (MSSF), and two smaller parcels located on Island Pond (15 acres) and Hoyt Pond (10 acres; maps 1-1 and 1-2). Massasoit NWR is located within an area designated as critical habitat for the northern red-bellied cooter. It is one of eight refuges that comprise the Eastern Massachusetts National Wildlife Complex (Refuge Complex), which is headquartered in Sudbury, Massachusetts (map 1-3).

This draft Comprehensive Conservation Plan and Environmental Assessment (draft CCP/EA) for the refuge includes two documents required by Federal law as follows:

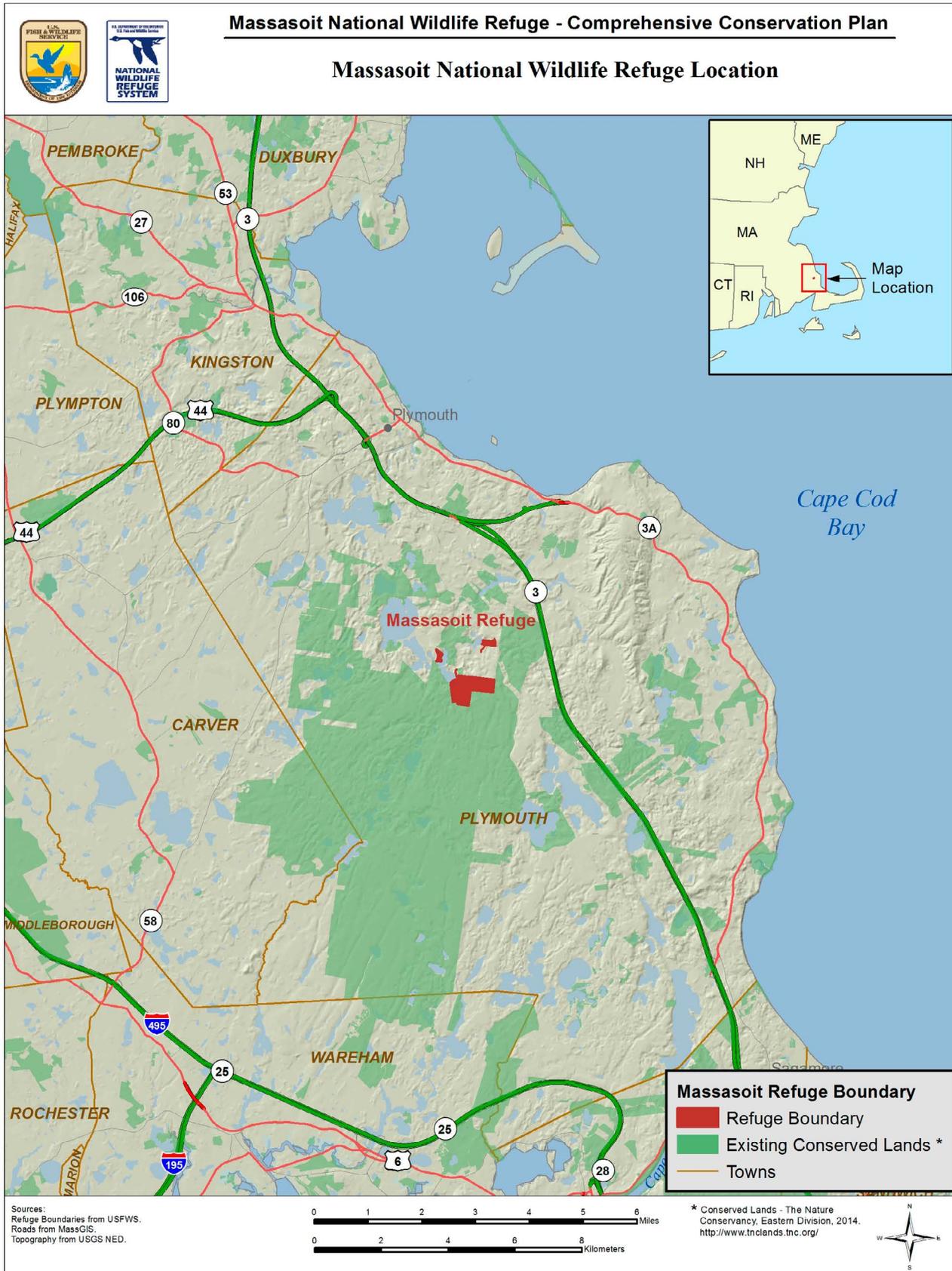
- A draft CCP, required by the National Wildlife Refuge System (Refuge System) Administration Act of 1996, as amended by the Refuge System Improvement Act of 1997 [Public Law (PL) 105-57; 111 Stat. 1253], as amended; (Improvement Act).
- An EA, required by the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 *et seq.*, 83 Stat. 852), as amended.

Following public review of this draft CCP/EA, the Service’s Northeast Regional Director will select an alternative to implement based on the Service and Refuge System missions, the purpose for which the refuge was established, other legal mandates, and public and partner comments to this draft CCP/EA. The alternative selected could be the preferred alternative presented in this draft CCP/EA, the no-action alternative, or a combination of actions from these alternatives. The final decision will identify the desired combination of species protection, habitat management, public use, and administration of the refuge. The final CCP will guide refuge management decisions over the next 15 years to promote understanding of, and support for, refuge management among State agencies in Massachusetts, Tribal governments, our conservation partners, local communities, and the public.

Chapter 1 “The Purpose of, and Need for, Action,” explains the purpose and need for preparing a draft CCP/EA, and sets the stage for five subsequent chapters and six appendices. Specifically, chapter 1:

- Defines the planning analysis area.
- Presents the Service mission, policies, and mandates affecting the development of the plan.
- Identifies other conservation plans used as references.
- Highlights the purpose for which the refuge was established and its land acquisition history.
- Clarifies the vision and goals that drive refuge management.
- Describes refuge operational (or “stepdown”) plans.

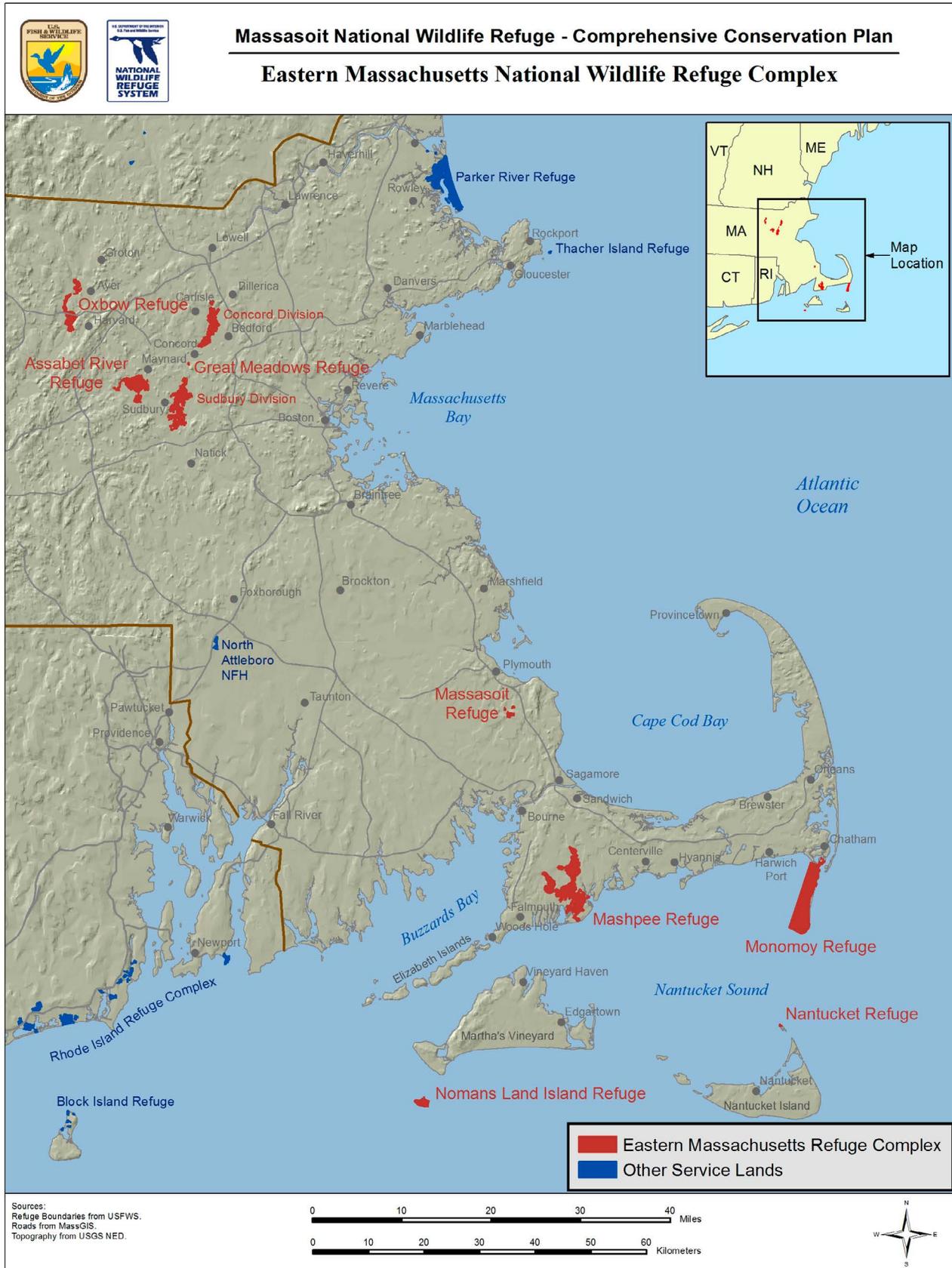
Map 1-1. Massasoit National Wildlife Refuge Location



Map 1-2. Massasoit National Wildlife Refuge Boundaries



Map 1-3. Eastern Massachusetts National Wildlife Refuge Complex



- Describes the planning process and its compliance with NEPA regulations.
- Identifies public and partner issues or concerns that surfaced as the plan was developed.

Chapter 2, “Affected Environment,” describes the physical, biological, cultural, and socioeconomic environments of the refuge.

Chapter 3, “Alternatives Considered, Including the Service-preferred Alternative,” presents two management alternatives and their respective objectives and strategies for meeting refuge goals and addressing public and partner issues. It also describes the activities expected to occur regardless of the alternative selected for the final CCP. The two alternatives include continuing the current level of management (current management), and increasing management on the refuge in the context of the broader landscape it is a part of (expanded management).

Chapter 4, “Environmental Consequences,” assesses the environmental consequences of implementing each of two management alternatives. It predicts the foreseeable benefits and consequences affecting the physical, biological, cultural, and socioeconomic environments described in chapter 2.

Chapter 5, “Consultation and Coordination with Others,” summarizes how the public and partners were involved in the planning process.

Chapter 6, “List of Preparers,” includes the names of the core planning team, Service personnel, and agencies involved in the preparation of this draft CCP document.

Four appendixes, a glossary with acronyms and abbreviations, and a bibliography (literature cited) provide additional documentation and references to support the narratives and analysis.

The Service is developing a CCP for Massasoit NWR that best achieves the purpose, goals, and vision of the refuge and contributes to the Refuge System mission, adheres to the Service’s policies and other mandates, addresses identified issues of importance, and incorporates sound principles of fish and wildlife science.

The *purpose* of a CCP is to provide strategic management direction on the refuge for the next 15 years that:

- Clearly states the desired future conditions of refuge habitat, wildlife, public access, visitor services, staffing, and facilities.
- Provides a clear explanation of the reasons for management actions to State agencies, refuge neighbors, visitors, partners, and the public.
- Ensures refuge management reflects the policies and goals of the Refuge System and legal mandates.
- Ensures the compatibility of current and future public use.
- Provides long-term continuity and direction for refuge management.
- Provides direction for staffing, operations, maintenance, and annual budget requests.
- Best achieves the refuge purpose and goals for management of the refuge, as described under the section on “Refuge Goals” at the end of this chapter.

The Purpose of, and Need for, Action

The *need* for a CCP is because Massasoit NWR lacks a master plan with strategic management direction to guide decision-making. Secondly, the local economy and patterns of land use have changed since 1983 and the pressures for public use and access have increased. Also, new ecosystem and species conservation plans have been developed since refuge establishment that bear directly on refuge management. Third, the Improvement Act requires that all national wildlife refuges have a CCP in place to help fulfill the mission of the Refuge System. Finally, the CCP is needed to address key issues identified through the planning process by the public, partners, other agencies, and refuge staff.



Bill Thompson

Eastern towhee

Of primary concern are issues that are adversely affecting the populations and habitats of wildlife and plants within the refuge. These key issues are described in detail below in the section titled, “Issues, Concerns, and Opportunities.”

This draft CCP/EA compares two alternatives for managing Massasoit NWR: alternative A is defined as “Current Management” and alternative B as “Expanded Management.” The draft plan evaluates their effects on key physical, biological, cultural, and socioeconomic resources. Alternative B is the proposed action and the Service-preferred alternative. It is the CCP planning team’s best professional judgment that alternative B best achieves the refuge purpose, vision, and goals; contributes to the Refuge System mission; addresses the issues and relevant mandates; and is consistent with sound principles of fish and wildlife management.

The Service and the National Wildlife Refuge System: Policies and Mandates Guiding Refuge Planning

The U.S. Fish and Wildlife Service and its Mission

As part of the Department of the Interior (Department), the Service administers the Refuge System. The Service mission is “*Working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.*”

Congress entrusts to the Service the conservation and protection of these national natural resources: migratory birds and fish, federally listed endangered or threatened species, inter-jurisdictional fish, wetlands, certain marine mammals, and national wildlife refuges. The Service also enforces Federal wildlife laws and international treaties on importing and exporting wildlife, assists states with their fish and wildlife programs, and helps other countries develop conservation programs.

The Service Manual, available online at: <http://www.fws.gov/policy/manuals> (accessed October 2015) contains the standing and continuing directives on implementing Service authorities, responsibilities, and activities. The 600 series of the Service Manual addresses land use management, and sections 601 to 609 specifically address management of national wildlife refuges. Special directives that affect the rights of citizens or the authorities of other agencies are published separately in the Code of Federal Regulations (CFR). Most of the current regulations that pertain to the Service are issued in 50 CFR, parts 1 to 99;

available online at: <http://www.gpo.gov/fdsys/pkg/CFR-2001-title50-vol1/content-detail.html> (accessed October 2015).

The National Wildlife Refuge System and its Mission and Policies

The Refuge System is the world's largest collection of lands and waters set aside specifically for the conservation of wildlife and the protection of ecosystems. More than 565 national wildlife refuges encompass more than 150 million acres of lands and waters in all 50 states and several island territories. Each year, more than 40 million visitors hunt, fish, observe and photograph wildlife, or participate in environmental education and interpretation activities on refuges.

In 1997, President Clinton signed into law the Improvement Act which established a unifying mission for the Refuge System and a new process for determining the compatibility of public uses on refuges. The Improvement Act also states that the Refuge System must focus on wildlife conservation and that the mission of the Refuge System, coupled with the purpose(s) for which each refuge was established, will provide the principal management direction on that refuge. As stated in the Improvement Act, the mission of the Refuge System is,

“to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

The Refuge Manual contains policy governing the operation and management of the Refuge System that the Service Manual does not cover, including technical information on implementing refuge policies and guidelines on enforcing laws. The Refuge Manual is not available online, but can be viewed at Refuge Complex headquarters in Sudbury, Massachusetts. In addition, there are a few noteworthy policies in the Service Manual that relate to the Refuge System and were instrumental in the development of this draft CCP/EA. Descriptions of those policies follow.

Policy on the National Wildlife Refuge System Mission, Goals, and Purposes (601 FW 1)

This policy sets forth the Refuge System mission noted above, how it relates to the Service mission, and explains the relationship of the Refuge System mission and goals, and the purpose(s) of each unit in the Refuge System. The policy identifies the following Refuge System goals:

- Conserve a diversity of fish, wildlife, and plants.
- Develop and maintain a network of habitats.
- Conserve those ecosystems, plant communities, and wetlands that are unique within the United States.
- Provide and enhance opportunities to participate in compatible, wildlife-dependent recreation.
- Foster public understanding and appreciation of the diversity of fish, wildlife, and plants and their habitats.

This policy also establishes management priorities for the Refuge System:

- Conserve fish, wildlife, and plants and their habitats.
- Facilitate compatible, wildlife-dependent recreational uses.
- Consider other appropriate and compatible uses.

Policy on Refuge System Planning (602 FW 1, 2, and 3)

This policy establishes the requirements and guidance for Refuge System planning, including CCPs and stepdown management plans. It states that refuges are managed in accordance with an approved CCP that when implemented will:

- Achieve refuge purposes.
- Fulfill the Refuge System mission.
- Maintain and, where appropriate, restore the ecological integrity of each refuge and the Refuge System.
- Achieve the goals of the National Wilderness Preservation System (NWPS) and the National Wild and Scenic Rivers System.
- Conform to other applicable laws, mandates, and policies.

This planning policy provides step-by-step directions and identifies the minimum requirements for developing all CCPs including review of existing special designation areas such as wilderness and wild and scenic rivers, specifically addressing the potential for any new special designations, conducting a wilderness review, and incorporating a summary of that review into each CCP (602 FW 3). Appendix C contains the wilderness review for Massasoit NWR. A Wild and Scenic River review was not warranted for this project.

Policy on Appropriate Refuge Uses (603 FW 1)

Federal law and Service policy provide the direction and planning framework for protecting the Refuge System from inappropriate, incompatible, or harmful human activities and ensures that visitors can enjoy its lands and waters (when the refuge is open to public use). Policy 603 FW 1 provides a national framework for determining appropriate refuge uses to prevent or eliminate those that should not occur in the Refuge System. It describes the initial decision process the refuge manager follows when first considering whether to allow a proposed use on a refuge. Appendix B of this CCP/EA further describes the Service's policy on appropriate refuge uses and its relationship to the CCP process. An appropriate use must meet at least one of the following four conditions:

- The use is a wildlife-dependent recreational use as identified in the Improvement Act.
- The use contributes to fulfilling the refuge purpose(s), the Refuge System mission, or goals or objectives described in a refuge management plan approved after October 9, 1997, the date the Improvement Act became law.
- The use involves the taking of fish and/or wildlife under State regulations.
- The use has been found to be appropriate after concluding a findings process using 10 criteria specified in the policy.

This policy is available on the Website: <http://www.fws.gov/policy/603fw1.html> (accessed October 2015).

Policy on Compatibility (603 FW 2)

This Service policy complements the appropriate use policy. The refuge manager must initially find a use appropriate before undertaking a compatibility review of that use. If the proposed use is not appropriate, the refuge manager will not allow it, and a compatibility determination is unnecessary. However, the refuge manager must evaluate an appropriate use further through a compatibility determination. The compatibility determinations for Massasoit NWR are

Rare buckmoth
found in pitch
pine-scrub oak
habitat



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presented in appendix B along with additional information on the process. The direction in 603 FW 2 provides guidance on how to prepare a compatibility determination. Other guidance in that chapter is as follows:

- The Improvement Act and its regulations require an affirmative finding by the refuge manager on the compatibility of a public use before it is allowed on a national wildlife refuge.
- A compatible use is one “that will not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the refuge.”
- The act defines six wildlife-dependent uses that are to receive enhanced consideration on refuges: “hunting, fishing, wildlife observation and photography, and environmental education and interpretation.”
- The refuge manager may authorize those priority uses on a refuge when they are compatible and consistent with public safety.
- When the refuge manager publishes a compatibility determination, it will stipulate the required maximum reevaluation dates: 15 years for wildlife-dependent recreational uses; 10 years for other uses.
- The refuge manager may reevaluate the compatibility of a use at any time: for example, sooner than its mandatory date, or even before the CCP process is completed, if new information reveals unacceptable impacts or incompatibility with refuge purposes (603 FW 2.11, 2.12).
- The refuge manager may allow or deny any use, even one that is compatible, based on other considerations such as public safety, policy, or available funding.

This policy and its regulations, including a description of the process and requirements for conducting compatibility reviews may be reviewed on the Website: <http://www.fws.gov/policy/603fw2.html> (accessed October 2015).

Policy on Maintaining Biological Integrity, Diversity, and Environmental Health (601 FW 3)

This Service policy provides guidance on maintaining or restoring the biological integrity, diversity, and environmental health of the Refuge System, including the protection of a broad spectrum of fish, wildlife, and habitat resources in refuge ecosystems. It provides refuge managers with a process for evaluating the best management direction to prevent the additional degradation of environmental conditions and restore lost or severely degraded components of the environment. It also provides guidelines for dealing with external threats to the biological integrity, diversity, and environmental health of a refuge and its ecosystem.

This policy may be viewed on the Website: <http://www.fws.gov/policy/601fw3.html> (accessed October 2015).

Policy on Wilderness Stewardship (610 FW 1-5)

This Service policy provides guidance for managing Refuge System lands designated as wilderness under the Wilderness Act of 1964 (16 U.S.C. 1131 to 1136; PL 88-577). The Wilderness Act establishes a national system of lands that is composed of federally owned areas designated by Congress as “wilderness areas.” The act directs each agency administering designated wilderness to preserve the wilderness character of areas within the NWPS, and to administer the NWPS for the use and enjoyment of the American people in a way that will leave those areas unimpaired for future use and enjoyment as wilderness. Our wilderness stewardship policy also provides guidance on development of wilderness stewardship plans and clarifies when prohibited uses may be necessary for wilderness preservation.

Service planning policy requires that we evaluate the potential for wilderness on refuge lands during the CCP process (610 FW 1). Section 610 FW 4 of our Wilderness Stewardship Policy provides guidance on the wilderness review process. Sections 610 FW 1 to 3 provide management guidance for designated wilderness areas.

This policy may be viewed on the Website: <http://www.fws.gov/policy/610fw1.html> (accessed October 2015).

As noted previously, appendix C contains the wilderness review for Massasoit NWR.

Policy on Wildlife-dependent Recreation (605 FW 1)

This Service policy presents specific guidance about wildlife-dependent recreation programs within the Refuge System. Wildlife-dependent recreation programs are developed on refuges in consultation with state agencies and stakeholder input based on the following specific criteria:

- Promotes safety of participants, other visitors, and facilities.
- Promotes compliance with applicable laws and regulations and responsible behavior.
- Minimizes or eliminates conflict with fish and wildlife populations or habitat goals or objectives in an approved plan.
- Minimizes or eliminates conflicts with other compatible, wildlife-dependent recreation.
- Minimizes conflicts with neighboring landowners.

- Promotes accessibility and availability to a broad spectrum of the American people.
- Promotes resource stewardship and conservation.
- Promotes public understanding and increases public appreciation of America's natural resources and the Service's role in managing and conserving these resources.
- Provides reliable/reasonable opportunities to experience wildlife.
- Uses facilities that are accessible to people and blend into the natural setting.
- Uses visitor satisfaction to help define and evaluate programs.

This policy may be viewed on the Website: <http://www.fws.gov/policy/603fw1.html> (accessed October 2015).

Policy on Interpretation (605 FW 7)

This Service policy should be read concurrent with 605 FW 1 above, and defines interpretive programs as management tools to accomplish the following:

- Provide opportunities for visitors to become interested in, learn about, and understand natural and cultural resource management and our fish and wildlife conservation history.
- Help visitors understand their role within the natural world.
- Communicate rules and regulations to visitors, thereby promoting understanding and compliance to solve or prevent potential management problems.
- Help us make management decisions and build visitor support by providing insight into management practices.
- Help visitors enjoy quality wildlife experiences on the refuge.

Further, the policy provides these guiding principles for interpretive programs:

- Relate what is being displayed or described to something within the personality or experience of the visitor, and provide meaningful context.
- Reveal key themes and concepts to visitors based on information.
- Inspire and develop curiosity.
- Organize activities around theme statements.

Policy on Urban Wildlife Conservation Program (110 FW 1)

This Service policy presents specific guidance about engaging urban communities in fish and wildlife conservation, to conserve wildlife for the continuing benefit of the American people, and create a connected conservation constituency. The policy describes the designation process for Urban Wildlife Refuge Partnerships, Urban Bird Treaty cities, and Urban Wildlife Refuges and directs all Service programs to contribute to this coordinated national effort to:

- Work to expand their outreach, information, education, and strategic communication activities to raise awareness of the relevancy of conservation in urban areas and in peoples' lives.

- Create more opportunities for people in urban areas to engage in fish and wildlife conservation and restoration, either by interacting directly with urban residents or by developing partnerships with organizations that are already involved with urban communities.
- Establish methods for evaluating intended outcomes and modify practices to ensure success.

Further, the policy provides these supporting goals to achieve the overarching program goal:

- Ensuring that people who are engaged in wildlife conservation reflect the demographics of America.
- Encouraging a better understanding by urban residents of the importance of protecting and conserving habitat for wildlife by connecting them in ways that are relevant to their lives.
- Involving urban communities through environmental education and nature-based experiences that move participants up a spectrum of engagement from nature awareness and comfort to conservation action.
- Embracing traditional and new collaborations with the urban community to develop meaningful, lifelong connections to wildlife.
- Becoming a community asset, collaboratively working to help strengthen the urban community as a whole.

This policy may be viewed on the Website: <http://www.fws.gov/policy/110fw1.html> (accessed December 2015).

Fulfilling the Promise and Conserving the Future: Wildlife Refuges and the Next Generation

In the summer of 2011, the Service held a “Vision Conference”—an opportunity to create a new strategic mission for the Refuge System that would guide refuge management through the next decade. The Service now has a great opportunity to improve upon its planning legacy by incorporating a new vision and set of conservation strategies in the next generation of CCPs. This new vision requires emphasizing several principles. First, the new plans must integrate the conservation needs of the larger landscape and ensure that refuges function as a system. Second, plans must be flexible enough to address new environmental challenges and contribute to the ecological resiliency of fish and wildlife populations and their habitats. Third, plans must be written so those who read them will clearly understand what is expected and be inspired to take action to become a part of our conservation legacy. Fourth, plans should explore ways to increase recreational opportunities, working closely with regional recreation, trails, and transportation planners to leverage resources that make refuges more accessible to the public.

The 1999 report “Fulfilling the Promise, The National Wildlife Refuge System: Visions for Wildlife, Habitat, People and Leadership” (USFWS 1999c) is a culmination of a year-long process by teams of Service employees to evaluate the Refuge System nationwide. The report contains 42 recommendations packaged with three vision statements dealing with wildlife and habitat, people, and leadership. “Conserving the Future: Wildlife Refuges and the Next Generation” (USFWS 2011) is a vision designed to guide the management of the Refuge System during the next decade and beyond. This document contains 23 recommendations on themes such as the relevance of the Refuge System to a changing America, the impact of climate change, the need for conservation at a

landscape-scale, the necessity of partnership and collaboration, and the absolute importance of scientific excellence. These recommendations have provided much of the guidance for developing this draft CCP/EA. The document can be found here: <https://www.fws.gov/refuges/pdfs/FinalDocumentConservingTheFuture.pdf> (accessed October 2015).

Endangered Species Act

Through Federal action, and by encouraging the establishment of state conservation programs, the 1973 Endangered Species Act (ESA) provided for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend. The ESA:

- Authorizes the determination and listing of species as endangered and threatened.



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Tree girdling to increase sun exposure

- Prohibits unauthorized taking, possession, sale, and transport of endangered species.
- Provides authority to acquire land for the conservation of listed species, using land and water conservation funds.
- Authorizes establishment of cooperative agreements and grants-in-aid to states that establish and maintain active and adequate programs for endangered and threatened wildlife and plants.
- Authorizes the assessment of civil and criminal penalties for violating the ESA or regulations.

- Authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the ESA or any regulation issued there under.

Native American Policy

The Service updated its Native American Policy (510 FW1) in 2016. The policy provides a framework for government-to-government relationships, and furthers the trust responsibility of the United States and the Department to federally recognized Tribes to protect, conserve, and use Tribal reserved, treaty guaranteed, or statutorily identified resources. The policy articulates the principles for interactions between the Service and Tribal governments as they related to shared interests in the conservation of fish, wildlife, and their habitats, which include Service land and the protection of cultural resources that exist on Service lands. The policy can be found here: www.fws.gov/nativeamerican/pdf/Policy-revised-2016.pdf (accessed June 2016).

Other Mandates

Although Service and Refuge System policy and the purpose(s) of each refuge provide the foundation for its management, other Federal laws, executive orders (EO), treaties, interstate compacts, and regulations on conserving and protecting natural and cultural resources also affect how the Service manages refuges. Federal laws require the Service to identify and preserve its important historic structures, archaeological sites, and artifacts. For example, NEPA mandates consideration of cultural resources in planning Federal actions, and the

Improvement Act requires each refuge to identify its archaeological and cultural values in a CCP.

In addition, laws relevant to Massasoit NWR are summarized below, as described in the “Digest of Federal Resource Laws of Interest to the U.S. Fish and Wildlife Service,” and from the USFWS 2013 Tribal Consultation Guide.

The Antiquities Act of 1906 as amended (PL 59–209; 34 Stat. 225; 16 U.S.C. 431 to 433) is the earliest and most basic legislation for protecting cultural resources on Federal lands. It provides misdemeanor-level criminal penalties to control unauthorized uses. Appropriate scientific uses may be authorized through permits, and materials removed under a permit must be permanently preserved in a public museum. The 1906 act is broader in scope than the 1979 Archaeological Resources Protection Act (ARPA), which partially supersedes it.

The Historic Sites, Buildings and Antiquities Act (16 U.S.C. 461 to 462, 464 to 467; 49 Stat. 666) of August 21, 1935, popularly known as the Historic Sites Act, as amended by PL 89–249, approved October 9, 1965, (79 Stat. 971), declares it a national policy for the first time to preserve historic sites and objects of national significance, including those located on refuges. It provides authorization to the Secretary of the Interior through the National Park Service (NPS) to conduct archaeological surveys, and to designate, acquire, administer, protect, and purchase properties of historic significance. National Historic and Natural Landmarks are designated under the authority of this act, which are eventually incorporated into the National Historic Register under the 1966 National Historic Preservation Act (NHPA).

The Archeological and Historic Preservation Act (16 U.S.C. 469 to 469c; PL 86–523), approved June 27, 1960, (74 Stat. 220) as amended by PL 93–291, approved May 24, 1974 (88 Stat. 174), carries out the policy established by the Historic Sites Act. It directs Federal agencies to notify the Secretary of the Interior whenever they find that alteration of terrain caused by a Federal or federally assisted, licensed, or permitted project may cause the loss or destruction of significant scientific, prehistoric, or archaeological data. This expands the number of Federal agencies responsible for carrying out this law. The act authorizes the use of appropriated, donated, or transferred funds for the recovery, protection, and preservation of those data.

The NHPA (16 U.S.C. 470 to 470b, 470c to 470n), PL 89–665, approved October 15, 1966, (80 Stat. 915) and repeatedly amended, provides for the preservation of significant historical properties (buildings, objects, and sites) through a grant-in-aid program to the states. It establishes a National Register of Historic Places and a program of matching grants under the existing National Trust for Historic Preservation (16 U.S.C. 468 to 468d). This act establishes an Advisory Council on Historic Preservation, which became a permanent, independent agency in PL 94–422, approved September 28, 1976, (90 Stat. 1319), and created the Historic Preservation Fund. It directs Federal agencies, and any state, local, or private entity associated with a Federal undertaking, to conduct a Section 106 Review, or to identify and assess the effects of their actions on items or sites listed or eligible for listing on the National Register. Most importantly, this act established that archaeological preservation was an important and relevant component at all levels of modern society, and it enabled the Federal Government to facilitate and encourage archaeological preservation, programs, and activities in the state, local, and private sectors.

The NHPA also charges Federal agencies with locating, evaluating, and nominating sites on their land to the National Register of Historic Places. An

inventory of known archaeological sites and historic structures is maintained in the Northeast Regional Office and file copies of the sites at each refuge. The Regional historic preservation officer in Hadley, Massachusetts, oversees compliance with the NHPA and consultations with State Historic Preservation Officers (SHPOs).

American Indian [Native American] Religious Freedom Act of 1978 as amended (PL 95–431; 92 Stat. 469; 42 U.S.C. 1996) resolves that it shall be the policy of the United States to protect and preserve for the American Indian, Eskimo, Aleut, and Native Hawaiian the inherent right of freedom to believe, express, and exercise their traditional religions, including access to religious sites, use and possession of sacred objects, and freedom to worship through ceremonial and traditional rites. Federal agencies are directed to evaluate their policies and procedures to determine if changes are needed to protect such rights and freedoms from agency practices. The act is a specific expression of First Amendment guarantees of religious freedom. It is not implemented by regulations.

The ARPA (16 U.S.C. 470aa to 470ll; PL 96–95) approved October 31, 1979, (93 Stat. 721), largely supplanted the resource protection provisions of the Antiquities Act of 1906 for archaeological items. ARPA establishes detailed requirements for issuance of permits for any excavation for, or removal of, archaeological resources from Federal or Native American lands. It also provides detailed descriptions of prohibited actions, thereby strengthening enforcement capabilities. It establishes more severe civil and criminal penalties for the unauthorized excavation, removal, or damage of those resources; for any trafficking of those resources removed from Federal or Native American land in violation of any provision of Federal law; and for interstate and foreign commerce in such resources acquired, transported or received in violation of any State or local law.

Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, as amended (PL 101–601; 104 Stat. 3048; 25 U.S.C. 3001 *et seq.*) establishes rights of American Indian Tribes and Native Hawaiian organizations to claim ownership of certain cultural items, including human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by Federal agencies and museums that receive Federal funds. It requires agencies and museums to identify holdings of such remains and objects, and to work with appropriate Native Americans toward their repatriation. Permits for the excavation and/or removal of cultural items protected by the act require Native American consultation, as do discoveries of cultural items made during Federal land use activities (43 CFR Part 10). In the case that human remains are discovered on the refuge, NAGPRA establishes a procedural framework to follow, and this process may also be coordinated with the Commonwealth of Massachusetts and its laws and procedural framework as necessary.

The Service also owns and cares for museum properties. The most common are archaeological, zoological, botanical collections, historical photographs, historic objects, and art. Each refuge maintains an inventory of its museum property, and a museum property coordinator in Hadley, Massachusetts, guides the refuges in caring for that property, and provides guidance with NAGPRA and Federal regulations governing Federal archaeological collections. This program ensures that collections remain available to the public for learning and research.

The Environmental Justice program, established by Presidential EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), requires Federal agencies to ensure that all environmental policies and the disposal of toxic waste do not adversely impact

minority and low-income communities, including Tribes. The common concern is that these communities are exposed to unfair levels of environmental risk arising from multiple sources, often coupled with inadequate government response.

Chapter 4, “Environmental Consequences,” evaluates this plan’s compliance with the acts noted above, and with the Clean Water Act of 1977, as amended (33 U.S.C. 1251, *et seq.*; PL 107–303), the Clean Air Act of 1970 (CAA), as amended (42 U.S.C. 7401 *et seq.*), and the ESA of 1973 (16 U.S.C. 1531 to 1544), as amended. Finally, this draft CCP/EA complies with NEPA and the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500 to 1508).

Conservation Plans and Initiatives Guiding our Planning

Strategic Habitat Conservation

Strategic Habitat Conservation (SHC) is the conservation approach the Service is using to achieve its mission in the 21st century and represents a landscape approach that is strategic, science-driven, collaborative, adaptive, and understandable. The purpose of SHC is to coordinate and link actions that various programs and partners perform at individual sites, so that their combined effect may be capable of achieving these outcomes at the larger landscape, regional, or continental scales. In this way, conservation actions can help recover and sustain species’ populations as part of whole communities and systems, together with their ecological functions and processes.

The SHC approach is built on five main components that compel the Service to align expertise, capability, and operations across our programs in a unified effort to achieve mutually aspired biological outcomes: (1) *biological planning*—working with partners to establish shared conservation targets and measurable biological objectives (i.e. population) for these outcomes, and identify limiting factors affecting our shared conservation targets; (2) *conservation design*—creating tools that allow us to direct conservation actions to most effectively contribute to measurable biological outcomes, (3) *conservation delivery*—working collaboratively with a broad range of partners to create and carry out conservation strategies with value at multiple spatial scales, (4) *outcome-based monitoring*—evaluating the effectiveness of conservation actions in reaching

New England cottontail



Mesigan Racey/USFWS

biological outcomes and to adapt future planning and delivery, and (5) *assumption driven research*—testing assumptions made during biological planning to refine future plans and actions. Both monitoring and research help us learn from our decisions and activities and improve them over time. SHC relies on an adaptive management framework to focus on a subset of shared conservation targets, set measurable biological objectives for them, and identify the information, decisions, delivery, and monitoring needed to achieve desired biological outcomes. SHC helps the Service, and the broader conservation community, effectively organize expertise and contributions across programs and partners, so our efforts to conserve landscapes—capable of supporting self-sustaining populations of fish, wildlife, and plants—are both successful and efficient. For more information on SHC, go to: <http://www.fws.gov/landscape-conservation/shc.html> (accessed October 2015).

North Atlantic Landscape Conservation Cooperative

In cooperation with the U.S. Geological Survey (USGS), the Service is promoting landscape conservation through a national geographic network of Landscape Conservation Cooperatives (LCCs). LCCs were created in response to the unprecedented level of large-scale pressures on natural systems (e.g., land use pressures, habitat loss and fragmentation, invasive species, and climate change) and the need for agencies and organizations to work together to find long-term solutions to these threats. Each LCC is comprised of Federal and state agencies, Tribes, universities, and public and private organizations, collectively working to sustain America's lands, waters, wildlife, and cultural resources. By functioning as an interdependent network, LCCs are able to accomplish more together than any single agency or organization alone.

LCCs are applied conservation science partnerships with two main functions. The first is to provide the science and technical expertise needed to support conservation planning at landscape scales—beyond the reach or resources of any one organization. Through the efforts of in-house staff and science-oriented partners, LCCs are generating the tools, methods, and data managers need to design and deliver conservation using the SHC approach (see below for more details). The second function of LCCs is to promote collaboration among their members in defining shared conservation goals. With these goals in mind, partners can identify where and how they will take action, within their own authorities and organizational priorities, to best contribute to the larger conservation effort. LCCs do not place limits on partners; rather, they help partners to see how their activities can “fit” with those of other partners to achieve a bigger and more lasting impact. For more information on LCCs, go to: <http://www.fws.gov/landscape-conservation/lcc.html> (accessed October 2015) and see also map 1-4.

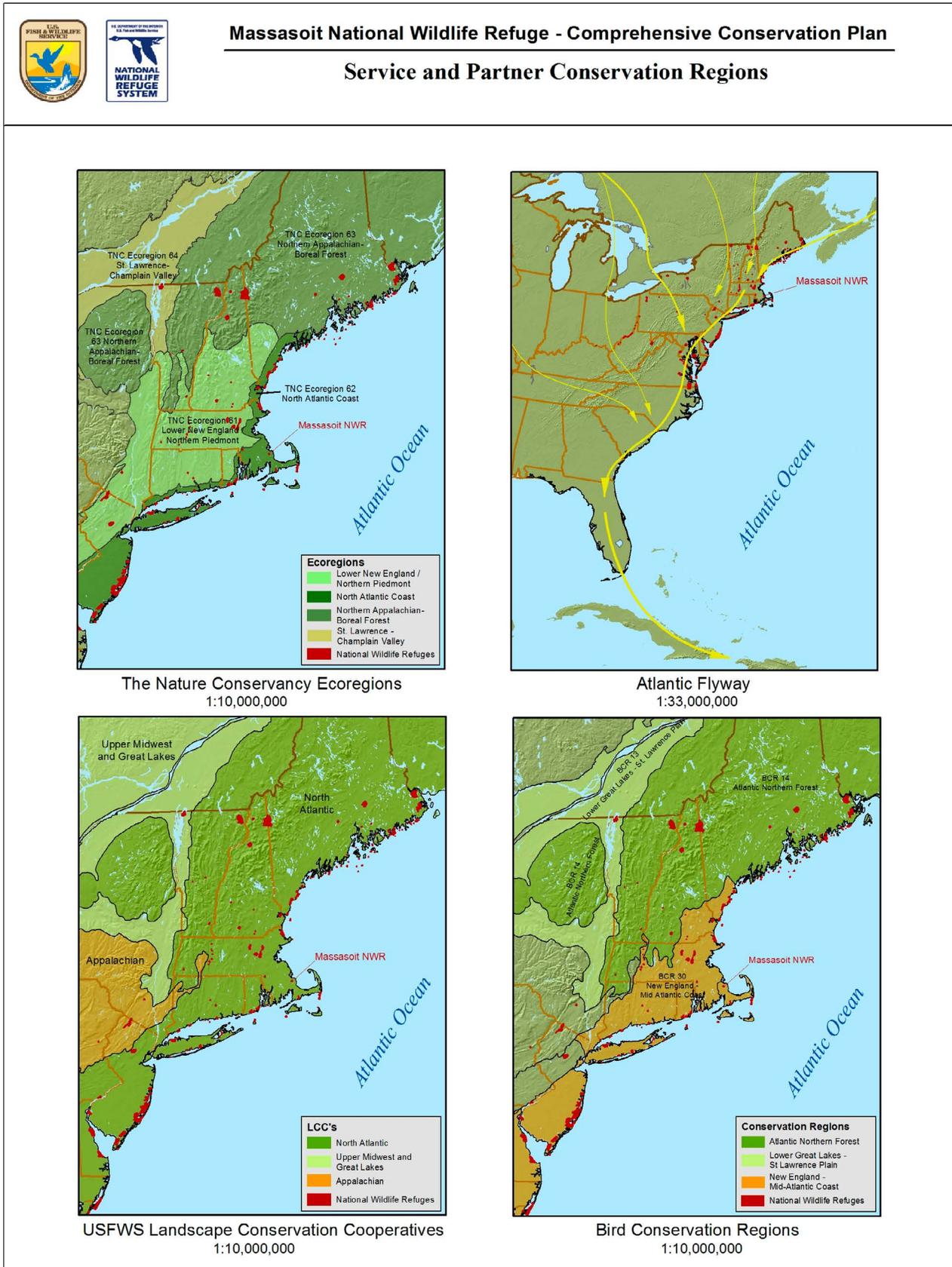
Climate Change

Secretarial Order 3289, issued on March 11, 2009, established a commitment by the Department to address the challenges posed by climate change to Tribes and to the cultural and natural resources the Department oversees. This order promotes the development and use of renewable energy on public lands, adapting land management strategies to mitigate the effects of climate change, initiating multi-agency coalitions to address issues on a landscape level, and incorporating climate change priorities in long-term planning. These and other actions will be overseen by a Climate Change Response Council which is responsible for creating a Departmentwide climate change strategy.

Department of the Interior Secretarial Order 3226 states that “there is a consensus in the international community that global climate change is occurring and that it should be addressed in governmental decision making. This Order ensures that climate change impacts are taken into account in connection with Departmental planning and decision making.” Additionally, it calls for the incorporation of climate change considerations into long-term planning documents such as the CCP.

The Wildlife Society published an informative technical review report in 2004 titled “Global Climate Change and Wildlife in North America” (Inkley et al. 2004) that interprets results and details from such publications as the IPCC reports (1996-2002) and describes the potential impacts and implications on wildlife and habitats. This report notes that projecting the impacts of climate change is hugely complex because not only is it important to predict changing precipitation and temperature patterns, but to predict their rate of change, as well as the exacerbated effects of other stressors on the ecosystems. Those stressors include loss of wildlife habitat to urban sprawl and other developed land uses, pollution, ozone depletion, exotic species, disease, and other factors.

Map 1-4. Service and Partner Conservation Regions



As the principal agency responsible for the conservation of the Nation's fish, wildlife, and plant resources, the Service has drafted a *Climate Change Strategic Plan* and a *5-Year Action Plan* to jump-start implementation of the strategic plan. These plans provide a framework in which the Service works with others on a landscape scale, to promote the persistence of native species, habitats, and natural communities. Specifically, these plans are based on three overall strategies: adaptation (management actions the Service will take to reduce climate change impacts on wildlife and habitats); mitigation (consuming less energy and using less materials in administering land and resources); and, engagement (outreach to the larger community to build knowledge and share resources to better understand climate change impacts). Both plans can be found at: <http://www.fws.gov/home/climatechange/response.html> (accessed October 2015). The Service was also a member of an intergovernmental working group of Federal, state, and Tribal agency representatives who developed the new *National Fish, Wildlife, and Plants Climate Adaptation Strategy*. This strategy can be viewed at: <http://www.wildlifeadaptationstrategy.gov/> (accessed October 2015).

In October 2015, the Massachusetts Division of Fisheries and Wildlife (MassWildlife) submitted the Massachusetts State Wildlife Action Plan (SWAP) to the USFWS for final approval. This update of the 2006 Massachusetts SWAP substantially expands on the discussion of expected climate change impacts on Species of Greatest Conservation Need (SGCN) and the habitats and landscapes on which they depend from that in the original 2006 Massachusetts Comprehensive Wildlife Action Strategy discussed further below and in subsequent chapters. Results from the Climate Change Vulnerability Assessment conducted by the Manomet Center for Conservation Sciences and MassWildlife (2010) helped to identify which habitat types in Massachusetts are more vulnerable to climate change than others and the factors making them vulnerable. This information and the results from a Regional Climate Change Vulnerability Assessment (Manomet Center for Conservation Sciences and National Wildlife Federation 2012), informed priority setting for refuge habitat and landscape conservation based on how likely various habitat types are to persist within the State and across the broader New England region.

Birds of Conservation Concern 2008 Report

The Service developed this report (USFWS 2008) in consultation with leaders of ongoing bird conservation initiatives and partnerships such as Partners in Flight (PIF), the North American Waterfowl Management Plan (NAWMP) and Joint Ventures, the North American Waterbird Conservation Plan (NAWCP), and the U.S. Shorebird Conservation Plan. This report fulfills the mandate of the 1988 amendment to the Fish and Wildlife Conservation Act of 1980 (100 PL 100–653, Title VIII) that required the Secretary of the Interior, through the Service, to “identify species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the ESA of 1973.”

The report contains 46 lists that identify bird species of conservation concern at national, regional, and landscape scales. It includes a principal national list, regional lists corresponding to the regional administrative units of the Service, and species lists for each of the 35 bird conservation regions (BCRs) designated by the North American Bird Conservation Initiative (NABCI) in the United States, and two additional BCRs created that include island “territories” of the United States. NABCI defined those BCRs as ecologically based units in a framework for planning, implementing, and evaluating bird conservation.

It is hoped this report will stimulate Federal, state, and private agencies to coordinate, develop, and implement integrated approaches for conserving and

managing those birds deemed most in need of conservation. This report is one of the plans considered in identifying species of concern in appendix A and in developing management objectives and strategies for goal 1 elsewhere in this CCP/EA. The specific plans referenced in developing the Birds of Conservation Concern 2008 Report are available at: <http://www.fws.gov/migratorybirds/pdf/grants/BirdsofConservationConcern2008.pdf> (accessed October 2015) and are addressed below.

North American Waterfowl Management Plan and Atlantic Coast Joint Venture Implementation Plan

Originally written in 1986, the NAWMP describes a long-term strategy between the United States, Canada, and Mexico to restore and sustain waterfowl populations by protecting, restoring, and enhancing habitat. The plan committee, including representatives from each nation, has modified the 1986 plan four times to account for biological, sociological, and economic changes that influenced the status of waterfowl and the conduct of cooperative habitat conservation. The most recent revision (NAWMP 2012) establishes three overarching goals for waterfowl conservation: (1) abundant and resilient waterfowl populations to support hunting and other uses without imperiling habitat; (2) wetlands and related habitats sufficient to sustain waterfowl populations at desired levels, while providing places to recreate and ecological services that benefit society; and (3) growing numbers of waterfowl hunters, other conservationists and citizens who enjoy and support waterfowl and wetlands conservation. The plan is available online at: <http://nawmprevision.org/> (accessed October 2015).

To convey goals, priorities, and strategies more effectively, NAWMP is comprised of two separate documents: “Strategic Guidance” and “Implementation Framework.” The former is geared towards agency administrators and policy makers who set the direction and priorities for conservation. The latter includes supporting technical information for use by biologists and land managers.

The plans are implemented at the regional level in 14 habitat Joint Ventures and 3 species Joint Ventures: Arctic goose, American black duck, and sea duck. Massasoit NWR lies in the Atlantic Coast Joint Venture (ACJV) which includes all the Atlantic Flyway States from Maine to Florida and Puerto Rico. The waterfowl goal for the ACJV is to:

“Protect and manage priority wetland habitats for migration, wintering, and production of waterfowl, with special consideration to black ducks, and to benefit other wildlife in the joint venture area.”

The ACJV 2005 plan presents habitat conservation goals and population indices for the ACJV consistent with the NAWMP update, provides status assessments of waterfowl and their habitats in the joint venture, and updates focus area narratives and maps for each state. That document is intended as a blueprint for conserving the valuable breeding, migration, and wintering waterfowl habitat present within the ACJV boundary based on the best available information and the expert opinion of waterfowl biologists from throughout the flyway. The ACJV 2005 Implementation Plan may be viewed at: <http://acjv.org/planning/waterfowl-implementation-plan/> (accessed October 2015).

North American Bird Conservation Initiative: New England/Mid-Atlantic Bird Conservation Region Implementation Plan

Massasoit NWR lies in the New England/Mid-Atlantic BCR 30 (map 1-4). BCR 30 provides important resources for migratory birds whose ranges span the western hemisphere. The habitats associated with coastal ecosystems provide the highest habitat values and critical staging areas for migratory waterfowl, waterbirds, shorebirds, and land birds. Forested upland communities are the second most important habitats for migratory birds in BCR 30. Though

*Green heron at
Massasoit National
Wildlife Refuge*



Jared Green

the 2008 plan specifically highlights the Chesapeake and Delaware Bays, the Massachusetts Cape Cod and Islands area provides crucial resources for many migrating birds as they journey from their breeding sites in the north to non-breeding sites in Mexico, Central America, the Caribbean, and South America.

Unfortunately, most of the lands in BCR 30 have been altered from their historic condition. Urban development and agriculture dominates much of the landscape. The loss or degradation of habitat (e.g., by fragmentation, agriculture, and invasive species) are the greatest threats to bird populations in BCR 30. This plan identifies the bird species and habitats in greatest need of conservation action in this region, activities thought to be most useful to address those needs, and geographic areas believed to be the most important places for those activities. This regional implementation plan is meant to start a regional bird conservation initiative by partners across BCR 30, communicating their conservation planning and implementation activities and delivering high-priority conservation actions in a coordinated manner.

The BCR 30 implementation plan may be viewed at: http://www.acjv.org/BCR_30/BCR30_June_23_2008_final.pdf (accessed October 2015).

Partners in Flight Bird Conservation Plans

In 1990, PIF began as a voluntary, international coalition of government agencies, conservation organizations, academic institutions, private industries, and citizens dedicated to reversing the population declines of bird species and “keeping common birds common.” The foundation of PIF’s long-term strategy is a series of scientifically based bird conservation plans using physiographic areas as planning units.

The goal of each PIF plan is to ensure the long-term maintenance of healthy populations of native birds, primarily non-game birds. The plan for each physiographic area ranks bird species according to their conservation priority, describes their desired habitat conditions, develops biological objectives, and

recommends conservation measures. The priority ranking factors are habitat loss, population trends, and the vulnerability of a species and its habitats to regional and local threats.

Massasoit NWR lies in the North Atlantic Coast Ecoregion (see map 1-4, #62), (Dettmers and Rosenberg 2000) and includes objectives for seven habitat types and associated species of conservation concern, including early successional/pitch pine barren habitat. This plan can be accessed at: http://www.ct.gov/csc/lib/csc/pendingproceeds/petition_980/prefiled/dettmers_rosenburg_pl_09_10.pdf (accessed October 2015).

North American Waterbird Conservation Plan

The 2002 NAWCP (Version 1) plan (Kushlan et al. 2002) represents a partnership among individuals and institutions with interest in, and responsibility for conserving waterbirds and their habitats, and is just one element of a multi-faceted conservation program. Its primary goal is to ensure that the distribution, diversity, and abundance of populations and habitats of breeding, migratory, and non-breeding waterbirds are sustained or restored throughout the lands and waters of North America, Central America, and the Caribbean. It provides a framework for conserving and managing nesting water-dependent birds. In addition, it facilitates continentwide planning and monitoring, national, state, and provincial conservation, regional coordination, and local habitat protection and management.

In 2006, the Mid-Atlantic New England Working Group developed the *Waterbird Conservation Plan for the Mid-Atlantic/New England/Maritimes (MANEM) Region* (MANEM Waterbird Working Group 2007). It consists of technical appendixes on (1) waterbird populations including occurrence, status, and conservation needs, (2) waterbird habitats and locations within the region that are crucial for waterbird sustainability, (3) MANEM partners and regional expertise for waterbird conservation, and (4) conservation project descriptions that present current and proposed research, management, habitat acquisition, and education activities. Summarized information on waterbirds and their habitats provides a regional perspective for local conservation action. This plan is available online at <http://www.waterbirdconservation.org/manem.html> (accessed October 2015).

Partners in Amphibian and Reptile Conservation, National State Agency Herpetological Conservation Report

Northern red-bellied cooter nest



USFWS

Partners in Amphibian and Reptile Conservation (PARC) was created in response to the increasing, well-documented national declines in amphibian and reptile populations and is considered the most comprehensive effort in herpetofaunal (amphibian and reptile) conservation in the Nation. PARC members include state and Federal agencies, conservation organizations, museums, the pet trade industry, nature centers, zoos, the energy industry, universities, herpetological organizations, research laboratories, forest industries, and environmental consultants. Its five geographic regions focus on national and regional challenges in herpetofaunal conservation, and regional working groups allow for region-specific communication. The Northeast working group has developed *Model State Herpetofauna Regulatory Guidelines* which were consulted in developing this CCP. This document can be found at: <http://www.parcplace.org/publications/211-parc-model-herpetofauna-guidelines-.html> (accessed October 2015).

PARC has also released a report for the amphibian and reptile species of the Northeast titled *Habitat Management Guidelines for Amphibians and Reptiles of the Northeastern United States* that lists species of conservation concern and provides management guidelines for those species (<http://northeastparc.org/wp-content/uploads/2015/08/Final-NE-HMG.pdf>; accessed October 2015).

**Massachusetts State
Wildlife Action Plan**

In 2002, Congress created the State Wildlife Grant Program (SWG), and appropriated \$80 million in state grants to help state and Tribal fish and wildlife agencies conserve fish and wildlife species of greatest conservation need. The funds appropriated under the program are allocated to each state according to a formula that takes into account each state's size and population.

To be eligible for additional Federal grants, and to satisfy the requirements for participating in the SWG program, each state and U.S. territory was charged with developing a statewide "Comprehensive Wildlife Conservation Strategy" and submitting it to the National Advisory Acceptance Team by October 1, 2005. Each plan had to address eight required elements, and each plan had to identify and focus on "species of greatest conservation need," address the "full array of wildlife" and wildlife-related issues, and "keep common species common."

The Massachusetts SWAP, first released in 2005 and then updated in 2006 (MassWildlife 2006), resulted from that charge. It provides a blueprint and vision for effective and efficient wildlife conservation within Massachusetts, and stimulated other state and Federal agencies and conservation partners to think strategically about their individual and coordinated roles in prioritizing conservation.

In addressing the eight elements, the Massachusetts SWAP helps supplement the information gathered on species and habitat occurrences and their distribution, and identifies conservation threats and management strategies for species and habitats of conservation concern in the CCP. The eight elements of the Massachusetts SWAP are:

- Information on the distribution and abundance of species of wildlife, including low and declining populations that are indicative of the diversity and health of the State's wildlife.
- Descriptions of locations and relative condition of key habitats and community types essential to the conservation of species identified in element 1.
- Descriptions of problems that may adversely affect species identified in element 1 or their habitats, and priority research and survey efforts needed to identify factors which may assist in restoration and improved conservation of these species and habitats.
- Descriptions of conservation actions necessary to conserve the identified species and habitats and priorities for implementing such actions.
- Plans proposed for monitoring species identified in element 1 and their habitats, for monitoring the effectiveness of the conservation actions proposed in element 4, and for adapting those conservation actions to respond appropriately to new information or changing conditions.
- Descriptions of procedures to review the plan at intervals not to exceed 10 years.
- Plans for coordinating, to the extent feasible, the development, implementation, review, and revision of the plan strategy with Federal, State, local agencies, and Native American Tribes that manage significant areas of land and water within the State, or administer programs that significantly affect the conservation of identified species and habitats.

- Plans for involving the public in the development and implementation of plan strategies.

The 2006 Massachusetts SWAP was further updated in 2015, and following public review, was submitted to the USFWS on October 1, 2015. The goal of the Massachusetts SWAP is to keep common species common and to conserve the breadth of biodiversity of the Commonwealth of Massachusetts. Major updates included in the updated SWAP include:

- Greater discussion of climate-change impacts to SGCN;
- Identification of accomplishments towards reaching the goals of the 2005 SWAP;
- Additions and deletions to the list of SGCN, including, for the first time, State-listed and uncommon plants;
- Increased recognition of the importance of regional conservation needs and the role for MassWildlife in meeting those needs; and
- *BioMap2*, an update to the earlier *BioMap* and *Living Waters* projects.

MassWildlife has already adopted, developed, or is developing conservation plans for many species and habitats, and is implementing the planned conservation actions in coordination with their many partners, including the Service. Those plans particularly relevant to the Massasoit NWR planning process include regional plans for New England cottontail and conservation plans for shrubland and pitch pine-scrub oak habitats. MassWildlife's Natural Heritage and Endangered Species Program (NHESP) intends to prepare conservation plans that aim to secure the long-term viability of several State listed species, including Eastern box turtles, blue-spotted and Jefferson salamanders, and several moths closely associated with pitch pine-scrub oak habitats that will also be relevant for future refuge decision-making.

*Coyote at Massasoit
National Wildlife Refuge*



Jared Greeniv

Massachusetts has also been collaborating with other Northeastern state and Federal wildlife agencies and non-government conservation organizations to complete standardized surveys, assessments, and develop standardized monitoring protocols for species of conservation need and the habitats they depend upon. The consistent and widespread use of common monitoring methodologies and survey protocols will help support regional assessments of the status and trends for SGCN and their habitats, such as the Northeast Association of Fish and Wildlife Administrators (NEAFWA) Monitoring and Performance Reporting Framework (NEAFWA 2008, see <http://rcngrants.org/content/regional-monitoring-and-performance-framework>).

Some of the regional and Statewide surveys and assessments and standardized monitoring protocols completed or now in process with funding from the Regional Conservation Network (RCN) Grant Program that are relevant for coastal plain ponds, pitch pine-oak upland forests and associated savanna, shrubland, and open oak woodland habitat conservation include dragonflies and damselflies (odonates), freshwater aquatic habitats (Gawler 2008) and frogs, New England cottontail (Fuller and Tur 2012), shrubland birds (McDowell 2011), and detailed avian indicators for assessing the magnitude of threats and the effectiveness of conservation measures (Northeast Coordinated Bird Monitoring Partnership 2007). In addition, NEAFWA also funded development of a database for regional invertebrate SGCN through a partnership with the Carnegie Museum of Natural History in Pittsburgh (Fetzner 2012). A simple results chain model (Margoluis and Salafsky 1998; Foundations of Success 2009) for assessing northern red-bellied cooter headstarting effectiveness was also developed. Another more complex, multiple (parallel) conservation action results chain model for Plymouth Gentian, another indicator of coastal plain pond health (ecological integrity) has also been developed to help assess effectiveness of conservation actions. Service conservation partners continue constructing and using new results chain models that can illuminate the complexities in effecting conservation to managers, policy makers, regulators, and concerned citizens. Constructing and using results chains like these can illuminate the complexities in effecting conservation to managers, policy makers, regulators, and concerned citizens.

Natural Heritage *BioMap2*

The NHESP and The Nature Conservancy's (TNC) Massachusetts Program developed *BioMap2* (Woolsey et al. 2010), an enhanced and comprehensive biodiversity conservation plan for Massachusetts that updates and broadens the biological and conceptual scope of the original *BioMap* report published in 2001. *BioMap2* is "designed to guide strategic biodiversity conservation in Massachusetts over the next decade by focusing land protection and stewardship on the areas that are most critical for ensuring the long-term persistence of rare and other native species and their habitats, exemplary natural communities, and a diversity of ecosystems." *BioMap2* builds on the original *BioMap*, *Living Waters*, and the Massachusetts SWAP to prioritize and guide biodiversity conservation in Massachusetts in the context of continued development and the anticipated effects of climate change. It includes the latest survey information and spatial analyses, and identifies the areas of highest conservation value for a range of biodiversity elements.

BioMap2 identifies Core Habitat, key areas that are critical for the long-term persistence of rare species and other Species of Conservation Concern, as well as a wide diversity of natural communities and intact ecosystems across the State. Massasoit NWR includes the following priority natural communities: coastal plain pondshore, and pitch pine-scrub oak community. Additionally, to further focus biodiversity protection and habitat management within Massachusetts, key sites were identified based on the following criteria:

- Sites with a concentration of co-occurring rare species (5-or-more-species hotspot) listed under the Massachusetts Endangered Species Act (MESA).
- Sites with the best quality occurrences of high-priority species or natural communities (e.g., globally rare species).
- Multiple, co-occurring, landscape-level resources, as identified by *BioMap2*.
- Multiple rare species occurrences. Starting with each 5-or-more-species hotspot, the contiguous species-specific habitat areas for the MESA-listed species in the hotspot were chosen and merged with the hotspot itself.
- Tier 1 MESA species and natural communities.
- Multiple, co-occurring, landscape-level resources.

The MSSF and its surrounding landscape, including Massasoit NWR, was identified as a Key Site for focusing biodiversity conservation and habitat management actions by the Commonwealth of Massachusetts and its conservation partners. The *BioMap2* interactive map and *Summary Report* can be viewed at: <http://www.mass.gov/eea/docs/dfg/nhesp/land-protection-and-management/biomap2-summary-report.pdf> (accessed October 2015).

**Plymouth Redbelly Turtle/
Northern Red-bellied Cooter
(*Pseudemys rubriventris*)
Recovery Plans, Reviews,
and Evaluations**

The Plymouth redbelly turtle (now known as the northern red-bellied cooter) was listed on the federally endangered species list in 1980. The initial recovery plan for this species was completed in 1981 and updated and revised in 1985. In 1994, the Service's recovery plan was again revised, including an updated assessment of the species status and a discussion on the revision to a subspecific taxonomy of *Pseudemys rubriventris*. The *Revised Recovery Plan for the Plymouth Redbelly Turtle* reports on recovery progress to date and completion of various tasks specified in earlier versions of the recovery plan for this endangered species (USFWS 1981, 1985). It also delineates further actions needed to protect and recover the Plymouth redbelly turtle. This plan may be viewed online at: http://ecos.fws.gov/docs/recovery_plan/940506b.pdf (accessed October 2015). In 2007, the Service published a 5-year review which provides updated information on the biology and habitat of the northern red-bellied cooter, headstart release sites, and the status of this species at the time of the report. *The Northern Red-Bellied Cooter (Pseudemys rubriventris) 5-Year Review: Summary and Evaluation* is available at: <http://www.fws.gov/northeast/EcologicalServices/pdf/endangered/NorthernRedBelliedCooter.pdf> (accessed October 2015). These plans are discussed in more detail in chapters 2 and 3.

**Conservation Strategy for
the New England Cottontail
and the New England
Cottontail Species Spotlight
Action Plan**

The *Conservation Strategy for the New England Cottontail (Sylvilagus transitionalis)* (Fuller and Tur 2012) identifies the threats to the New England cottontail, goals and actions to reduce and mitigate these threats, and measures to monitor the success of the plan. The plan identifies habitat fragmentation and habitat loss, and competition from Eastern cottontail as the major threats to New England cottontail population growth. The species is dependent on early successional habitats, such as old fields, shrub thickets, young regenerating forests, and other shrubby areas. These types of early successional habitats are currently declining throughout New England as they naturally succeed to forest. Human development has also eliminated and fragmented habitat for the New England cottontail. The refuge provides opportunities to create and maintain the early successional habitats that benefit the species, as well as other shrub-dependent wildlife. The *Conservation Strategy for the New England cottontail* is available online at: http://www.newenglandcottontail.org/sites/default/files/conservation_strategy_final_12-3-12.pdf (accessed October 2015).

The *New England Cottontail Species Spotlight Action Plan* (USFWS 2009), a precursor to the Conservation Strategy, identifies the goals, measurements, and actions for the Service and its regional and State partners to address the threats to the New England cottontail. This preliminary report can be viewed online at: <http://newenglandcottontail.org/resource/appendix-g-new-england-cottontail-spotlight-species-action-plan> (accessed October 2015).

Cohesive [Wildland Fire] Strategy—Northeast Region

In the Northeast, to address changing wildland fire challenges, Federal, Tribal, state, local, and private organizations have committed to a cohesive, strategic approach toward effective wildland fire management, mitigation, and response. The *Cohesive Strategy* is a collaborative effort to manage growing wildland fire challenges across all lands regardless of ownership. Additional information on the *Cohesive Strategy* can be found at http://www.forestsandrangelands.gov/strategy/Regional_Strategy_Committees/Northeast/index.shtml (accessed October 2015).

Other Information Sources

The plans and resources listed below were also consulted to refine the management objectives and strategies of this CCP.

Continental or National Plans

- *National Audubon Society Watch List* (Butcher et al. 2007); available at: http://www.audubon.org/sites/default/files/documents/watchlist2007_printable_list_populations.pdf (accessed October 2015).
- *U.S. Geological Survey National Wetlands Research Center Strategic Plan 2010-2015*; available at: <http://www.nwrc.usgs.gov/about/5-year-plan.htm> (accessed October 2015).
- *State of the Birds 2010 Report on Climate Change* (NABCI 2010; available at: http://www.stateofthebirds.org/2010/pdf_files/State%20of%20the%20Birds_FINAL.pdf (accessed October 2015).

State Plans

- *State of the Birds Report-Documenting Changes in Massachusetts' Birdlife* (MassAudubon 2011); available at: <http://www.massaudubon.org/content/download/9510/156446/file/state-of-the-birds-2011-document.pdf> (accessed October 2015).
- *Living Waters Program* (NHESP 2004); available at: <https://ia801609.us.archive.org/0/items/livingwatersguid00mass/livingwatersguid00mass.pdf> (accessed October 2015).
- *Classification of the Natural Communities of Massachusetts. Version 1.3.* (Swain and Kearsley 2011); available at: <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/natural-communities/classification-of-natural-communities.html> (accessed October 2015).
- *Our Irreplaceable Heritage-Protecting Biodiversity in Massachusetts* (Barbour et al. 1998). This document is available for review at the Eastern Massachusetts National Wildlife Refuge Complex headquarters.

Local Plans

- *Resource Management Plan-Myles Standish Unit including Myles Standish State Forest* (Massachusetts Department of Conservation and Recreation (MADCR) 2011); available at: <http://www.mass.gov/eea/docs/dcr/stewardship/rmp/mssf-mtholyoke-wbnerr/rmp-mssf.pdf> (accessed October 2015).

Refuge Establishing Purpose and Land Acquisition History

The refuge was established in 1983 and currently encompasses 209 acres. The official refuge establishment purpose is:

“ . . . to conserve the federally endangered Plymouth red-bellied turtle, as well as other wildlife and plant species; 16 U.S.C. § 1534” (ESA).

On September 21, 1983, the refuge was established with the purchase of the 184-acre main parcel including Crooked Pond, and shoreline on Gunner’s Exchange Pond. A 15-acre parcel was purchased in 2002 and has frontage on Island Pond. In 2006, a 10-acre parcel with shoreline on Hoyt Pond was purchased from TNC with funding from the Land and Water Conservation Fund (LWCF). Table 1-1 summarizes the land acquisition history for the refuge. No additional land can be added to the boundary without undergoing additional analysis and Washington Office approval because the Service has acquired all the land within the refuge’s approved acquisition boundary.

Table 1-1. Land Acquisition History for Massasoit NWR.

Refuge Parcel	Acres	Date Acquired	Funds
Crooked Pond	184	1983	ESA
Island Pond with easement	15	2002	ESA
Hoyt Pond	10	2006	LWCF
Total Acres	209		

Refuge Administration

The Refuge Complex has 15 permanent staff, although two positions are currently vacant. Twelve are located at the Refuge Complex headquarters and include: a project leader, a deputy project leader, a wildlife refuge specialist, an administrative support assistant, two wildlife biologists, two park rangers, two Federal wildlife officers, and two maintenance workers. The other three permanent staff are located at Monomoy NWR in Chatham, Massachusetts: a refuge manager, wildlife refuge specialist, and a biologist. Additionally, term and temporary staff, interns, and volunteers work at the Refuge Complex at various times throughout the year.

Refuge Operational Plans (“Stepdown” Plans)

Refuge planning policy lists more than 25 stepdown management plans that may be required on refuges. These plans contain specific strategies and implementation schedules for achieving refuge goals and objectives. Some plans require annual revisions; others require revision every 5 to 10 years. Some require additional NEPA analysis, public involvement, and compatibility determinations before they can be implemented.

This draft CCP/EA incorporates by reference those refuge stepdown plans that are up-to-date. Chapter 3 provides more information about the additional stepdown plans needed for the refuge.

The following stepdown plans are complete, and apply to all eight refuges in the Refuge Complex:

- Avian Influenza Surveillance and Contingency Plan—completed in 2007.
- Chronic Wasting Disease Surveillance and Contingency Plan—completed in 2007.

- Fire Management Plan (FMP)—completed in 2003; will be updated by 2017. See appendix D for the current Fire Management Guidance.
- Hurricane Action Plan—updated annually.
- Continuity of Operations Plan—updated annually.
- Spill Prevention and Counter Measure Plan—updated in 2012.

Additional stepdown plans will be completed following approval of the CCP (see chapter 3).

Eastern Massachusetts Refuge Complex Vision Statement

In 2003, the staff from the Refuge Complex developed the following vision statement as a guide for all refuges within the Refuge Complex.

The Refuge Complex will contribute to the mission of the Refuge System and support ecosystem-wide priority wildlife and natural communities. Management will maximize the diversity and abundance of fish and wildlife with emphasis on threatened and endangered species, migratory birds, and aquatic resources. The Refuge Complex will have a well-funded and community-supported acquisition program which contributes to wildlife conservation. The refuges will be well known nationally and appreciated in their communities. They will be seen as active partners in their communities, school systems, and environmental organizations which will result in high levels of support for the refuges. The refuges will be a showcase for sound wildlife management techniques and will offer top-quality, compatible, wildlife-dependent recreational activities. Refuges open to the public will provide staffed visitor contact facilities that are clean, attractive, and accessible, with effective environmental education and interpretation.

Refuge Vision Statement

The following vision statement was prepared to provide a guiding philosophy and sense of purpose for the CCP effort at the Massasoit NWR:

The pine-oak habitat and coastal plain ponds that comprise Massasoit National Wildlife Refuge are an integral component of the southeast Massachusetts landscape and its biodiversity, and are part of the largest contiguous pitch pine-oak habitat north of the Long Island Sound. This dynamic, fire-dependent ecosystem supports numerous invertebrate and bird species of conservation concern. The kettle-hole ponds in this system also support and contribute to the recovery of the federally endangered northern red-bellied cooter, a geographically distinct population found only in Massachusetts.

Through public and partner engagement, we promote ecologically responsible stewardship of the resources on the refuge and in the larger landscape and foster an appreciation and understanding of the intrinsic value of these resources.

Northern red-bellied cooter



USEFWS

Refuge Goals

The following refuge goals were developed after considering the vision statement, the purpose for establishing the refuge, the missions of the Service and the Refuge System, and the mandates, plans, and conservation initiatives previously discussed. These goals are intentionally broad, descriptive statements of purpose. They highlight elements of the vision for the refuge that will be emphasized in its future management. The biological goals take precedence; however, we do not present them in any particular order.

Goal 1: Perpetuate the biological integrity, diversity, and environmental health of the pitch pine-oak forest habitat type and associated coastal plain ponds and wetlands on Massasoit NWR to sustain native wildlife, especially species of conservation concern, such as the federally listed northern red-bellied cooter.

Goal 2: Promote awareness and support for the protection of sensitive resources on Massasoit NWR through community outreach and opportunities for connecting the public to the refuge's natural resources.

Goal 3: Enhance collaborations with Federal and State agencies, conservation organizations, and local communities to promote species and habitat conservation across the pitch pine-oak landscape in southeastern Massachusetts, and to support Massasoit NWR's purpose and the Refuge System and Service missions.

The Comprehensive Conservation Planning Process

Service policy establishes an eight-step CCP planning process that also facilitates compliance with NEPA (Figure 1-1), and is the process followed in developing this draft CCP/EA. For more information on the planning policies, view online at: <http://www.fws.gov/northeast/planning/policy.html> (accessed July 2016).

Since 1983, the focus has been on conserving lands within the approved refuge boundary, managing habitat for such focal species as the northern red-bellied cooter, and establishing relationships with the community and our partners. In 1999, the process described above was initiated to develop a CCP that would encompass all of the refuges in the Refuge Complex. A Notice of Intent (NOI) was published in the *Federal Register*. By 2001, a determination was made that writing a plan for eight refuges was too cumbersome, and the decision was made to focus on CCPs for the three northernmost refuges in the Refuge Complex.

After finishing three Refuge Complex CCPs and initiating three others, the Massasoit CCP was re-initiated. In January 2012, a NOI was published in the *Federal Register* announcing the start of this CCP process for Massasoit NWR.

A core team was convened in March 2012 consisting of refuge staff and representatives from MassWildlife, including the NHESP. The Wampanoag Tribe of Gay Head (Aquinnah) and the Mashpee Wampanoag Tribe were invited to join the core team as well. The core team initiated "Step A: Preplanning" with discussions on management issues, drafting of a vision statement and tentative goals, and compilation of a project mailing list of known stakeholders, interested individuals, organizations, and agencies."

In April 2012, the public was engaged during "Step B: Initiate Public Involvement and Scoping," by distributing a planning update newsletter to approximately 100 individuals, organizations, and agencies, announcing the beginning of the planning process and the upcoming public meeting in April 2012. The meeting was advertised in local papers, posted on the refuge's Website, and advertised through local partners' networks.

Early in April 2012, stakeholder and public scoping meetings were held in Plymouth, Massachusetts, to discuss previously identified public issues and concerns, determine whether new issues existed or previously identified issues had changed, share the draft vision statement and tentative goals, describe

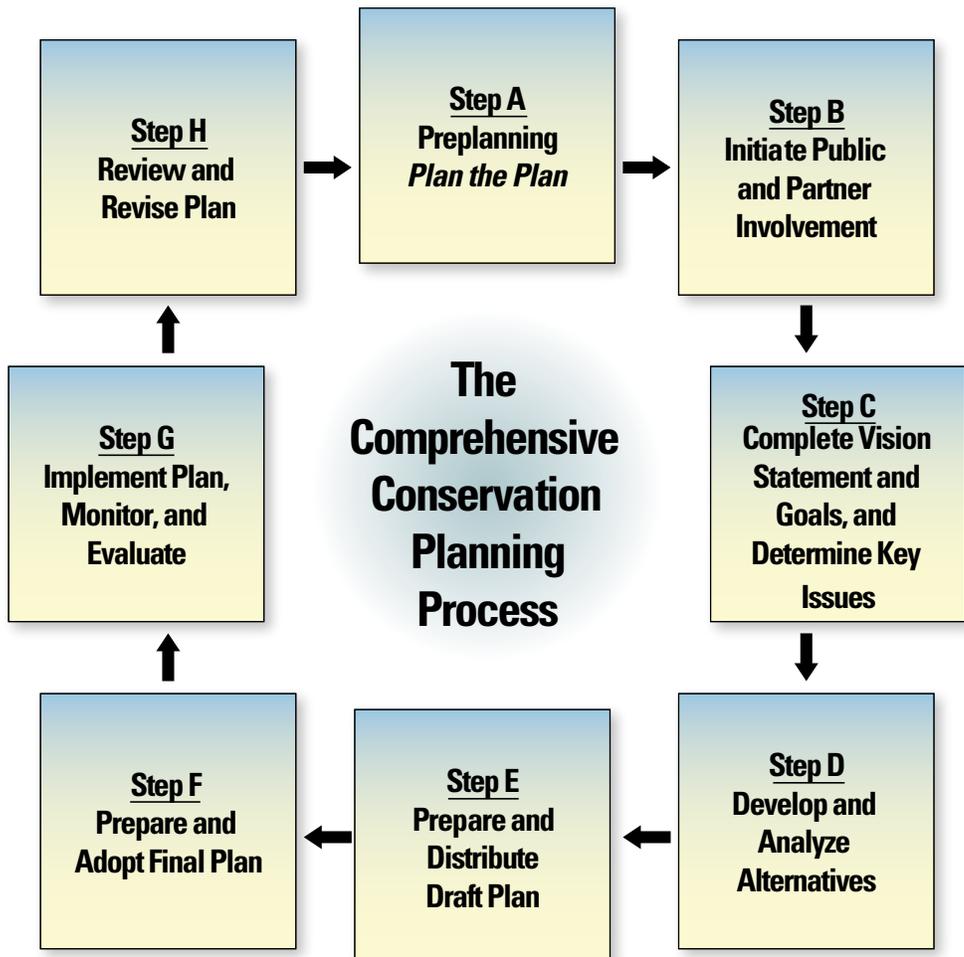
the planning process, and explain how people could become involved and stay informed about the process. Those meetings helped refine the partner and public concerns that would need to be addressed in the planning process. A public meeting was held that was attended by 11 members of the public. This meeting was followed by a comment period where public and partner issues and concerns were voiced through emails, letters, and comment form submissions.

The next planning team meeting was held in June 2012 where “Step C: Review Vision Statement, Goals, and Identify Significant Issues” and “Step D: Develop and Analyze Alternatives” were addressed and key issues were identified. As a result, two preliminary management alternatives were drafted along with identified strategies under each alternative.

The core team continued to meet in August 2012 and November 2012 to further develop the objectives and strategies for each alternative. Work on the draft CCP/EA continued at a slow pace while CCPs were completed for Nomans Land Island, Nantucket, and Monomoy refuges.

This draft CCP/EA represents “Step E: Prepare Draft Plan and NEPA document.” A Notice of Availability (NOA) will be published in the *Federal Register* announcing release of this draft for a 60-day period of public review and comment. During the comment period, public meetings will be held and comments will also continue to be received by regular and electronic mail. After the comment period ends, all comments received will be reviewed and summarized, and responses developed and published in an appendix to the final CCP.

Figure 1-1. The Comprehensive Conservation Planning Process.



The final CCP will be submitted to the Regional Director for approval, who will determine whether it warrants a Finding of No Significant Impact (FONSI), and also if its analyses are adequate to issue a decision at that same time. The Regional Director may require a revision of the EA or may determine that there are potentially significant impacts and require preparation of an environmental impact statement. The Regional Director's final decision will be announced as a NOA in the *Federal Register*, wherein the public will be informed of the availability of the final CCP. This announcement will complete "Step F: Prepare and Adopt a Final Plan."

On approval of the Regional Director, "Step G: Implement Plan, Monitor and Evaluate" can begin. As part of "Step H: Review and Revise Plan," the final CCP will be modified and revised as warranted following the procedures in Service policy (602 FW 1, 3, and 4) and NEPA requirements. Minor revisions that meet the criteria for categorical exclusions (550 FW 3.3C) will require only an environmental action memorandum. As stipulated by the Improvement Act and Service policy, the CCP will be reviewed and revised every 15 years.

Wilderness Review

The purpose of a wilderness review is to identify and recommend for congressional designation Refuge System lands and waters that merit inclusion in the NWPS. Wilderness reviews (610 FW) are a required element of CCPs and conducted in accordance with the refuge planning process outlined in 602 FW 1 and FW 3, including public involvement and NEPA compliance. The planning team initiated a Wilderness Review, as required by refuge planning policy, to determine if any portions of Massasoit NWR warranted a proposal for designation as wilderness.

There are three phases to the wilderness review process: (1) inventory, (2) study, and (3) recommendation. Lands and waters that meet the minimum criteria for wilderness are identified in the inventory phase and are called wilderness study areas (WSAs). In the study phase, a range of management alternatives are evaluated to determine if a WSA is suitable for wilderness designation or management under an alternate set of goals and objectives that do not include wilderness designation.

The recommendation phase consists of forwarding or reporting the suitable recommendations from the Director, through the Secretary, and the President to Congress in a wilderness study report. The wilderness study report is prepared after a final CCP has been approved.

Areas recommended for designation are managed to maintain wilderness character in accordance with management goals, objectives, and strategies outlined in the final CCP until Congress makes a decision or the CCP is amended to modify or remove the wilderness proposal.

Appendix C summarizes the inventory phase of our wilderness review for Massasoit NWR. We determined that no portion of Massasoit NWR meets the eligibility criteria for further detailed study as a WSA as defined by the Wilderness Act.

Issues, Concerns, and Opportunities

An "issue" is defined as "any unsettled matter requiring a management decision." An issue can be an "initiative, opportunity, resource management problem, threat to a resource, conflict in use, or a public concern" (602 FW3). Issues arise from many sources, including Service staff and other Service programs, State agencies, other Federal agencies, partners, neighbors, user groups, or Congress. One of the distinctions among the proposed management alternatives is how each

addresses those issues. The following summary provides a context for the issues that arose during the public and stakeholder scoping process.

Habitat and Species Management

The primary purpose of national wildlife refuges is the conservation of wildlife and habitats. Based on the establishing purpose for this refuge, and the discussions that took place up to the time of its establishment, the primary justifications for creating the refuge was the conservation of the federally endangered northern red-bellied cooter and other wildlife and plant species of conservation concern.

This plan addresses important issues including the best approaches to protect, restore, and coordinate the management of habitat and wildlife resources, including the cooter, on the refuge and surrounding area. The following key issues and concerns were raised regarding habitat and species management, and are addressed in the plan:

- What are the current population numbers for the northern red-bellied cooter and how effective are the efforts in recovery of the species?
- How will habitat for the northern red-bellied cooter be effectively managed while considering the management for a diversity of wildlife and plant species?
- How will protection and management of State-listed endangered and threatened species including rare moths and plants be supported?
- What opportunities are there for the protection of the New England cottontail?
- What role will prescribed burns play in habitat management?
- How will inventory and monitoring of the wildlife resources on the refuge be accomplished through the use of Service personnel, volunteers, or partners?
- Where appropriate, should the Service contribute to the inventory and monitoring of wildlife resources on conservation lands near the refuge?
- How will a healthy refuge ecosystem and the aquifer within which the refuge exists be maintained?
- Will the Service continue prescribed burning and mechanical clearing to reduce wildland fire risk?

Public Access

Refuges remain closed to the public for all uses until officially “opened” through a formal, public compatibility process. Eventually, most refuges are opened to some type of public use, but some may remain closed to maintain the conservation purpose of the refuge or to protect public safety. Massasoit NWR has been closed to the public since it was established in order to reduce disturbance to the northern red-bellied cooter. Providing compatible public use is a priority in the Improvement Act; thus, our challenge is to determine what, if any, types and amount of public use can be sustained at this small refuge.

During the partner and public scoping, the following key issues or concerns regarding public access were expressed:

- What, if any, public access will be provided given a strongly divided public reaction to opening the refuge?

- What public uses will be provided on the refuge including requested recreational uses such as walking, wildlife observation, photography, hunting, and horseback riding? Will hunting be allowed on the refuge for recreational purposes and for assisting in the management of eastern Massachusetts deer population?
- How will unauthorized use of the refuge, including off road vehicles (ORVs), fishing and swimming in Crooked Pond, dog walking, horseback riding, and other uses be enforced?
- What potential impacts are there to the northern red-bellied cooter from any public use?
- How will protection of the endangered northern red-bellied cooter be ensured if the refuge is open to public access?
- Should the refuge remain closed to public access to protect the final remaining contiguous area of the pitch pine-scrub oak habitat?

Education and Awareness

A common concern expressed by the public and stakeholders was promoting increased public awareness of the refuge, and the following are key issues or concerns expressed about education and awareness:

- What kinds of signage and interpretation can be used to increase public understanding of the resources, especially for the protection of the northern red-bellied cooter, consequences of misuse of sensitive areas on the refuge, and limitations on public access?
- What role can the Service play in promoting environmental education through a partnership with the MSSF and its associated Friends Group and the nature center that is planned on State Forest land?
- How will the educational needs of children be addressed to increase their connectivity to nature and their knowledge and awareness of the significance of the resources on the refuge?
- How do we improve outreach for the refuge to the public and potential partners and stakeholders?

Partnerships

As a relatively small refuge within the 17,000-acre Refuge Complex, it is important for the Service to utilize partnerships to the fullest extent to meet the establishing purpose of the refuge and its associated goals of the CCP. Both the public and stakeholders expressed this idea, and the following are key issues or concerns that arose about partnerships:

- How will the Service partner with the MSSF to achieve the habitat management, public use, and environmental education goals of the refuge?
- What partners will the Service coordinate with to expand the restoration, protection, and conservation efforts of the northern red-bellied cooter population in the region?
- How will volunteers, including the Friends of Myles Standish State Forest and experts on species and habitats, be utilized to achieve the refuge goals?

Land Protection

- Land protection to benefit both the management of northern red-bellied cooter populations and other wildlife and plant species was strongly supported during the scoping process.
- The following are key issues and concerns that were presented regarding land protection:
 - What strategic approach will the Service take in land protection to potentially expand the refuge boundaries and expand the efforts toward the northern red-bellied cooter recovery?
 - Is there a potential for partnerships with the municipalities, conservation organizations, State, or Tribal government to protect additional lands and share fiscal resources in a strategic manner that achieves the purpose of the refuge?
 - What partner resources will be used to promote awareness and land protection in the region?

Island Pond shoreline on Massasoit National Wildlife Refuge



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