Chapter 1

Carolina Ferro Vasconcelos/USFWS

Umbagog Lake

Purpose of and Need for Action

Introduction

The Lake Umbagog National Wildlife Refuge consists of 20,513 acres in Coos County, New Hampshire, and Oxford County, Maine. Established in 1992, its purposes are to provide long-term protection for unique wetlands, threatened or endangered species and migratory birds of conservation concern, and sustain regionally significant concentrations of wildlife. Approximately half of the refuge consists of forested and non-forested wetland habitats and water, and half of forested upland habitat typical of the Northern Forest ecosystem.

This draft combines two documents required by federal law.

- A comprehensive conservation plan, required by the National Wildlife Refuge System Administration Act of 1996 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Pub. L. 105-57; 111 Stat. 1253).

- An environmental impact statement, required by the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.; 83 Stat. 852), as amended.

Chapter 1 explains the purpose and need for preparing a CCP/EIS, and sets the stage for 5 subsequent chapters and 14 appendixes. It

- defines our planning analysis area,

- presents the mission, policies and mandates affecting the development of the plan,

- identifies other conservation plans we used as references,

- lists the purposes for which the refuge was established and its land acquisition history,

- clarifies the vision and goals that drive refuge management,

- describes our planning process and its compliance with NEPA regulations, and

- identifies public issues or concerns that surfaced during plan development.

Chapter 2, “Description of the Alternatives,” presents three management alternatives with different strategies for meeting refuge goals and objectives and addressing public issues, for example, continuing our present management of the refuge unchanged, or managing it according to our Service-preferred alternative. It fully evaluates three reasonable alternatives for achieving the goals and addressing the public issues below. Following public review of this draft CCP/EIS, our Regional Director’s decision on the management alternatives will result in a final CCP to guide refuge management decisions over the next 15 years. We will also use it to promote understanding and support for refuge management among state agencies in New Hampshire and Maine, our conservation partners, tribal governments, local communities and the public.

Chapter 3, “Description of the Affected Environment,” describes the physical, biological, and human environment of the refuge.

Chapter 4, “Environmental Consequences,” evaluates the environmental consequences of implementing each of the three management alternatives. That is, it predicts their foreseeable benefits and consequences for the socioeconomic, physical, cultural, and biological environments described in chapter 3.

Chapter 5, “List of Preparers,” credits this plan’s contributors.

Chapter 6, "Consultation and Coordination with Others," summarizes how we involved the public and our partners in the planning process. Their involvement is vital for the future management of the refuge.

Fourteen appendixes provide additional supporting documentation and references.

The Purpose of and Need for the Proposed Action

We propose to develop a final CCP for the refuge that best achieves its purposes, vision, and goals; contributes to the mission of the National Wildlife Refuge System (Refuge System); adheres to U.S. Fish and Wildlife Service (Service) policies and other mandates; addresses significant issues; and incorporates sound principles of fish and wildlife science.

NEPA regulations require us to evaluate a reasonable range of alternatives, including our preferred action and no action. The no-action alternative can mean either (1) not managing the refuge, or (2) not changing its present management. In this plan, alternative A is the latter.

The *purpose of* a CCP is to provide each refuge with strategic management direction for the next 15 years, by

- stating clearly the desired future conditions for refuge habitat, wildlife, visitor services, staffing, and facilities;
- explaining clearly to state agencies, refuge neighbors, visitors, and partners the reasons for management actions;
- ensuring that refuge management conforms to the policies and goals of the Refuge System and legal mandates;
- ensuring that present and future public uses are compatible with the purposes of the refuge;
- providing long-term continuity and direction in refuge management; and,
- justifying budget requests for staffing, operating and maintenance funds.

There are several reasons we identify a *need for* this CCP. First, the Refuge Improvement Act requires us to write a CCP for every national wildlife refuge to help fulfill the mission of the Refuge System.

Second, the Lake Umbagog Refuge lacks a master plan to accomplish the actions above, yet its environment has changed dramatically over the past decade. For example, the economy and land ownership patterns in local communities have changed; pressures for public access have continued to grow; and new ecosystem and species conservation plans bearing directly on refuge management have been developed.

Third, we need to evaluate locations for a proposed new refuge headquarters and visitor contact facility.

Fourth, we have developed strong partnerships vital for our continued success, and we must convey our vision for the refuge to those partners and the public.

Finally, we need a CCP to guide us in conserving land to protect federal trust species in the Northern Forest. The refuge has acquired most of its land in the last 5 years.

All of those reasons clearly underscore the need for the strategic direction a CCP provides. To help us resolve management issues and public concerns, our planning process incorporates input from the natural resource agencies of New Hampshire and Maine, affected communities, individuals and organizations, our partners and the public.

Regional Context and Project Analysis Areas

The regional context for our analysis is the Upper Androscoggin River watershed (map 1–1). Our analysis uses the definition of the watershed developed by the Appalachian Mountain Club (AMC; Publicover and Weihrauch 2003). The AMC defines a larger watershed than does the U.S. Geological Survey (USGS). The AMC-defined watershed includes an area below Shelburne Dam draining south of the Mahoosuc Range and Elephant Mountain that shares many of the "north country" characteristics north of the Mahoosuc Range (Publicover and Weihrauch 2003).

The watershed boundary on map 1–1 defines the socioeconomic and ecological context for evaluating the relationship of the refuge to regional resources of concern. The land ownership, land use or management patterns in that political, social, and ecological environment may affect our management of the refuge. Of particular note, map 1–1 also depicts the regional land conservation network in and around the watershed. More than a dozen partners cooperate in that network, of which the refuge lands form an integral part.

The watershed covers more than 2,300 square miles in northern New Hampshire and western Maine. At its northernmost point, it drains the south slopes of the mountains along the Canadian border. It includes all areas that drain into the Androscoggin River upstream of its confluence with the Web River in Dixfield, Maine. The Androscoggin River starts at the outlet of Umbagog Lake.

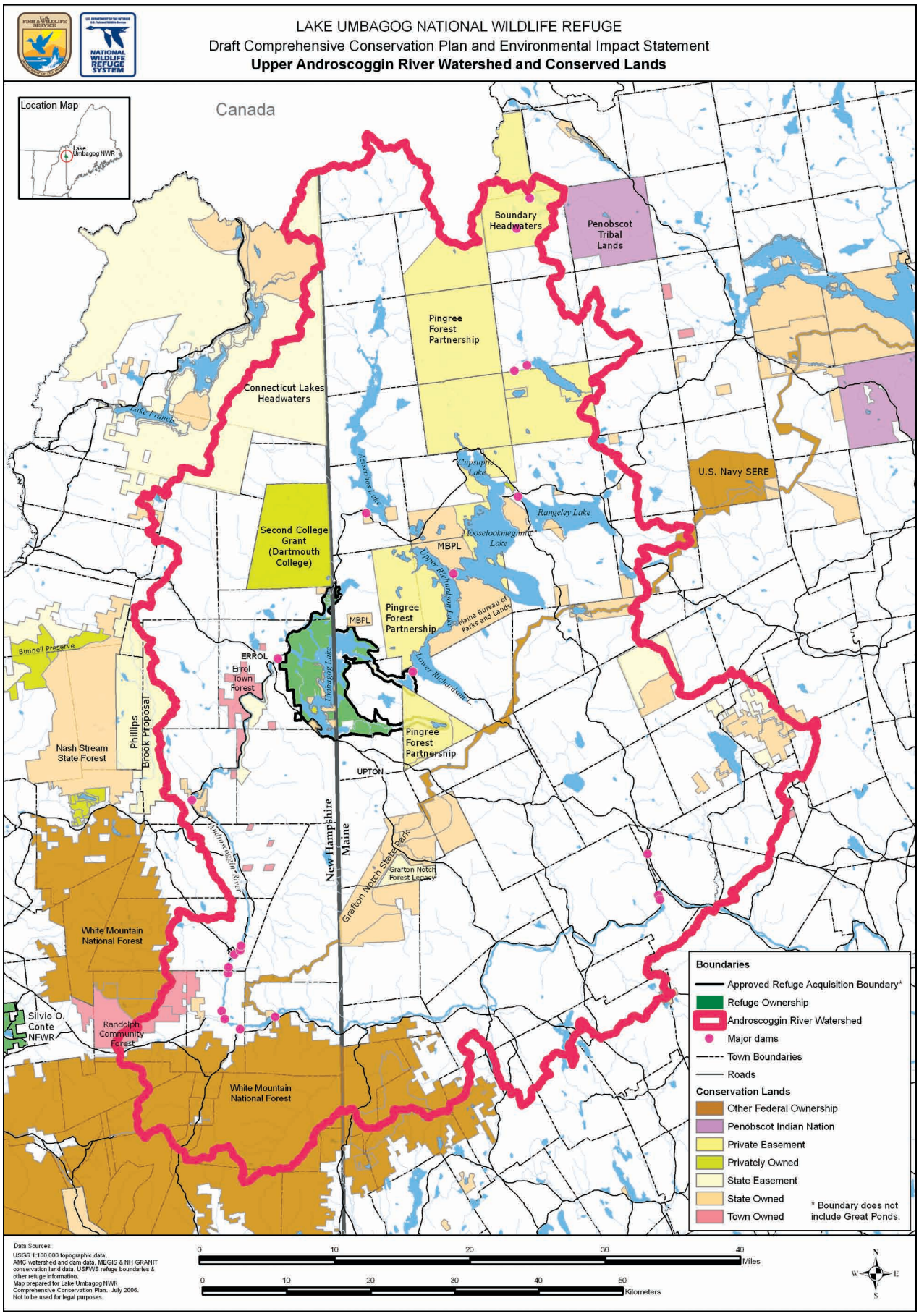
Forest covers most of the rugged mountains, steep slopes and narrow valleys in the watershed landscape. Human population densities there are relatively low; many of the northern reaches lack permanent populations. The AMC "Ecological Atlas of the Upper Androscoggin Watershed" (Publicover and Weihrauch 2003) provides more details on the land use history, land ownership patterns, natural history, habitat types, and conservation challenges in the watershed.

In cooperation with our state partners, we also developed a project analysis area within the watershed: an area of influence immediately around the refuge (map 1–2). Management or other activities in our project analysis area could directly affect refuge resources or influence our ability to achieve its purposes, vision, or goals. We did not distinguish among the types of private land ownership or land development within that boundary. It includes the incorporated towns of Errol, New Hampshire, and Magalloway and Upton, Maine; the unincorporated towns of Wentworth Location and Cambridge, New Hampshire; private land trusts, undeveloped lands owned by timber companies, and conservation lands owned by state or federal agencies.

The Service and the Refuge System Policies and Mandates Guiding Planning

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

The Service is part of the Department of the Interior. Our 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."*


LAKE UMBAGOG NATIONAL WILDLIFE REFUGE
Draft Comprehensive Conservation Plan and Environmental Impact Statement
Upper Androscoggin River Watershed and Conserved Lands
Location Map
Lake Umbagog NWR
Canada
Boundary Headwaters
Penobscot Tribal Lands
Pingree Forest Partnership
Connecticut Lakes Headwaters
Lake Francis
Umsuptic Lake
Rangeley Lake
Mooselookmeguntic Lake
U.S. Navy SERE
Second College Grant (Dartmouth College)
MBPL
Upper Richardson Lake
Maine Bureau of Parks and Lands
Lower Richardson Lake
Umbagog Lake
ERROL
Errol Town Forest
Bunnell Preserve
Phillips Brook Proposal
Nash Stream State Forest
UPTON
New Hampshire
Maine
Androscoggin River
Grafton Notch State Park
Grafton Notch Forest Legacy
White Mountain National Forest
Silvio O. Conte NFWR
Randolph Community Forest
Boundaries
Approved Refuge Acquisition Boundary*
Refuge Ownership
Androscoggin River Watershed
Major dams
Town Boundaries
Roads
Conservation Lands
Other Federal Ownership
Penobscot Indian Nation
Private Easement
Privately Owned
State Easement
State Owned
Town Owned
* Boundary does not include Great Ponds.
Data Sources:
USGS 1:100,000 topographic data, AMC watershed and dam data, MEGIS & NH GRANIT conservation land data, USFWS refuge boundaries & other refuge information.
Map prepared for Lake Umbagog NWR Comprehensive Conservation Plan. July 2006.
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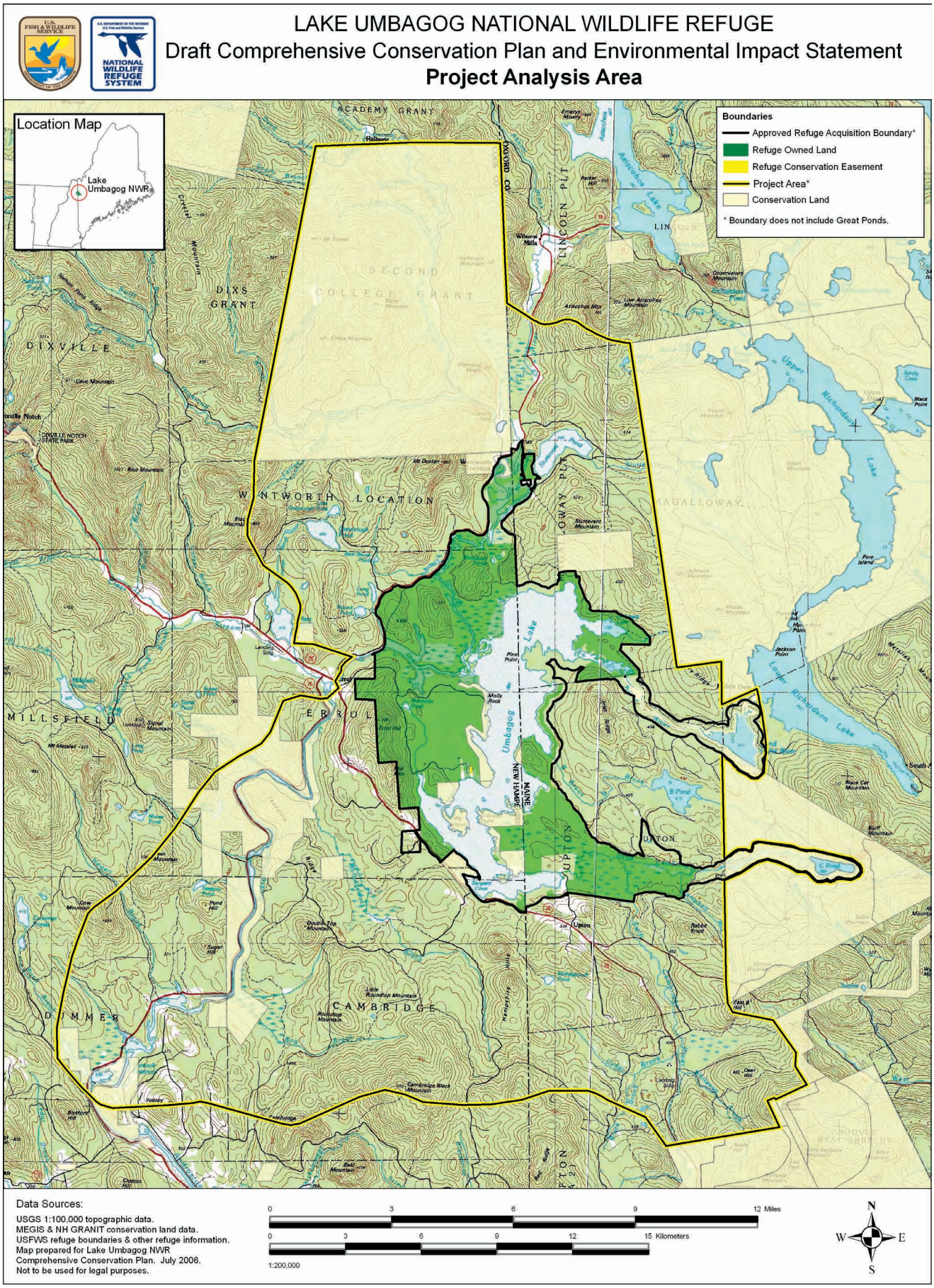
N W E S


LAKE UMBAGOG NATIONAL WILDLIFE REFUGE
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Project Analysis Area
Location Map
Lake Umbagog NWR
Boundaries
Approved Refuge Acquisition Boundary*
Refuge Owned Land
Refuge Conservation Easement
Project Area*
Conservation Land
* Boundary does not include Great Ponds.
ACADEMY GRANT
SECOND COLLEGE GRANT
DIXS GRANT
DIXVILLE
WENTWORTH LOCATION
ERROL
MILLSFIELD
DUMMER
CAMBRIDGE
UPTON
LINCOLN PLT
Umbagog Lake
Upper Richardson Lake
Lower Richardson Lake
MAINE
NEW HAMPSHIRE
Data Sources:
USGS 1:100,000 topographic data.
MEGIS & NH GRANIT conservation land data.
USFWS refuge boundaries & other refuge information.
Map prepared for Lake Umbagog NWR
Comprehensive Conservation Plan. July 2006.
Not to be used for legal purposes.
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Congress entrusts to the Service the conservation and protection of these national natural resources: migratory birds and fish, federal-listed endangered or threatened species, inter-jurisdictional fish, wetlands, certain marine mammals, and national wildlife refuges. We also enforce federal wildlife laws and international treaties on importing and exporting wildlife, assist states with their fish and wildlife programs, and help other countries develop conservation programs.

The Service manual, available online at *http://www.fws.gov/policy/manuals*, contains the standing and continuing directives on fulfilling our responsibilities. The 600 series of the Service manual addresses land use management, and sections 601-609 specifically address management of national wildlife refuges.

We publish special directives that affect the rights of citizens or the authorities of other agencies separately in the Code of Federal Regulations (CFR); the Service manual does not duplicate them (see 50 CFR 1–99 online at *http://www.access.gpo.gov/nara/cfr/index.html*).

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 545 national wildlife refuges encompass more than 95 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 on refuges.

In 1997, President William Jefferson Clinton signed into law the Refuge Improvement Act. That act establishes a unifying mission for the Refuge System.

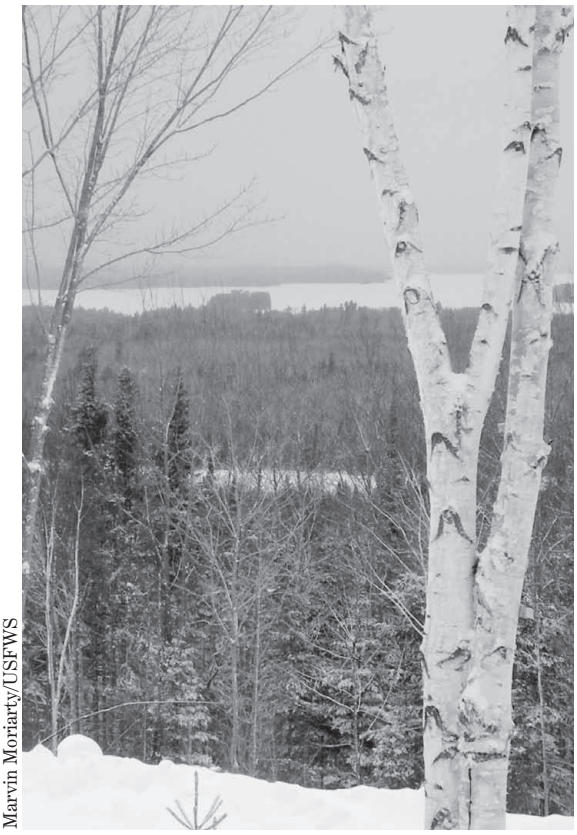
> "The mission of the System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."
>
> —Refuge Improvement Act; Public Law 105-57

It also establishes a new process for determining the compatibility of public uses on refuges, and requires us to prepare a CCP for each refuge. The act states that the Refuge System must focus on wildlife conservation. It also states that the mission of the Refuge System, coupled with the purposes for which each refuge was established, will provide the principal management direction on that refuge.

The Refuge System 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 polices and guidelines on enforcing laws. You can review that manual at refuge headquarters. These are a few noteworthy policies instrumental in developing this CCP.

Policy on Refuge System Planning
This policy (602 FW 1, 2, and 3) establishes the requirements and guidance for Refuge System planning, including CCPs and step-down management plans. It states that we will manage all refuges in accordance with an approved CCP that, when implemented, will help

- achieve refuge purposes;
- fulfill the Refuge System mission;
- maintain and, where appropriate, restore the ecological integrity of each refuge and the Refuge System;



Marvin Moriarty/USFWS

Umbagog Lake in winter

- achieve the goals of the National Wilderness Preservation System and the National Wild and Scenic Rivers System; and,
- conform to other mandates.

That planning policy provides guidance, systematic direction, and minimum requirements for developing all CCPs, and provides a systematic decision-making process that fulfills those requirements. Among them, we are to review any existing special designation areas or the potential for such designations (e.g., wilderness and wild and scenic rivers); and, incorporate a summary of those reviews into each CCP (602 FW 3).

Policy on Maintaining Biological Integrity, Diversity, and Environmental Health
This 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 environmental components. It also provides guidelines for dealing with external threats to the biological integrity, diversity, and environmental health of a refuge and its ecosystem (601 FW 3).

Policy on Appropriateness of Refuge Uses
Federal law and Service policy provide the direction and planning framework for protecting the Refuge System from inappropriate, incompatible or harmful human activities and ensuring that visitors can enjoy its lands and waters. This policy (603 FW 1) provides a national framework for determining appropriate refuge uses in an effort to prevent or eliminate those uses that should not occur in the Refuge System. It describes the initial decision process the refuge manager follows when first considering whether or not to allow a proposed use on a refuge. An appropriate use must meet at least on of the following four conditions:

1) The use is a wildlife-dependent recreational use as identified in the Refuge Improvement Act.
2) 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 Refuge Improvement Act was signed into law.
3) The use involves the take of fish and wildlife under State regulations.
4) The use has been found to be appropriate after concluding a specified findings process using 10 criteria.

This policy can be viewed on-line at *http://www.fws.gov/policy/library/06-5645.pdf.*

Policy on Compatibility
This policy (603 FW 2) complements the appropriateness policy. The refuge manager must first find a use is appropriate before undertaking a compatibility review of that use. If the proposed use is not appropriate, the refuge manager will not allow the use and will not prepare a compatibility determination.

This policy and its regulations, including a description of the process and requirements for conducting compatibility reviews, can be viewed on-line at *http://policy.fws.gov/library/00fr62483.pdf* . Our summary follows.

- The Refuge Improvement Act and its regulations require an affirmative finding by the refuge manager on the compatibility of a public use before we allow it 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 our 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; or 10 years for other uses.
- However, the refuge manager may reevaluate the compatibility of any use at any time: for example, sooner than its mandatory date, or even before we complete the CCP process, if new information reveals unacceptable impacts or incompatibility with refuge purposes (602 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.

Other Mandates

Although Service and Refuge System policy and the purposes of each refuge provide the foundation for its management, other federal laws, executive orders, treaties, interstate compacts, and regulations on conserving and protecting natural and cultural resources also affect how we manage refuges. A centralized library of Service-wide policies, executive orders, director's orders, and the "Digest of Federal Resource Laws of Interest to the U.S. Fish and Wildlife Service" can be viewed at *http://www.fws.gov/policy/*.

Federal laws also require the Service to identify and preserve its important historic structures, archaeological sites, and artifacts. NEPA mandates our consideration of cultural resources in planning federal actions. The Refuge Improvement Act requires that the CCP for each refuge identify its archaeological and cultural values.

The National Historic Preservation Act (Pub. L. 102–575; 16 U.S.C. 470) requires federal agencies to locate and protect historic resources—archaeological sites and historic structures eligible for listing or listed in the National Register of Historic Places and museum property—on their land or on land affected by their activities. It also requires agencies to establish a program for those activities and carry them out in consultation with State Historic Preservation Offices (SHPOs).

The NHPA also charges federal agencies with locating, evaluating, and nominating sites on their land to the National Register of Historic Places. We maintain an inventory of known archaeological sites and historic structures in the Northeast Regional Office and file copies of the sites at each refuge. Our regional historic preservation officer in Hadley, Massachusetts, oversees our

compliance with the NHPA and our consultations with state SHPOs. We must also comply with the Archaeological Resources Protection Act (Pub. L. 96–95, 16 U.S.C. 470aa-mm). It requires that we protect our archaeological sites from vandalism or looting and issue permits for site excavation.

The Service also owns and cares for museum properties. The most common are archaeological collections, art, zoological and botanical collections, historical photographs, and historic objects. Each refuge maintains an inventory of its museum property. Our museum property coordinator in Hadley, Massachusetts, guides the refuges in caring for that property, and helps us comply with the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001, et seq.) and federal regulations governing federal archaeological collections. Our program ensures that Service collections will continue to be available to the public for learning and research.

Chapter 4, "Environmental Consequences," evaluates this plan's compliance with the cultural and historic acts cited above, as well as the Clean Water Act, Clean Air Act, and Endangered Species Act (ESA). We designed this draft CCP/EIS to fulfill our NEPA compliance.

Conservation Plans and Initiatives Guiding the Project

Birds of Conservation Concern 2002 Report

The Service developed this report (USFWS 2002) in consultation with the 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. The report fulfills the mandate of the 1988 amendment to the Fish and Wildlife Conservation Act (16 U.S.C. §§2901 et seq.) requiring 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 Endangered Species Act of 1973."

The 2002 report contains 45 lists that identify bird species of conservation concern at national, regional, and landscape scales. It includes a principal national list, seven regional lists corresponding to the seven regional administrative units of the Service, and species lists for each of the 37 Bird Conservation Regions designated by the North American Bird Conservation Initiative (NABCI) in the United States. NABCI defined those Bird Conservation Regions (BCRs) as ecologically based units in a framework for planning, implementing, and evaluating bird conservation. The refuge lies in the Atlantic Northern Forest Bird Conservation Region (BCR 14; see additional discussion below).

Our agency's overarching goal in developing that report is to stimulate federal, state, and private agencies to coordinate, develop, and implement integrated approaches for conserving and managing the birds deemed most in need of conservation. The report is available online at *http://www.fws.gov/migratorybirds/reports/BCC02/BCC02.pdf*.

North American Waterfowl Management Plan (NAWMP; update 2004)

Originally written in 1986, the NAWMP Plan describes a 15-year strategy for the United States, Canada, and Mexico to restore and sustain waterfowl populations by protecting, restoring and enhancing habitat. The plan committee, including representatives from Canada, the United States, and Mexico, has modified the 1986 plan twice to account for biological, sociological, and economic changes that influenced the status of waterfowl and the conduct of cooperative habitat conservation. The most recent modification in 2004 updates the latest needs, priorities, and strategies for the next 15 years, and guides partners in strengthening the biological foundation of North American waterfowl conservation and stakeholder confidence in the

direction of the plan. You may review it online at *http://www.fws.gov/birdhabitat/NAWMP/images/implementationframework.pdf.*

To convey goals, priorities, and strategies more effectively, that 2004 modification comprises two separate documents: Strategic Guidance and Implementation Framework, the former for 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, Black Duck, and Sea Duck. Our project area lies in the Atlantic Coast Joint Venture, which includes all the Atlantic Flyway states from Maine to Florida and Puerto Rico. The part of the refuge in Maine lies in the "Inland Wetlands" focus area; the part in New Hampshire lies in the "Lake Umbagog Focus Area," an indication of the importance of the refuge. You may view a map of focus areas for New Hampshire and Maine online at *http://www.acjv.org/.*

American black duck in flight

© Mark Wilson

The waterfowl goal for the Atlantic Coast Joint Venture is *"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 Black Duck Joint Venture plan also relates to our project. Black ducks use the refuge during their breeding season and fall migration. The Black Duck Joint Venture Plan, Final Draft Strategic Plan (USFWS/CWS 1993) resides online at *http://www.pwrc.usgs.gov/bdjv/.*We used both plans in developing the objectives and strategies in goals 1 and 2.

Atlantic Northern Forest Bird Conservation Region Blueprint (draft 2003, and its update)

The Atlantic Coast Joint Venture partnership created this blueprint in response to the NABCI challenge of building on existing partnerships to plan, implement, and evaluate cooperative bird conservation across North America. You may read the entire text of this document, "Blueprint for the Design and Delivery of Bird Conservation in the Atlantic Northern Forest," online at *http://www.acjv.org/documents/bcr14_blueprint.pdf.* It presents a strategic design of the key components that this BCR initiative will need to implement to maintain healthy populations of birds native to the Atlantic Northern Forest BCR, more commonly referred to as BCR 14. Specifically, it establishes a series of goals for moving BCR 14 toward a vision of sustained bird populations; it presents the biological foundation for its recommendation; and, it lays out a framework for implementing and evaluating them
(Dettmers 2004).

The BCR 14 blueprint identifies 53 bird species designated "highest" or "high" conservation priority in the region, and 15 habitat types important for supporting one or more of those priority bird species during at least one of their life stages. Those habitats either need critical conservation attention, or are crucial in long-term planning to conserve continentally and regionally important bird populations. Of the 53 highest and high-priority birds, 21 breed on the refuge, and several others migrate through. The refuge offers them 9 of the 15 priority habitat types. We considered each of those species and habitats in writing appendix B, "Species and Habitats of Conservation Concern," and in developing our habitat goals, objectives, and strategies.

North American Waterbird Conservation Plan (Version 1, 2002)

This plan (Kushlan et al. 2002) is an independent partnership among individuals and institutions interested in or responsible for conserving water birds and their habitats. The plan is just one element of a multi-faceted conservation program. The primary goal of the plan is to ensure that the distribution, diversity, and

abundance of populations and habitats of breeding, migratory, and non-breeding water birds 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 colonially nesting water-dependent birds. In addition, it will facilitate continent-wide planning and monitoring, national, state, and provincial conservation, regional coordination, and local habitat protection and management.

A Mid-Atlantic/New England/Maritimes Regional Working Group has been established. It is a regional partnership of organizations and individuals working to facilitate waterbird conservation in this region. Their overarching goal is to help local resource managers within the region protect waterbirds and their habitats. This will be accomplished by facilitating the development and distribution of information on the status and conservation needs of waterbirds and habitats, and by building partnerships between wildlife managers, scientists, conservationists and supporters.

You can access the continental plan online at *http://www.nawcp.org/pubs/ContinentalPlan.cfm*. You can access information on Mid-Atlantic/New England/Maritimes Regional planning online at *http://www.fws.gov/birds/waterbirds/MANEM/*. We used information from both those sources in developing our objectives and strategies for goals 1 and 2.

U.S. Shorebird (2001, 2nd ed.) and North Atlantic Regional Shorebird Plans

Concerns about shorebirds led to the creation of the U.S. Shorebird Conservation Plan in 2000. Brown, et al. published a second edition in May 2001. Developed under a partnership of individuals and organizations throughout the United States, the plan develops conservation goals for each U.S. region, identifies important habitat conservation and research needs, and proposes education and outreach programs to increase public awareness of shorebirds and of threats to them.

In the Northeast, the North Atlantic Regional Shorebird Plan was also drafted to step down the goals of the continental plan to smaller scales to identify priority species and habitat and species goals, and prioritize implementation projects. You may read the U.S. Shorebird Plan online at *http://www.fws.gov/shorebirdplan/USShorebird/downloads/USShorebirdPlan2Ed.pdf*. The North Atlantic Regional Shorebird Plan appears online at *http://www.fws.gov/shorebirdplan/RegionalShorebird/RegionalPlans.htm*. We used both plans in developing our objectives and strategies for goals 1 and 2.

Northern States Bald Eagle Recovery Plan (USFWS 1983)

This plan describes actions necessary in the 24 states it covers to ensure the survival and recovery of bald eagles. Its primary objective is to reestablish self-sustaining populations of bald eagles throughout the Northern States Region. Its initial goal is 1,200 occupied breeding areas with an average annual productivity of at least 1.0 young per occupied nest in at least 16 states. Specific recovery tasks fall into these four general categories.

1) Determine current population and habitat status;
2) Determine minimum population and habitat needed to achieve recovery;
3) Protect, enhance, and increase bald eagle populations and habitats; and
4) Establish and implement a coordination system for information and communication.

Due to its success under the Endangered Species Act, the Service is considering delisting the bald eagle. The decision to de-list is not final. In any case, there will remain a significant need to permanently protect bald eagle habitat and ensure the species' future success. We used this recovery plan as we developed our management goals, objectives, and land acquisition proposal.

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 its 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 in habitat loss, population trends, and the vulnerability of a species and its habitats to regional and local threats.

Physiographic Area 28—Eastern Spruce-Hardwood Forest (Draft June 2000).—Our project area lies in Physiographic Area 28, The Eastern Spruce-Hardwood Forest. In developing our habitat goals and objectives, we referred to its draft plan, now online at *http://www.blm.gov/wildlife/plan/pl_28_10.pdf*.
The plan (Rosenberg and Hodgman 2000) includes objectives for the following habitat types and associated species of conservation concern on the refuge.

- Northern hardwood and mixed forest: Canada and black-throated blue warbler, wood thrush, and veery;
- Mature conifer (spruce-fir) forest: bay-breasted, Cape May and blackburnian warbler, spruce grouse, and red crossbill;
- Boreal peatland: spruce grouse and olive-sided flycatcher;
- Early successional forest/edge: American woodcock and olive-sided flycatcher; and,
- Freshwater wetland/rivers/lakes: American black duck.

Partners in Amphibian and Reptile Conservation, National State Agency Herpetological Conservation Report (Draft 2004)

Partners in Amphibian and Reptile Conservation (PARC) was created in response to the increasing, well-documented national declines in amphibian and reptile populations. PARC members come from state and federal agencies, conservation organizations, museums, the pet trade industry, nature centers, zoos, the power industry, universities, herpetological organizations, research laboratories, forest industries and environmental consultants. Its five geographic regions—Northeast, Southeast, Midwest, Southwest and Northwest—focus on national and regional herpetofaunal conservation challenges. Regional working groups allow for region-specific communication.

The National State Agency Herpetological Conservation Report (NHCR), a summary report sponsored by PARC, provides a general overview of each state wildlife agency's support for reptile and amphibian conservation and research through September 2004. Each state report was compiled in cooperation with its agency's lead biologist on herpetofaunal conservation. The purpose is to facilitate communication among state agencies and partner organizations throughout the PARC network to identify and address regional and national herpetological priorities.

PARC intends to expand the scope of the NHCR to include other states, provinces, and territories. It will also include other state agencies that are

supporting herpetofaunal conservation and research, such as transportation departments, park departments, and forest agencies. The states of New Hampshire and Maine have completed reports included in the NHCR online at *http://www.parcplace.org/documents/PARCNationalStates2004.pdf*. The next NHCR will also integrate the list of species of conservation concern into each state's comprehensive wildlife conservation strategy (see below). We used the latest draft NHCR plan in developing objectives and strategies for goals 1, 2, and 3, and in developing appendix B, "Species and Habitats of Conservation Concern."

Eastern Brook Trout Joint Venture

In 2004, in recognition of the need to address regional and range-wide threats to brook trout, a group of public and private entities formed the Eastern Brook Trout Joint Venture (EBTJV) with a mission to halt the decline of brook trout and restore fishable populations. Its unique partnership has grown and now includes state and federal agencies, regional and local governments, businesses, conservation organizations, academia, scientific societies, and private citizens. It is the nation's first pilot project under the *National Fish and Wildlife Initiative*, and is a geographically focused, locally driven, and scientifically-based effort to protect, restore and enhance aquatic habitat throughout the range of the Eastern brook trout. The EBTJV has been modeled after the joint ventures aligned with the North American Waterfowl Management Plan.

The EBTJV is developing a draft Conservation Strategy that identifies current threats to Eastern brook trout, proposes a general strategy to deal with these threats, and outlines potential corrective measures. One technical report, "Distribution, Status and Perturbations to Brook Trout within the Eastern United States" is due out in 2006. It will categorize a variety of threats to brook trout and their habitat and helps to identify restoration and protection priorities. This and other products will then be used to formulate operational plans to begin implementation of high priority programs. More information is available online at http:*//www.fishhabitat.org*.

Brook trout

Duane Raver/USFWS

Native brook trout occur in our project area and we have identified them as a species of conservation concern in appendix B. Sub-watersheds in our project area represent most of the intact brook trout habitat remaining outside of Maine. Maine is considered the last true stronghold for brook trout in the eastern U.S. We will continue to consult with Service and state fisheries biologists involved in the development of the EBTJV Conservation Strategy to assist us in developing objectives and strategies related to brook trout and other associated aquatic resources.

New Hampshire Fish and Game Department, Wildlife Action Plan (WAP 2005), and State of Maine Comprehensive Wildlife Conservation Strategy (CWCS 2005)

In 2002, Congress created the State Wildlife Grant Program (SWG), and appropriated $80 million in state grants. The purpose of the program is 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 states according to a formula that takes into account their size and population.

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

The New Hampshire and Maine plans (NHFG 2005; MDIFW 2005) resulted from that charge. The goal of each plan is to create a vision for conserving that state's wildlife and stimulate other states, federal agencies, and conservation partners to think strategically about their individual and coordinated roles in prioritizing conservation.

In addressing the eight elements below, those two plans supplement and validate the information on species and habitat and their distribution in our analysis area, and help us identify conservation threats and management strategies for species and habitats of conservation concern in the CCP. The expertise that convened to compile those plans and their partner and public involvement further enhance their benefits for us. We used them in developing objectives and strategies for goals 1, 2, and 3, and in developing appendix B, "Species and Habitats of Conservation Concern." These are the eight elements.

1) Information on the distribution and abundance of species of wildlife, including low and declining populations, as the state fish and wildlife agency deems appropriate, that are indicative of the diversity and health of the state's wildlife

2) Descriptions of locations and relative condition of key habitats and community types essential to the conservation of species identified in element 1

3) 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 that may assist in restoration and improved conservation of these species and habitats

4) Descriptions of conservation actions necessary to conserve the identified species and habitats and priorities for implementing such actions

5) 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

6) Description of procedures to review the plan at intervals not to exceed 10 years

7) Plans for coordinating, to the extent feasible, the development, implementation, review, and revision of the plan strategy with federal, state, and 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

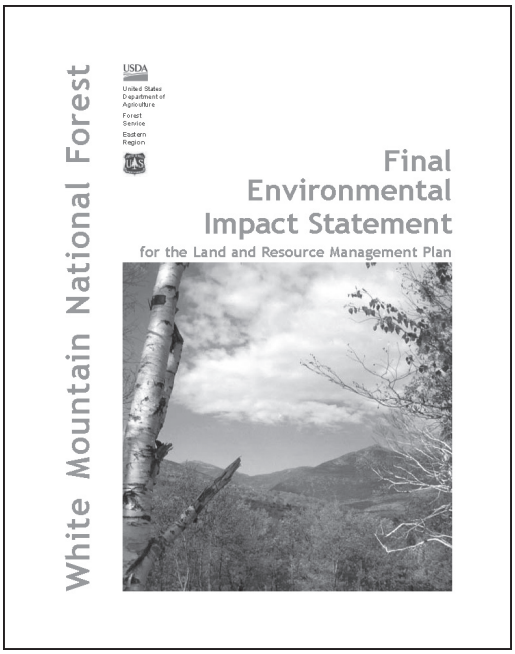
8) Plans for involving the public in the development and implementation of plan strategies

Other Regional Information Sources

We also consulted the plans and resources below as we refined our management objectives and strategies, especially those with a local context.

- Maine State Forest and Conserved Lands plans for Dodge Point, Richardson Lakes, and Days Academy and Sugar Island (Public Reserved Lands) and Kineo and Farm Island (State Park Lands); copy available at refuge headquarters
- New Hampshire State-wide Comprehensive Outdoor Recreation Plan (SCORP); available online at *http://www.nh.gov/oep/programs/SCORP/documents/scorpsummaryreport.pdf*
- Maine State-wide Comprehensive Outdoor Recreation Plan; available online at *http://www.state.me.us/doc/parks/programs/SCORP/index.html*
- Connecticut Lakes Headwaters Plan; available online at *http://www.nhstateparks.org/ParksPages/CLHWF/CLHWFinterminPlan.html*
- New Hampshire Forest Resources Plan; available online at *http://www.ceinfo.unh.edu/Pubs/ForPubs/NHFRP01.pdf*
- White Mountain National Forest Plan; available online at *http://www.fs.fed.us/r9/forests/white_mountain/projects/forest_plan/*
- Society for the Protection of NH Forests, New Hampshire's Changing Landscape, 2005; available online at *http://www.spnhf.org/research/research-projects.asp#nhcl*
- New England Forestry Foundation Plan; available online at *http://www.newenglandforestry.org/forestry/rfmp.asp*

One source used for regional information



- Northern Forest Canoe Trail plan; available online at *http://www.northernforestcanoetrail.org/*
- Appalachian Trail, National Park Service, Strategic Plan and other resources; available online at *http://data2.itc.nps.gov/parks/appa/ppdocuments/05Strategic%20Plan.doc*
- GORP Adventure Travel and Outdoor Recreation with information Appalachian trail; available online at *http://gorp.away.com/gorp/resource/us_trail/guid_app.htm*
- Rangeley Lakes Heritage Trust; available online at *http://www.rlht.org/index.shtml*

Refuge Establishment Purposes and its Land Acquisition History

The refuge was established with its first land purchase in 1992 for the following purposes and under the following authorities.

"... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ... (Emergency Wetlands Resources Act of 1986, 16 U.S.C. 3901(b));

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds. (Migratory Bird Conservation Act, 16 U.S.C. 715d);

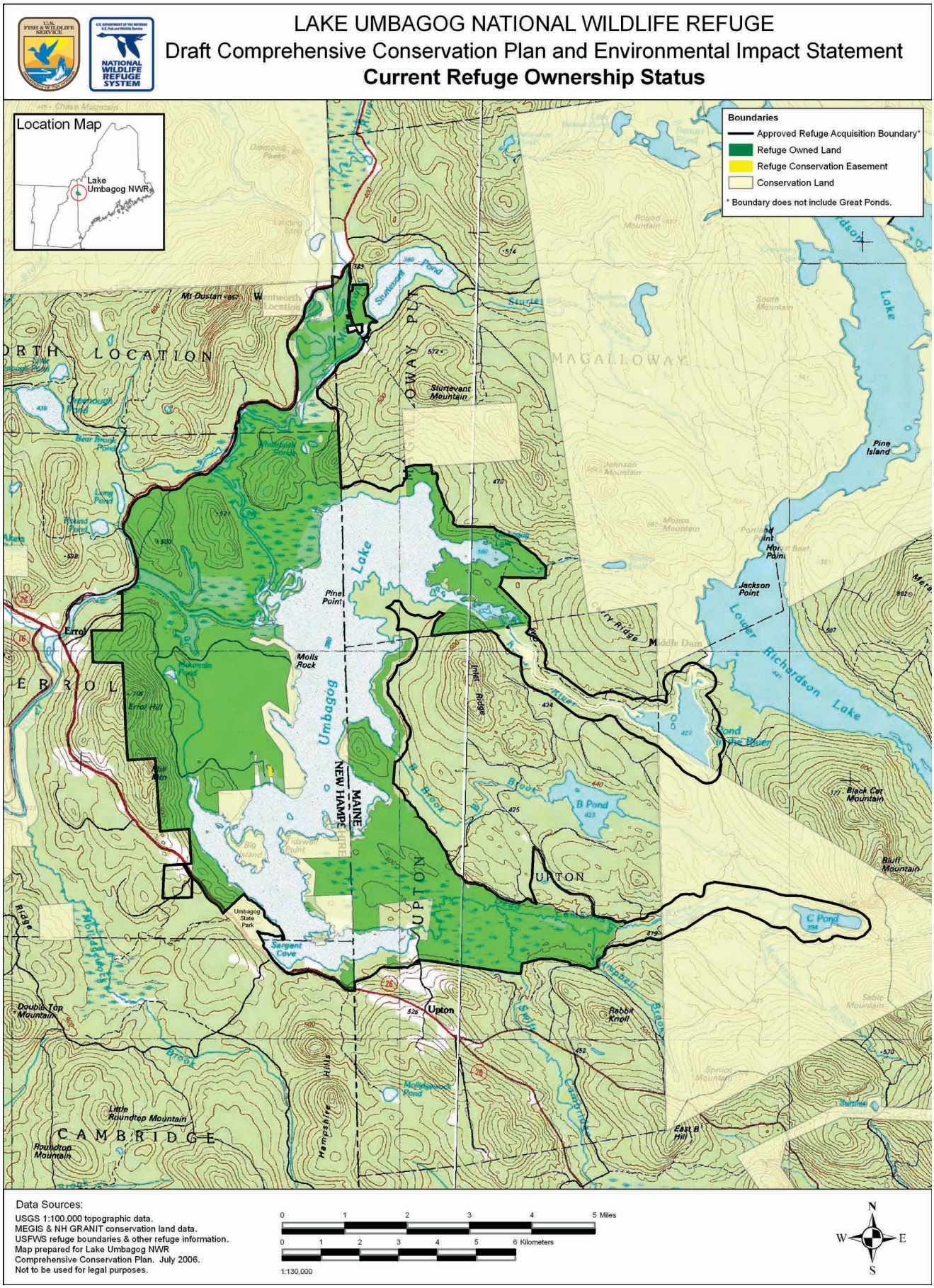
"...for the development, advancement, management, conservation, and protection of fish and wildlife resources..." (Fish and Wildlife Act of 1956; 16 U.S.C. 742f(a)(4)); and,

"...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude... (Fish and Wildlife Act; 16 U.S.C. 742f(b)(1))

Map 1-3 depicts the current refuge boundary. Table 1.1 summarizes the land acquisition history of the refuge.

Refuge headquarters in winter

Marvin Moriarty/USFWS


LAKE UMBAGOG NATIONAL WILDLIFE REFUGE
Draft Comprehensive Conservation Plan and Environmental Impact Statement
Current Refuge Ownership Status
Location Map
Lake Umbagog NWR
Boundaries
Approved Refuge Acquisition Boundary*
Refuge Owned Land
Refuge Conservation Easement
Conservation Land
* Boundary does not include Great Ponds.
Umbagog Lake
Pine Point
Molls Rock
Errol
Umbagog State Park
Sargent Cove
Upton
Lower Richardson Lake
Pine Island
Jackson Point
Sturtevant Mountain
Mt Dustan
Black Cat Mountain
Bluff Mountain
C Pond
B Pond
Rabbit Knoll
East B Hill
Double Top Mountain
Little Roundtop Mountain
Roundtop Mountain
Hampshire Hills
Molidgewock Pond
Sturtevant Pond
Pond in the River
Middle Dam
Mountain Pond
Big Island
Tidswell Point
Long Pond
Round Pond
Bear Brook Pond
Cambridge Pond
Landing Strip
Round Mountain
South Mountain
Johnson Mountain
Mousa Mountain
Sterling Mountain
Spruce Mountain
Sabbic Mountains
Diamond Peaks
Chase Mountain
NORTH LOCATION
MAGALLOWAY PLT
ERROL
UPTON
CAMBRIDGE
MAINE
NEW HAMPSHIRE
Data Sources:
USGS 1:100,000 topographic data.
MEGIS & NH GRANIT conservation land data.
USFWS refuge boundaries & other refuge information.
Map prepared for Lake Umbagog NWR
Comprehensive Conservation Plan. July 2006.
Not to be used for legal purposes.
0 1 2 3 4 5 Miles
0 1 2 3 4 5 6 Kilometers
1:130,000
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W
E
S

Table 1.1. Land acquisition history of the Lake Umbagog refuge

Calendar Year		Acres*	Funding Source#
1992		128	LWCF
1993		41	LWCF
1995		5,986	LWCF, MBCF
1996		203	LWCF
1998		214	MBCF
1999		2,488	LWCF, MBCF
2000		1,309	LWCF, MBCF
2001		8,847	LWCF, MBCF
2002		191	LWCF
2003		1	LWCF
2004		8	LWCF
2005		1,097	LWCF, MBCF
	Total All	**20,513**	

Table Notes

**The Service owns all acreage in full fee simple, except for a conservation easement on 6.01 acres. Acreage is approximate, as it derives from these three sources of varying accuracy: (1) land deeds (2) surveys or (3) GIS digitizing. For ease of presentation, the maps throughout this document do not show Service ownership of the lake bottom, or the road easements outside the approved refuge boundary. However, all summaries of refuge acres, including table 1.1, include that ownership.*

#LWCF—Land and Water Conservation Fund.—funding sources include revenues from the sale of surplus federal real property, motorboat fuel taxes, fees for recreation on federal lands, and receipts from mineral leases on the outer continental shelf.

#MBCF—Migratory Bird Conservation Fund.—the funding source is receipts from the sale of Federal Migratory Bird Hunting and Conservation Stamps.

Refuge Administration

The refuge now has five full-time permanent staff positions: refuge manager, deputy refuge manager, refuge wildlife biologist, administrative assistant, and maintenance worker. In addition, the refuge shares a full-time law enforcement officer with the Silvio O. Conte Refuge. Seasonal staff positions will vary between one and five each year. The Youth Conservation Corps (YCC) program adds an adult crew leader and up to five youths each summer.

Refuge Operational Plans ("Step-down" Plans)

Refuge planning policy lists more than 25 step-down management plans that generally are required on refuges. Those 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 we can implement them.

The status of step-down plans on the refuge follows. This draft incorporates by reference those that are up to date. Chapter 2 provides more information about the additional step-down plans needed and their schedule for completion.

We will revise this step-down plan within 1 year of CCP approval to ensure consistency with the final CCP.

- Hunt Plan, 2007; including amended EA and FONSI (USFWS, 2007)

We are preparing and incorporating these step-down plans into this CCP.

- Land Protection Plan (LPP)
- Fire Management Plan (FMP)

We will need to complete these step-down plans (see chapter 2); additional plans may be required depending on the alternative selected for the final CCP.

- Habitat Management Plan (HMP; highest priority step-down plan, to be completed immediately upon CCP approval);
- Annual HMP (to be completed within 1 year of CCP approval)
- Habitat and Species Inventory and Monitoring Plan (HSIMP; to be completed within 2 years of CCP approval)
- Fishing Management Plan (to be completed within 2 years of CCP approval)
- Visitor Services Plan (to be completed within 3 years of CCP approval)
- Law Enforcement Plan (to be completed within 3 years of CCP approval)

Refuge Vision Statement

Very early in the planning process, our team developed this vision statement to provide a guiding philosophy and sense of purpose in the CCP.

"We envision Umbagog National Wildlife Refuge as an essential link in the network of conservation lands in the Northern Forests. We will showcase science-based, adaptive management in a working forest landscape and provide an outstanding center for research. We will achieve this through strong partnerships with State agencies, conservation organizations, land managers, and neighboring communities.

"Our management will perpetuate the diversity and integrity of upland spruce-fir and northern hardwood forests, boreal and riverine wetlands, and lake habitats for the continued health of native fish and wildlife populations. These habitats will provide an important regional breeding area for migratory land birds, waterfowl, and other species of regional significance, such as the common loon and bald eagle.

"Visitors of all ages will feel welcome to enjoy the full complement of priority wildlife-dependent public uses. We will foster their knowledge of and support for conserving northern forest habitats through exceptional outreach and visitor programs. We want all our visitors to return home filled with enthusiasm for promoting and practicing resource stewardship in their own communities.

"We hope residents of neighboring communities in Maine and New Hampshire will value the refuge for enhancing their quality of life. Within the National Wildlife Refuge System, the refuge will be treasured for conserving Federal trust resources and providing inspirational outdoor experiences for present and future generations of Americans."

Refuge Goals

We developed these goals after considering that vision, the purposes of the refuge, the missions of the Service and the Refuge System, and the mandates, plans, and conservation initiatives above. These goals are intentionally broad, descriptive statements of purpose. They highlight elements of our vision for the refuge we will emphasize in its future management. The biological goals take precedence; but otherwise, we do not present them in any particular order. Each offers background information on its importance. In Chapter 2, "Alternatives Considered, Including the Service-preferred Alternative," we evaluate different ways of achieving these goals.

Goal 1. Manage open water and wetland habitats to benefit Federal trust species and other species of conservation concern.

Background
A rich variety of wetland communities on the refuge supports an array of habitats benefiting widely diverse species of animals and plants. The Magalloway River, Whaleback Ponds, Greater Floating Island, Mountain Pond, Tidswell Point, and Dead Cambridge areas all contain extensive wetlands, some with such rare species as heart-leaved twayblade or bog sedge. Rapp (2003) documented an unusual occurrence of a circumneutral fen at Tidswell Point. The refuge peatlands are among the largest and most diverse in the state (Sperduto et al. 2000).

The Service, other federal and state agencies, conservation organizations, sporting groups, and local residents recognize the importance of those unique wetland and wildlife resources. Protecting the lake and its associated rivers and wetlands was a principal reason for establishing the refuge. Those habitats support threatened and endangered species, waterfowl and other migratory species of federal and state concern and populations of mammals, reptiles, amphibians and fish and rare plants. As we mentioned above, New Hampshire lists the refuge as a priority for protection under the NAWMP, as does the Emergency Wetlands Resources Act of 1986 (USFWS 1991).

The refuge is unique in the region for its diversity of breeding waterfowl. Its marshes and backwaters, forested and shrub wetlands and adjacent forested and cut-over uplands provide important nesting and brood-rearing habitat for such waterfowl as black duck, ring-necked duck, and cavity-nesters, including common goldeneye, wood duck, common merganser, and hooded merganser. Blue-winged teal, green-winged teal and mallard also nest in the area.

Lake levels on Umbagog Lake are managed by the operator of a dam at the outlet of the lake in accordance with a license issued by the Federal Energy Regulatory Commission (FERC). The current license issued by FERC is for the Errol Project (FERC no. 3133). It was issued in 1983 for a 40-year term, and will therefore expire beyond the 15-year timeframe of this CCP. The license is currently held by Florida Power and Light Energy Maine (FPLE). The current license requires that the licensee "…conduct a study to determine the reservoir surface elevation and time of year at which stable waters levels should be maintained for the protection of nesting wildlife at Lake Umbagog." The licensee is further required to "…develop a plan to regulate the level of Lake Umbagog for the benefit of wildlife species and the water users downstream of the Errol Project." In the past, this has meant limiting water level fluctuations during the loon nesting season in June and July. Wetlands management by the refuge must therefore recognize that water level fluctuations are neither entirely natural nor directly controlled by the refuge. The FERC license and related issues are further discussed in Chapter 3.

Goal 2. Manage floodplain and lakeshore forests to benefit Federal trust species and other species of conservation concern.

Background
The refuge floodplain and lakeshore forests lie next to water bodies and non-forested wetlands, and typically have high species richness with dynamic and complex biophysical processes. These habitats are important for many wildlife species of concern, including nesting and foraging waterfowl, bald eagles, ospreys, and many migratory songbirds. They provide important structural components, including large nest trees for eagles and ospreys and cavity trees for nesting common goldeneye, wood duck, and certain songbirds. These habitats

also help control erosion and sediment loading into the lake and its tributaries. Without forested shorelines, stream banks in this area are more susceptible to erosion. The New Hampshire Natural Heritage Bureau (NHNHB) has defined an area along the Magalloway River as a rare type of silver maple floodplain forest community of conservation concern.

©Robert Quinn

Purple-fringed orchid

Most of the vernal pools on the refuge are embedded in floodplain forested habitats. A vernal pool is a small body of water that lacks a permanent, aboveground outlet. In the Northeast, snowmelt and spring and autumn rains fill vernal pools. They typically dry by mid-to-late summer, or earlier in years of drought. How long water stays in a vernal pool is its hydroperiod, which varies depending on the pool and the year. Maintaining vernal pools with a range of hydroperiods is important in sustaining vernal pool biodiversity. Because of that periodic drying, vernal pools do not support breeding populations of fish. The vernal pools on the refuge contribute to its native biodiversity by providing essential habitat for several obligate amphibian species, including blue-spotted salamander, spotted salamander and wood frog.

The restoration of developed floodplain and lakeshore riparian areas involves removing cabins and other structures, purchased from willing sellers, as funding and staffing allows. In 1996, the refuge acquired cabin leases on the land purchased from the James River, Boise Cascade, and Mead Paper companies. These acquired leases include stipulations to allow their continued use, but requires there be minimal impacts on resources. All leases expire at 50 years.

Goal 3. Manage upland forest habitats, consistent with site capabilities, to benefit Federal trust species and other species of conservation concern.

Background

Forests cover 90 percent of the Upper Androscoggin River watershed. The dominant tree species include red spruce, balsam fir, sugar maple, red maple, yellow birch, and white birch. At the landscape level, the matrix forest is a mixed spruce-fir/northern hardwoods forest; although embedded in that matrix, three broad vegetation types are found in varying amounts: spruce-fir, mixed softwoods-hardwoods, and northern hardwoods. The spruce-fir type is dominated by at least 75 percent red spruce and/or balsam fir at higher elevations, above 2700 ft., on thin, rocky soils at mid-elevations and on nutrient-poor soils in valley bottoms. The mixed hardwood-softwood forest type includes varying amounts of the major tree species in the region, depending on site conditions (Publicover and Weihrauch 2003). Bill Leak, a forester with the U.S Forest Service's Northeast Forest Experiment Station, considers a stand with 25 percent to 65 percent softwood a "mixed wood" stand (Leak, personal communication, 2004). White pine, hemlock, white spruce, northern white cedar, tamarack, black spruce, yellow and white birch, and red maple are also present in varying amounts. The northern hardwoods type is a mixture of at least 75 percent sugar maple, yellow birch, and beech on fine-textured soils at lower and mid-slopes.

©Robert Quinn

Black-backed woodpecker

Forest ecologists believe that the forest in the Upper Androscoggin River watershed of 150 years ago was also a mixed forest matrix; however, it supported more softwoods than we see on the landscape today (Kuchler 1964; Charlie Cogbill, personal communication, 2004). Multiple cycles of timber harvesting during the past 150 years affected forest composition. The selective harvesting of softwoods has converted many spruce-fir stands to mixed stands, and mixed stands to hardwood stands. In the absence of further human disturbance, natural succession and disturbance patterns will shift these forests to a higher proportion of softwood (Publicover and Weihrauch 2003). Our analysis for this CCP confirms that this mixed forest type, with a high proportion of softwoods, has the highest

natural potential for growth in our area. That analysis included a site capability assessment using The Nature Conservancy (TNC) ecological land units (a combination of elevation, bedrock geology, and topography), Natural Resource Conservation Service (NRCS) soils surveys, and aerial photo interpretation.

Pre-settlement forests are believed to have been multi-aged with a diverse structure including a variety of tree sizes, many large-diameter trees, multiple canopy layers, deep forest duff, and a "pit-and-mound" forest floor. The canopy, shrub, and herbaceous layers of the mixed forests around the refuge today have varying composition and coverage depending on specific site conditions and disturbance history (Rapp 2003).

The breeding bird survey data over the last 30 years shows the importance of this mixed forest habitat for species of concern such as blackburnian warbler, Canada warbler, and black-throated-green warbler (appendix N). A structurally complex (e.g., vertical diversity, coarse woody debris, large-diameter trees with cavities) mixed forest landscape also supports large, wide-ranging mammals, including marten, fisher, bobcat, and lynx (Ray 2000).

Although no stands of old growth forest are present on the refuge, it contains a few conifer stands with some late-seral characteristics, such as large-diameter trees. Hagen and Whitman (2004) report on the looming loss of late-successional forest in working forest landscapes including northern New England and the negative consequences for forest biodiversity. They note that forests develop along a continuum and, despite a harvest history, a stand can retain and develop such old growth characteristics as large live trees 100–200 years old, large dead trees, and fallen logs. Species associated with those characteristics include mosses, lichens, fungi, and insects.

Natural disturbance regimes affected by long-term climate change and disturbance patterns on the landscape are highly influenced by soil, topography, and forest type (Lorimer 2001; Lorimer and White 2003). Natural disturbance patterns for this region occur at two different scales. Large-scale, stand replacement disturbances from fire and wind occur infrequently, on the magnitude of 1000+ years. Small-scale disturbances, creating single tree-fall gaps, occur frequently (50–200-year return rates) (Lorimer 1977; Seymour et al. 2002). Pure stands of spruce and fir are much more susceptible to windthrow, insect outbreaks, and crown fires than associated hardwood species, because of their shallow root system, prevalence in swamps and on upland sites with thin, stony soils or on upper slopes exposed to high winds. Large areas of mixed spruce-hardwood that typically grow on better soils are rarely destroyed (i.e., stand replacement) by large-scale disturbances (Lorimer and White 2003).

Goal 4. Provide high quality wildlife-dependent activities such as hunting, fishing, wildlife observation and photography.

Background

Hunting, fishing, wildlife observation and photography are four of the six priority public uses designated by the Refuge Improvement Act. The other two priority uses are environmental education and interpretation (see goal 5 below). The Act stipulates those six uses are to receive enhanced consideration in refuge planning. Opportunities to engage in them should be provided to the extent compatible with refuge goals and objectives. Our objectives aim at providing high-quality opportunities for each of these four activities in ways consistent and compatible with the priorities of our other refuge programs, including opportunities for the other two priority uses. The Refuge Improvement Act does not establish a hierarchy among the six uses, but provides for refuge managers to determine whether any or all are appropriate and compatible. The ability to

fund the management of these activities is also a factor for refuge managers to consider in determining their compatibility. Service policy requires that refuge managers set limits on, and establish stipulations for, any of those activities as warranted to ensure their compatibility.

Each of these activities is already facilitated on current refuge lands; however, we propose to improve current opportunities through new infrastructure or improved access.

Goal 5. Develop high-quality interpretative opportunities, and facilitate environmental education, to promote an understanding and appreciation for the conservation of fish and wildlife and their habitats, as well as the role of the refuge in the Northern Forest.

Background
This goal complements goal 4 by recognizing the importance of the remaining two priority public uses: environmental education and interpretation. Its objectives focus on providing informational and educational opportunities about the significance of the refuge and its role in conserving the Northern Forest to audiences of all ages. We strive to foster our visitor's appreciation of wildlife conservation and encourage them to make responsible environmental decisions in the future.

Our proposed future programs will achieve our objectives through increased visitor contacts, on-site programs, and new and improved infrastructure. Our emphasis will be on providing interpretive resources with planned infrastructure (e.g. trails, roadside pullouts, and a visitor contact facility). We will facilitate the use of refuge lands for educational purposes; however, we will look to our state and conservation partners, local and state educators, Friends Group, and/or volunteers to lead the development of educational programs.

One desired outcome of our programs is that participants recognize we manage the refuge to provide a variety of habitats to benefit Northern Forest wildlife, with particular emphasis on migratory birds and wetlands. Through high-quality programs, visitors will gain a better understanding of the unique and important contribution of this refuge to migratory bird conservation and the Refuge System.

Goal 6. Enhance the conservation and management of wildlife resources in the Northern Forest Region through partnerships with public and private conservation groups, private landowners, State and local entities.

Background
The Northern Forest stretches from the St. Croix River in Maine westward through New Hampshire and Vermont across the Adirondack Mountains to the Tug Hill plateau in New York. It includes the largest contiguous forest remaining in the eastern United States. Those 26 million acres encompass the most remote, pristine lakes in the Northeast, the headwaters of the Hudson, Connecticut, St. John and other great eastern rivers, and vast tracts of forest that provide habitats for an impressive array of species, including many that are federal-listed as threatened or endangered or regional or state species of high conservation concern. Close to a million people live in that landscape, and many of them depend on the forest to sustain their communities and quality of life.

In the last decade, significant changes in land use have threatened the natural landscape, culture, and communities of the region. Huge forest landholdings, many owned by multinational corporations, are being sold at an accelerated rate.

Many of the large, contiguous tracts are being divided into smaller tracts and sold to developers or institutional investment corporations, including insurance companies and bank trusts, whose interests are purely economic. Those sales raise concerns about the rising trend of unsustainable timber cutting, forest subdivision, and other permanent development, particularly around lakefronts and in secluded forest tracts. In addition to fragmenting the forests, those developments destroy wildlife habitat, restrict public access, degrade water quality, spoil the remote and scenic beauty of the forest, and undermine the hope of a sustainable, forest-based economy to support Northern Forest communities.

Those concerns underscore the need for partners who will work together to permanently conserve the ecological integrity of the Northern Forest, preserve public recreational opportunities, and promote the economic sustainability of a forest-based economy. Fortunately, an impressive partnership already exists in the region including over a dozen federal, state, non-governmental, and private entities, who share this common mission. In addition, these partners' landholdings collectively create a conservation lands network, as depicted on map 1-1, which provides a basis for further connecting and conserving resources of conservation concern. The Service is a key partner in this effort, and refuge lands are integral to the land conservation network. Chapter 2 discusses alternative ways of sustaining the partnership and the Service role in it. Appendix A, "Land Protection Plan," presents our preferred vision for expanding our contribution to the partnership and the land conservation network, all in support of sustaining Federal trust resources.

Goal 7. Develop the refuge as an outstanding center for research and development of applied management practices to sustain and enhance the natural resources in the Northern Forest in concert with the Refuge System Land Management and Research Demonstration Area program.

Background

In 1999, the leadership of the Refuge System published their vision for its programs and management priorities in a publication titled "Fulfilling the Promise, the National Wildlife Refuge System" (USFWS 1999). Forty-two different recommendations were identified. One of those was to designate Land Management and Research Demonstration (LMRD) Areas. They envisioned LMRD areas as "places where new habitat management techniques and approaches are developed, implemented, and showcased…places where professional land managers and others come to learn about cutting edge habitat management techniques and technology, and carry back with them the information and knowledge which allows them to better manage their own lands." Specifically, the recommendation was to designate areas "to facilitate development, testing, teaching, publishing, and demonstration of state-of-the-art management techniques that support the critical habitat management information needs for fish, wildlife, and plant conservation within the System and other lands" (USFWS 1999).

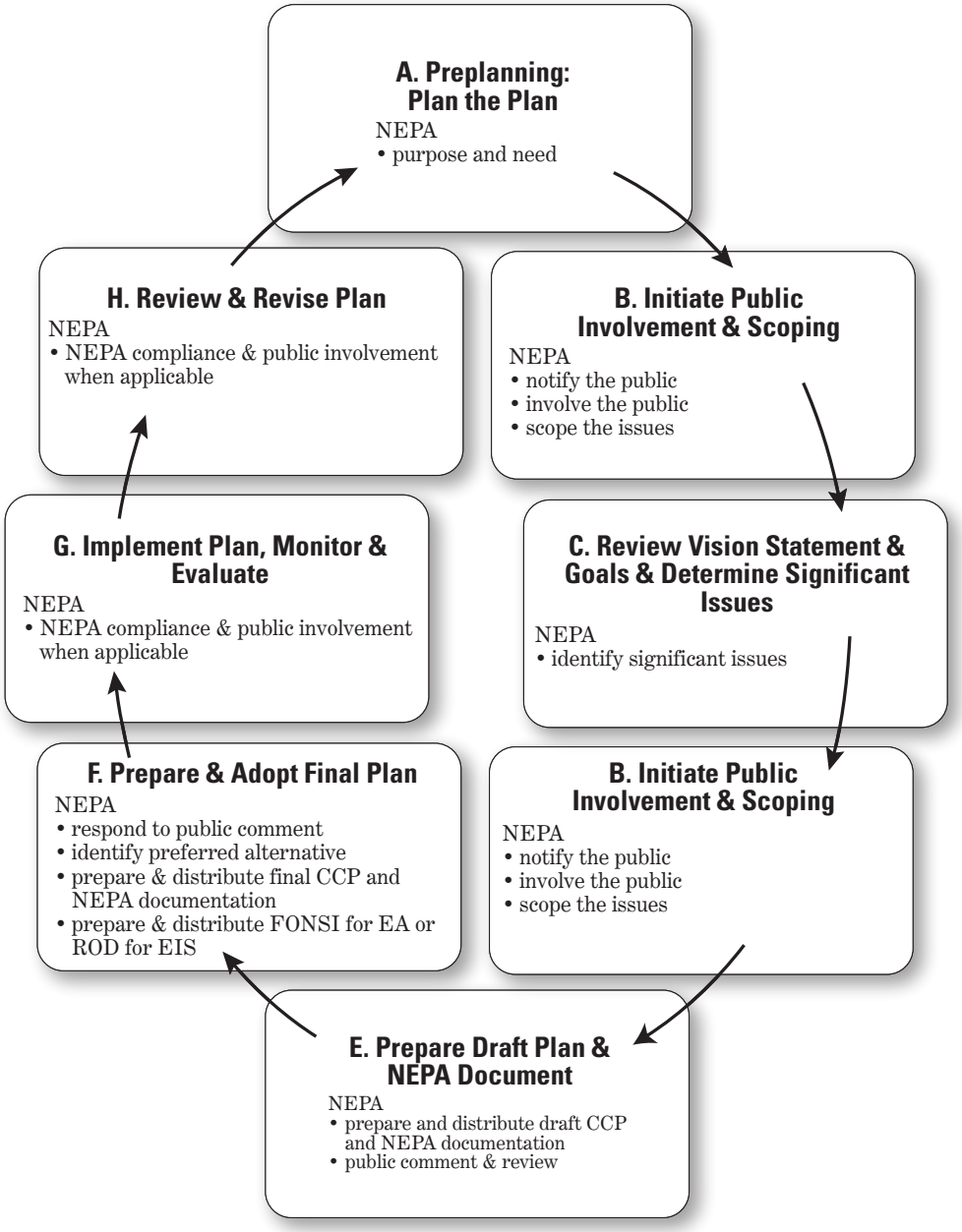
The implementation of that recommendation has begun. Nationwide, 5 of the 14 LMRD areas approved by the Directorate are now funded and in operation. Those are (1) Hanford Reach National Monument and Saddle Mountain refuge in Washington, (2) the National Elk refuge and National Bison Range in Montana, (3) the Rachel Carson and Parker River refuges in Maine and Massachusetts, (4) the Neal Smith and Northern Tallgrass Prairie refuges in Iowa, and (5) the Bosque del Apache refuge in Arizona. Each of those LMRD areas has a different habitat management focus. Lake Umbagog refuge, in partnership with the Moosehorn refuge and the Nulhegan Division of the Silvio O. Conte refuge, is another approved LMRD area, but lacks funding to implement programs.

Its focus is the management and restoration of habitats in the working forest landscape of the Northern Forest ecosystem.

The Comprehensive Conservation Planning Process

Service policy establishes an eight-step planning process that also facilitates our compliance with NEPA (figure 1.1).[1] Our planning policy and CCP training course materials describe those steps in detail. We followed that process in developing this draft CCP/EIS.

Figure 1.1. The Comprehensive Conservation Planning Process



The Comprehensive Conservation Planning Process & NEPA Compliance

[1] 602 FW 3, "The Comprehensive Conservation Planning Process" (http://policy.fws.gov/602fw3.html)

Since 1992, we have focused on conserving land within the approved refuge boundary, facilitating wildlife-dependent public uses, managing habitat for several focus species, such as common loon and bald eagle, and establishing relationships with the community and our partners. In 2001, we began to prepare for developing a CCP by collecting information on refuge resources and mapping its habitats. We convened our core team, which consists of refuge staff, regional office staff, and representatives of the Maine Department of Inland Fisheries and Wildlife (MDIFW) and the New Hampshire Fish and Game (NHFG). We discussed management issues, drafted a vision statement and tentative goals, and compiled a project mailing list of known stakeholders, interested individuals, organizations, and agencies. We also conducted a wilderness review, evaluated wild and scenic rivers potential, and summarized our biological inventory and monitoring information. We initiated all of those steps as part of "Step A: Preplanning."

In August 2001, we initiated "Step B: Initiate Public Involvement and Scoping" by distributing a newsletter to announce that we were beginning the planning process and ask if people wanted to be on our mailing list. In June 2002, we distributed approximately 1,000 copies of a Planning Newsletter and Issues Workbook to everyone on our mailing list. Those workbooks asked people to share what they valued most about the refuge, their vision for its future and the Service role in their community, and any other issues they wanted to raise. We received 131 completed workbooks.

On July 16, 2002, we formally announced the start of the planning process in a Federal Register Notice of Intent. During that July and August, we held eight public scoping meetings to identify public issues and concerns, share our draft vision statement and tentative goals, describe the planning process, and explain how people could become involved and stay informed about the process. We announced their locations, dates, and times in local newspapers and special mailings. More than 115 people attended. Those meetings helped us identify the public concerns we would need to address in the planning process. We also solicited public issues and concerns at our booth at the August 2002 Umbagog Wildlife Festival.

We worked on "Step C: Review Vision Statement, Goals, and Identify Significant Issues" and "Step D: Develop and Analyze Alternatives" concurrently in 2003 and 2004 in two technical workshops: one on upland forest habitat management and one on wetlands management. We invited resource professionals and scientific experts to share their opinions on the significance of refuge resources, namely, their assessment of the health, diversity, and integrity of its habitats. We also met with elected officials, our state partners, and other Service divisions to apprise them of the status of the project and exchange technical information. For much of 2004 and into 2005, we compiled and analyzed various management alternatives to serve as the foundation for developing this draft CCP/EIS. In August 2005, we distributed a newsletter summarizing the alternatives in detail and updating our planning timeframes.

Also in 2004 and into 2005, the USGS Fort Collins Science Center helped us develop and implement a stakeholder survey to provide us with information on public satisfaction, preferences, and expectations regarding our current and proposed refuge management. The final survey report provided valuable information for our management proposals. We distributed an Executive Summary of the results in November 2005. You may request the full report from refuge headquarters in hard copy or CD-ROM, or view it online at *http://www.fort.usgs.gov/products/publications/21507/21507.asp.*

We completed "Step E: Prepare Draft Plan and NEPA document," by publishing our Notice of Availability in the Federal Register announcing the release of this

draft CCP/EIS and distributing this document for public review. During that 45-day period of public review, we will hold public hearings to obtain comments. We also expect to receive comments by regular mail, electronic mail, or as testimony in those public hearings. After the comment period expires, we will review and summarize all of the comments we have received and develop our responses. We will present them in an appendix to the final CCP and EIS.

Once we have prepared the final CCP and EIS, and our regional director has prepared a Record of Decision (ROD), we will publish another Notice of Availability in the Federal Register. A 30-day period for public review will follow, after which, our regional director will record his final decision by signing the ROD. That will complete "Step F: Prepare and Adopt a Final Plan." We can then begin "Step G: Implement Plan, Monitor and Evaluate."

We will modify the final CCP following the procedures in Service policy (602 FW 1, 3, and 4) and NEPA requirements as part of "Step H: Review and Revise Plan." Minor revisions that meet the criteria for categorical exclusions (550 FW 3.3C) will require only an Environmental Action Memorandum. We must fully revise CCPs every 15 years.

Issues, Concerns, and Opportunities

From our Issues Workbook, public and focus group meetings, and planning team discussions, we developed a list of issues, opportunities, or any other item requiring a management decision. We concentrated further on those issues, as they drive our analysis and comparison of alternatives. We will address three categories of issues in the CCP/EIS.

Significant issues.—Our partners or the public brought them to our attention during the scoping process. Our discussions generated a wide range of opinions on how to resolve them, summarized below. We applied those in creating the primary distinctions among the objectives and strategies in each alternative in chapter 2. Ultimately, they will influence our final decision, because their resolution falls within the jurisdiction and authority of the Service.

Other issues and management concerns.—These are narrower in scope or interest than the significant issues, but still in that range of opinions. The alternatives resolve them similarly (see "Management Actions Common to all Alternatives" in chapter 2).

Issues and concerns outside the scope of this analysis.—Their resolution falls outside the scope of this EIS or outside the jurisdiction or authority of the Service. Although we discuss them briefly in this chapter, we do not address them further in this draft CCP/EIS.

Significant Issues

Addressing the 10 significant issues below will help us achieve the seven goals above. Chapter 2 describes in detail how the alternatives address these significant issues, and how addressing them will help achieve refuge goals.

1. *Which wetland habitats and wetland-dependent species should be management priorities? How will we manage for them on the refuge?*

Because one of the purposes for establishing the refuge is to conserve wetlands, addressing this issue is a high priority. It is also a challenge. The water levels in Umbagog Lake directly influence most of the refuge wetlands. The holder of the FERC license controls those water levels, which fluctuate according to releases at Errol Dam. The current licensee, FPLE, meets with the Service annually, as required by its license, to agree on water levels in June and July when birds are breeding and nesting.

To offset our limited direct influence on water levels, some input we received recommends we manage refuge wetlands by planting wild rice, promoting beaver activity, reducing or eliminating external threats of erosion or pollution, controlling access to wetlands, and eliminating invasive species. We believe, as do wetland experts who provided input on this issue, that managing water levels more effectively throughout the year would improve habitat quality for species of conservation concern and other wetland-dependent native species, and sustain such unique wetland types as the Floating Island National Natural Landmark (FINNL).

Those recommendations vary considerably on the timing, extent, and focus of wetlands management. Some suggest we establish more baseline biological information before we manage the refuge wetlands. Others suggest we first work with the current holder of the FERC license, to discuss a year-round regime of water levels that will be more beneficial for wildlife and wetlands. As in any aspect of refuge management, our decisions on managing refuge wetlands could benefit one species of conservation concern, but adversely affect another.

2. *Which upland forest habitats and forest-dependent species should be management priorities? How will we manage for them on the refuge?*

The decision document establishing the refuge (USFWS 1991) also recognizes that its upland forests play a crucial role in conserving the lake, its rivers and associated wetlands. Uplands compose at least 58 percent of the refuge. During the last 10 years, we acquired much of that upland forest from timber companies who harvested it intensively before selling it to the Service. The vegetation now growing back on some of those areas lacks the natural species diversity, age-class distribution, and structural components of healthy native forests in the Upper Androscoggin River watershed.

Only in the last 5 years have we acquired enough contiguous forested upland to form efficient management units. Primarily for that reason, we have not managed the vegetation on those lands. During our public scoping, many people encouraged us to manage those areas to bring them into a more natural, healthy forest condition. Some would like us to manage the upland forests on the refuge as working forests to promote tree growth and productivity for commercial purposes. Others would like us to initiate some action to get those areas on a natural path sustainable without further human intervention. Some suggested we focus our management on benefiting species that depend on upland forest habitats, particularly, migratory songbirds that regional and state conservation plans have identified as conservation concerns in the last 5 years. Some of those species require mature forest stands, while others prefer a mix of age classes and types. Again, our management decisions could benefit one species of conservation concern but adversely affect another.

Other individuals and organizations encouraged us to expand the refuge as a means of conserving large areas of undeveloped forest lands to benefit species that require contiguous interior forest habitats. Still others expressed an interest in our conducting very little to no active vegetation management in the uplands. Some believe “nature should take its course,” and that the forested areas will recover without our help.

3. *What is the appropriate level for each of the six priority public use programs on the refuge? What means of access will we allow for those activities?*

The Refuge Improvement Act does not establish a hierarchy among its six priority, wildlife-dependent compatible uses. At times, they may conflict. At other times, the refuge may lack sufficient resources to promote all of them

equally. Some people expressed concerns that we may allocate refuge resources disproportionately toward one use to the detriment of another. Service policy authorizes the refuge manager to allocate time and space for those uses to reduce conflict, or terminate or disallow one or more of them. The refuge manager must evaluate, among other things, which use most directly support the long-term attainment of refuge purposes and the Refuge System mission.

During the public scoping process, we heard from many people concerned about a rising number of conflicts between visitors in motorboats and visitors in canoes and kayaks. Both groups typically are involved in priority public uses such as fishing and wildlife viewing. Those promoting motorboats suggest limits on the number of kayakers and canoeists or the size of groups, because the increase in large group trips affects the ability of motorboats to maneuver on the river corridors. Those promoting kayaks and canoes voice their concern over the noise and speed of motorboats disturbing wildlife and affecting viewing opportunities. They also express concern about their own safety, because of the wakes motorboats create. Some motorboat operators suggest that kayakers and canoeists could create more wildlife disturbance by their access to small, quiet coves where some wildlife hide or rest.

Unfortunately, we get reports each year of verbal confrontations between users of motorized and non-motorized boats. Although we cannot prevent all such encounters, our enforcement focuses on people operating boats in a reckless manner, or in a manner that endangers or is likely to endanger any person, property or wildlife.

An additional challenge for the refuge manager and our state partners is determining the capacity of the refuge and the lake to support these priority compatible uses and still provide visitors with a quality experience. We also need to be aware of their impacts on adjacent lands. Several landowners expressed concern that increased boating has increased trespassing onto private land. Boaters have left behind trash and human waste, and have parked or camped where they do not have permission.

4. How will we manage furbearer populations?

The term furbearer includes all mammals that possess some form of hair (TWS 2001). However, we use the term to identify species traditionally hunted or trapped for their fur, including carnivores and rodents. Beaver, bobcat, coyote, fisher, fox, marten, mink, and muskrat are common furbearers on the refuge. Furbearer populations are dynamic; many are capable of doubling their populations in a single year, while others are more subject to limiting habitat factors. For example, muskrat populations can fluctuate dramatically each year. They can decline by 75 percent in the winter and rebound completely by the next fall (TWS 2001). As land managers, we become concerned when furbearer populations meet or exceed the biological carrying capacity of refuge habitats.

The complex subject of furbearer management is also controversial at the national and state levels. Most of the controversy surrounds regulated trapping. We heard from people who object only to certain trapping methods, particularly the foothold trap on land. However, other opponents have moral and ethical objections to killing animals, and do not support any form of trapping.

We also heard from proponents of regulated trapping who believe it provides an important, effective method for managing furbearer populations, is a sustainable use of wildlife resources, and allows for a rural, self-sufficient, subsistence lifestyle of historical significance in the Northern Forest. Supporters acknowledge the Refuge System mission to conserve, protect, and enhance viable populations of native wildlife such as furbearers, but contend that harvesting

some furbearers does not threaten the continued survival of their populations (TWS 2001). They often compare it to our hunting and fishing programs in that regard. However, trapping is not one of the six priority public uses in the Refuge Improvement Act.

5. *How will we manage compatible, non-priority recreational uses on the refuge?*

Some of the historical uses on the refuge are not priority uses, nor are they wildlife-dependent, but the refuge manager may determine them compatible after further analysis in this draft CCP/EIS. However, Service policy also provides that a use can be determined compatible, but not allowed based on compliance with other laws and policy, the availability of resources to manage the uses, possible conflicts with other uses, safety concerns, or other administrative factors.

We heard from people both supporting and opposing certain non-priority uses that have historic precedence in the area. Most frequently discussed during public scoping were (1) snowmobiling, a very popular recreational activity, and increasingly important to the local economy; and, (2) furbearer trapping, a recreational activity with cultural and historic roots in the region. We discuss different provisions for those two activities in the alternatives in chapter 2. Chapter 2 also identifies activities the refuge manager has previously determined not appropriate and his rationale for not evaluating them further.

For non-priority activities to be compatible and allowed, they would have to be managed so they do not conflict with the goals and objectives for biological and visitor services priorities in the final CCP, are consistent with public safety, and are manageable within the limitations of the refuge budget and available staff. If a priority and non-priority public use conflict, the priority public use will take precedence (603 FW 2). Some people we spoke with argued that these activities detract from our ability to provide priority public uses. They pointed out the limited refuge staff and annual funding of recent years, and did not believe we can manage these activities properly in addition to higher priority programs. Others simply stated they do not believe these activities are appropriate for a national wildlife refuge, and informed us they will review and be critical of any compatibility determination that allows them. That opposition ranged from those opposed to certain activities on ethical and moral grounds, to those concerned with visitor safety and those concerned with direct impacts on wildlife and habitats. We also heard from individuals who support many of these activities.

Snowmobiling on the refuge

Marvin Moriarty/USFWS

6. How will we manage camping in remote areas on the refuge?

A developed campground in Umbagog Lake State Park on the south end of the lake is accessible by car from Route 26. The park also includes 30 remote camping sites around the lake, all seasonally open and administered by the State of New Hampshire Department of Resources and Economic Development (NHDRED), Division of Parks and Recreation. Fourteen of those camping sites are on refuge lands; of which 12 are on the lake, and 2 are on rivers. Our ongoing partnership with the state to conserve Umbagog Lake is a very successful, valuable relationship that facilitates wildlife conservation and provides unique recreational opportunities in the Northern Forest. The remote camping sites are extremely popular, and are consistently occupied during the open season. We hear from many people that the highlight of their trip is the opportunity to hear and see loons calling near the campsites at dusk and dawn.

Although we heard from individuals who advocate maintaining camping at its current level, we did not hear from anyone who recommended increasing the number of sites. Some, who expressed support for camping in general, would like to see a reduction in the total number of sites because they are concerned about the total number of visitors to the area, and believe camping encourages group activities. Others felt that continuous use had adversely affected some of the sites, and would like to see them restored.

Some people told us that they do not believe camping is appropriate in a national wildlife refuge, especially if site development or intensive use adversely affect natural habitat. Others expressed concern that the remote sites only encourage inexperienced boaters to get out onto the lake and jeopardize their safety and that of others.

7. How will we manage outfitters and guides on the refuge?

We heard a range of opinions about the desirability of the current level of guided or group tours which occur on adjacent ownerships. Several individuals expressed concern that guided tours have increased over the last five years, but do not appear to be regulated by any agency. Some of the same people believe that outfitting and guiding is already at its capacity, and opposed group tours because they facilitate getting more visitors to the lake and its surroundings. Others supported guiding as an activity, because it was their livelihood, or because they believe it enhances visitors' experiences by providing safe and successful opportunities for viewing wildlife, photographing nature, hunting, or fishing.

According to Federal regulations and Service compatibility policy (603 FW 2), we may only authorize public or private economic uses of the natural resources on any national wildlife refuge in accordance with 16 U.S.C. 715s and 50 C.F.R. 1(29.1) when we determine that the use contributes to the achievement of the refuge purposes or the Refuge System mission. We may authorize an economic use, such as commercially guided trips, by special use permit only when the refuge manager has determined the use is appropriate and compatible. The permit must contain terms, conditions, and stipulations to ensure compatibility.

Our authority to administer these activities on Umbagog Lake is limited to the lands and waters where the Service has an ownership interest. We have not evaluated these activities because we have had no requests to do so. Once a request is received, we will evaluate the use for appropriateness and compatibility.

8. *What should be the refuge role in conserving land in the Upper Androscoggin River watershed? Should we pursue a refuge expansion?*

Goal 6 describes significant changes in land use in the Northern Forest and our role in the existing collaborative partnership helping to conserve important habitats, maintain outdoor recreational opportunities, and sustain a viable economic and social quality of life. Our partners and we will continue to use many tools and techniques for accomplishing this mission which range from outreach and education, research and demonstration areas, private lands assistance programs, cooperative management agreements, conservation easements, and land acquisition. Each of those is a tool, although our ability to use these effectively will depend on other factors previously discussed, such as refuge staffing, funding, and the continued strength and collaboration of our partnerships.

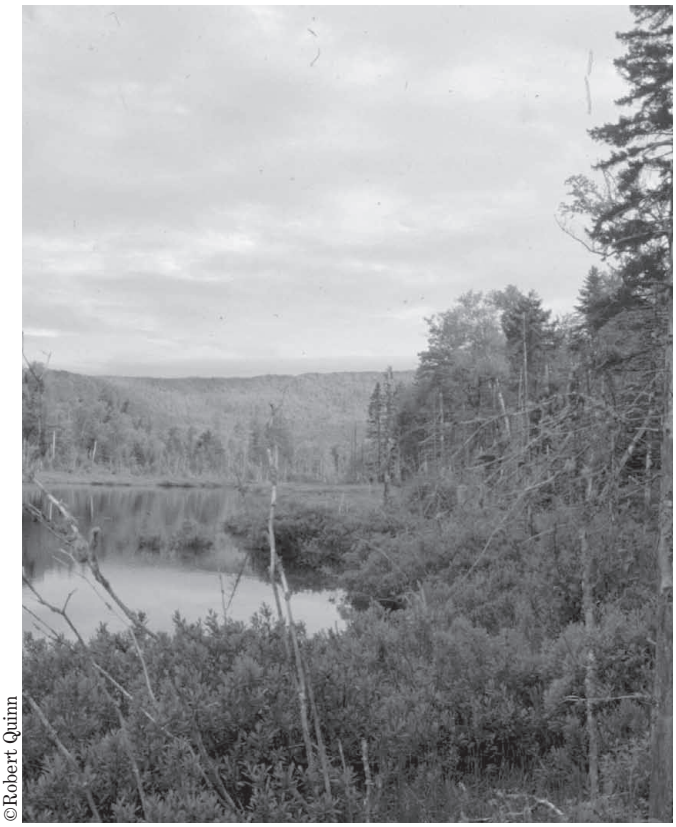
In that list of potential methods, land conservation garners the most public attention and interest. We heard a wide range of opinions on whether the refuge should continue to expand. Some people expressed concern that federal ownership will result in a greatly diminished local voice in how those lands are managed and used, and they expect the result will be additional restrictions on non-priority public uses, which they view as "traditional" uses. They believe the Service will not be responsive to local concerns, and that the lands will no longer be subject to local influences. Many people specifically fear a significant loss of commercial timber harvest and its potential impacts on the local economy. Others are concerned about the loss in property taxes, because the Federal Government does not pay property taxes.

However, many expressed support for land conservation for the reasons identified in goal 6 above, including the fact that owners are selling huge landholdings and subdividing them into smaller tracts at an alarming rate. Some people expressed the opinion that state agencies, local governments, or non-governmental entities should take the lead in land protection, and that the Service should play only a supporting role. Others suggested that the Service pursue conservation easements and private lands cooperative management agreements instead of fee simple purchases as a means of protection. They mentioned that this would also alleviate concerns about the impact on local property taxes.

On the other hand, we heard from many people that Service acquisition of fee title lands was the only way to guarantee the permanent conservation and management of the lands to support native wildlife. Some recognized the importance of the land conservation partnership and lands network that exists and encouraged our continued active involvement, including support for a refuge expansion. They mentioned the benefits of permanently conserving important habitats, the increased opportunities for public access and recreation in areas either not currently open or not guaranteed to be open long-term. Finally, they pointed out that expanding the refuge would maintain the rural character and quality of life so important to many.

9. *How can the refuge and its staff be an asset for local communities and support their respective vision and goals for the area?*

Our goal is to become an integral part of the economic and social health and vitality of local and regional communities. The challenge for us is to understand the visions of the respective communities and our role in them while staying true to our mission. We need to determine how best to cultivate relationships in the area, reach out to raise our visibility, and identify the resources we have to contribute. During public scoping, the comments we heard and the results of our stakeholder survey indicate some disappointment in the level of communication from refuge staff, and various levels of mistrust of what our agency does communicate.



©Robert Quinn

Whaleback Pond

Others mentioned that this situation is improving, but could be better. Several individuals requested a more transparent planning process with frequent opportunities to participate and share information. Others felt well informed about refuge activities, and valued the contribution of the refuge to their quality of life. Gaining community understanding, trust, and support for refuge programs is very important for our success in managing the refuge and contributing to conservation in the Northern Forest.

10. What staffing, budgets, and facilities are needed to effectively administer the refuge? Where should they be located?

Many people expressed concern about our ability to maintain existing and proposed infrastructure and implement programs on this refuge, given its current levels of staffing and funding. Some told us they recognize the logistical challenges for our four field staff in trying to manage the refuge land base, which straddles two states, is difficult to access in some places, and is significantly affected by Umbagog Lake and Errol Dam, neither of which falls under the direct authority of the Service. Fortunately, our strong partnerships with natural resource agencies in New Hampshire and Maine allow us to resolve most concerns expeditiously.

Some people expressed the opinion that the refuge needs a presence directly on the lakeshore to facilitate administration, outreach, and education of visitors on safety, lake use etiquette, and resource protection.

We also heard interest in insuring that there is adequate law enforcement capability on refuge lands. That is increasingly becoming a concern to many as public use on the refuge and adjacent lands increases. Our hope is that our new half-time refuge law enforcement officer and a full-time law enforcement zone officer shared among the refuges in Maine, northern New Hampshire and Vermont will meet our law enforcement needs and public expectations.

Some people are concerned that any new proposals in this CCP will fall substantially above current budget allocations, thus raising unrealistic expectations. One individual pointed out that budgets can vary widely from year to year because they depend on annual congressional appropriations. Other people supported our pursuit of new management objectives and strategies in the hope that the CCP will establish new partnerships and sources of funding. In fact, several people made specific recommendations on sources of grants or ways to collaborate in certain programs or fund new infrastructure and other projects.

The alternatives recommend varying amounts of funding and staffing, (both permanent and seasonal), to implement programs over the next 15 years. In all of the alternatives, we recommend as essential the minimum staffing levels already approved for the refuge. Appendix H presents staffing recommendations by alternative. Appendix F identifies the funding needs by priority project identified in the 2005 Refuge Operating Needs System (RONS) and Service Asset Maintenance Management System (SAMMS). We regularly update those databases.

Other Issues

We explain how we will address the following issues and concerns in "Actions Common to all Alternatives" or "Actions Common to Alternatives B and C" in chapter 2. We organized them under their respective subject headings.

- What should be the Service role in protecting national and local landmarks, and cultural resources in the Umbagog Lake area?
- What is the refuge role with respect to water level management in Umbagog and associated lakes?
- How can the refuge promote responsible use of Umbagog Lake in cooperation with other jurisdictional and management agencies?
- How will existing camp lease agreements, under special use permits (SUPs), be affected by the CCP process?
- How will we protect and manage deer winter yards?
- How will we coordinate resource management with other state and federal agencies in the Upper Androscoggin River watershed?
- How can we work with other agencies to manage invasive plants and animals (e.g. small mouth bass and milfoil) on the lake?
- How will we manage fires (management-prescribed burns and wildland fires) on the refuge?

Issues Outside the Scope of this Analysis or Not Completely Within the Jurisdiction of the Service

1. *Changing the timeline for FERC re-licensing of Errol Dam or changing the terms and conditions of the license*

Some people expressed concerns with water level management in Umbagaog Lake, namely due to the management of Errol Dam. We heard concerns with water levels being too high, affecting waterbird breeding and nesting habitat. Others mentioned concerns with low water levels during the summer, exposing mudflats and affecting shoreline access to open water. Yet others indicated that if the Service or states had more control over water level management, habitat conditions for species of concern, and wildlife-dependent recreational opportunities, could be enhanced throughout the year.

Water levels are controlled, as noted above, by the holder of the license issued by FERC for the Errol Project (currently FPLE). Once FERC has issued a license, any party wanting FERC to change the terms must petition FERC to reopen the license in order to effectuate any change in its terms. The procedure for doing so requires the petitioner to supply a detailed administrative record justifying a change in the license terms, sufficient to convince FERC that the analysis it did in issuing the license is no longer accurate, and that a change in the license terms is necessary. The licensee has a right to full administrative process under FERC regulations before its license can be changed by that agency. Such a challenge falls outside the scope of this CCP. Its purpose is to provide the Service with detailed goals and objectives for managing refuge lands, not to provide guidance to the Service concerning matters within the jurisdiction of a different federal agency. However, in chapter 2, alternative B proposes that we continue to meet annually with the licensee to discuss current terms and conditions of the license that relate to wildlife management during the breeding and nesting seasons and to discuss opportunities for habitat enhancement throughout the year.

2. Giving or transferring refuge lands back to private or town ownership

We heard people express the opinion that the Service should give back, trade, or sell refuge lands to an entity more amenable to the local culture and history. The USGS stakeholder survey (Sexton et al. 2005) indicates that some local respondents do not trust the Federal Government to manage lands on their behalf. Issue 8 above identifies other concerns people expressed about Service ownership.

We established the refuge in 1992 with the first purchase of land after producing a draft and final environmental assessment (Service 1991). Both of these documents extensively evaluated the proposal to create the refuge, and alternatives to that proposal, and included public review and comment. We based our proposal on a strong federal-state partnership to cooperatively protect and manage nationally significant habitats in the area, with strong collaboration among the Service, New Hampshire and Maine state agencies, conservation organizations, and three principal landowners: the James River Company, Boise Cascades Paper Group, and Seven Islands Land Company. We agreed the Service was to take the lead in establishing the refuge on core lands, and New Hampshire and Maine were to take the lead in acquiring conservation easements in adjacent agreed-upon areas.

In addition to the 1991 final EA establishing the refuge, our 2001 regional director's decision to further expand the refuge addressed public and partner comments on land acquisition. Both decisions required the regional director to prepare a Finding of No Significant Impact (FONSI) to disclose that the proposed land acquisition complies with federal laws and does not have a significant impact on the human environment.

The purchase of lands within the approved acquisition boundary represents the Service commitment to honor its responsibilities agreed to in the final decision. Although the Service can exchange refuge land for other land of equal or higher conservation value, a lack of trust in the Federal Government does not constitute a basis for transferring refuge lands to private or town ownership.