

Appendix I



Bill Zimm/USFWS

Boreal fen and bog habitat on the refuge

Fire Management Program Guidance

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In the draft CCP/EIS for Lake Umbagog Refuge, we published a draft Fire Management Plan (FMP). Since publication of the draft CCP/EIS, new requirements have been developed for FMPs that include interagency cooperation, consistency in terms of common language and format, and the need to address fire at a landscape scale across ownerships. The FMP published in the draft CCP/EIS as appendix I does not meet the new standard for an FMP nor adhere to acceptable agency/Departmental policy requirements. In the interim, while we prepare a new FMP, we provide this document to share our policy and strategic guidance on fire management on this Refuge.

A detailed Fire Management Plan will be developed for the Refuge, consistent with Interagency Plan standards, in support of a final approved CCP, and other management documents, such as Habitat Management Plans. Once approved, the FMP will comply fully with DOI and Service direction, including a requirement that the Plan be reviewed and/or revised at a minimum of a five-year interval, or when significant changes in program direction (e.g. incorporating prescribed fire use, or significant land-use changes) are made.

National Wildlife Refuge System Mission

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

The Historic Role of Fire in the Ecosystem

The Northern Forest ecosystem differs from the rest of New England, and indeed most other forest types in the United States, in the sense that natural fire is not considered a major ecological driver. Fires burned the northern hardwood forests, but only rarely. Bonnicksen (2000) estimates that light surface fires crept through the forest about once in 600 years, and severe fires only burned it once in 3,000 years. Even light surface fires can kill beech and maple trees. In the spruce-fir forests, the average area in northern New England burned on a 200-400 year cycle, and some areas escaped a major fire for as long as 800 years (Bonnicksen 2000). Cogbill (2001) estimates that the pre-settlement fire return intervals for forests in this region were on the order of “several millennia” based on witness tree reports from colonial land surveys.

In an earlier paper, Cogbill (2000), examined reports of witness trees from pre-settlement land surveys involving 179 towns in northern New England and New York and determined that overall roughly 0.5% of the region was affected by major disturbances at the time of settlement. Despite the apparent rarity of catastrophic disturbances in the region, medium- and small-scale perturbations caused widespread, but patchy mortality. This pattern of site-level mortality is due to the relatively short growing season, nutrient poor soils, heavy snow and ice loads, frequent stem breakage, and wind throw due to moderate winds associated with thunderstorms or frontal passages. Disturbance at this level resulted in a varied landscape dominated by a diverse, small-scale mosaic (Cogbill 2001). Interestingly, Cogbill found no mention of insect (spruce budworm) damage in the colonial land surveys and determined that the past effects of this insect were much more limited than at present.

Cogbill also admits that there is some uncertainty about the pre-settlement role of fire in shaping the lowland conifer forests; the “black spruce swamps” have environmental and floristic similarities to northern systems in Maine and Canada which burn regularly. Perhaps the lack of fire in the pre-settlement record represents inauspicious timing or is in error.

There is indication that Native Americans used the area for permanent village sites, but the region was mainly used as hunting and fishing grounds. During the period of European Contact (1600-1750) Native American groups frequently traveled through the area, between the St. Lawrence and St. Francis Rivers in Canada and the Androscoggin drainage in Maine, for trading purposes or to conduct warfare. It seems likely that some fires were started to aid hunting or escaped from abandoned cooking fires.

The period from about 1780 to 1850 saw Euro-American settlement and the initiation of agriculture in the area. Logging and dairy farms were the principal agricultural endeavors. By 1870 the railroad system in New Hampshire and Maine was essentially complete (Wallace 1989). Accidental and intentional ignitions undoubtedly followed as people settled the area.

The Future Role of Fire in the Landscape

The historical role of fire as described above does not necessarily reflect predictions for the future. With the onset of global climate change, the predicted changes in temperature, precipitation, and vegetation patterns there is a greater likelihood that major fire events, perhaps even catastrophic events, will occur. As such, the role of fire is likely to be modified. It may be used more proactively to reduce threats on the landscape and improve habitat conditions.

When fire is used properly it can –

- reduce hazardous fuels build-up in both wildland-urban interface (WUI) and in non-WUI areas;
- improve wildlife habitats by reducing the density of vegetation, and/or changing plant species composition;
- sustain and increase biodiversity;
- improve woodlands and shrublands by reducing plant density;
- reduce the susceptibility of plants to insect and disease outbreaks;
- assist in the control of invasive and pest plant species.

Wildland Fire Management Policy and Guidance

In 2001, the secretaries of the Interior and Agriculture approved an update of the 1995 “Federal Fire Policy”. The 2001 “Federal Wildland Fire Management Policy” directs federal agencies to achieve a balance between fire suppression to protect life, property and resources, and fire use to regulate fuels and maintain healthy ecosystems. It also directs agencies to use the appropriate management response for all wildland fire regardless of the ignition source.

This policy provides nine guiding principles that are fundamental to the success of the fire management program.

- Firefighter and public safety is the first priority in every fire management activity.

- The role of wildland fires as an ecological process and natural change agent will be incorporated into the planning process.
- FMP programs and activities will support land and resource management plans and their implementation.
- Sound risk management is the foundation for all fire management activities.
- Fire management programs and activities are economically viable, on the basis of values to be protected, costs, and land and resource management objectives.
- FMPs and activities are based on the best available science.
- FMPs and activities will incorporate public health and environmental quality considerations.
- Federal, state, tribal, local, interagency and international coordination and cooperation are essential.
- Standardization of policies and procedures among federal agencies is an ongoing objective

The fire management considerations, guidance, and direction should be addressed in the land use resource management plans (for example, the CCP). The FMP is a step-down plan derived from the land use plans and habitat plans, with more detail on the fire suppression, fire use and fire management activities.

Management Direction

Lake Umbagog NWR will protect life, property, and other resources from wildland fire by suppressing all wildfires. Prescribed fire in conjunction with chemical and mechanical fuel treatments may be used in an ecosystem context to protect federal and private property. Fuel reduction activities will be applied in collaboration with federal, state and nongovernmental partners. There are presently no plans to use fire for habitat management purposes.

Should prescribed fire be recognized as a viable treatment method or management tool for the refuge, it will be used to promote and accomplish the goals set forward in the Comprehensive Conservation Plan:

- Goal 1. Manage open water and submerged aquatic vegetation and wetlands to benefit Federal trust species and other species of conservation concern.**
- Goal 2. Manage floodplain and lakeshore forests to benefit Federal trust species and other species of conservation concern.**
- Goal 3. Manage upland forest habitats, consistent with site capabilities, to benefit Federal trust species and other species of conservation concern.**
- Goal 4. Provide high quality wildlife-dependent activities such as hunting, fishing, wildlife observation and photography, as well as camping and boating in support of those activities.**
- 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.**
- 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.**

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.

All aspects of the fire management program will be conducted in a manner consistent with applicable laws, policies, and regulations. Lake Umbagog NWR will develop and maintain a FMP to accomplish the fire management goals that follow (see Fire Management Goals). Prescribed fire, chemical, manual and mechanical fuel treatments, if utilized, will be applied in a scientific way, under selected weather and environmental conditions.

Fire Management Goals

The goals and strategies of the National Wildlife Refuge System Wildland Fire Management Program Strategic Plan are consistent with Department of Interior (DOI) and the USDA Forest Service policies, National Fire Plan direction, the President’s Healthy Forest Initiative, National Wildfire Coordinating Group (NWCG) Guidelines, initiatives of the Wildland Fire Leadership Council, and Interagency Standards for Fire and Fire Aviation operations.

The fire management goals for the Refuge are to use an appropriate management response (AMR) to:

1. Protect life, property, and natural resources from wildfire (an unplanned, unwanted event); and
2. Reduce threats to life, and property by alleviating hazard fuel conditions that exceed normal amounts for the landscape, and values at risk.

Fire Management Objectives

The purpose of the fire management program is to apply Appropriate Management Responses (AMRs) to:

1. Protect human life, property, and resources within and adjacent to refuge boundaries.
2. Manage all wildland fires using AMRs that will minimize the adverse effects of fire and fire suppression activities on the environment and maximize cost effectiveness.
3. Integrate fire as a natural process into Refuge biotic communities in a manner that allows for natural fire intensities, frequencies, and distribution across the landscape.
4. Restore and protect the natural biological diversity and natural disturbance regime of Refuge ecosystems.
5. Reduce the frequency of human-caused ignitions by implementing an effective fire prevention program including public education, cooperation with neighboring agencies, hazard fuel management, and prevention patrols.
6. Establish close working relationships regarding mutual cooperation with surrounding fire management entities.
7. Promote public understanding of Refuge fire management programs and objectives.
8. Integrate knowledge generated through fire and natural resource research into fire management decisions and actions.
9. Comply with National Ambient Air Quality Standards and State Air Quality Implementation Plans to protect public health and the environment.

Fire Management Strategies

The following strategies will be employed as a means to meet the fire management goals and objectives of the Refuge:

- Conduct all fire management programs in a manner consistent with applicable laws, policies, and regulations.
- Identify, inventory, and map wildland fuels.
- Identify, inventory and map any developments near the Refuge and potentially at risk from fire.
- Promote training opportunities for Refuge staff to ensure that their fire skills are commensurate with an effective initial attack suppression response.
- Maintain Memorandums of Understanding and/Agreements with local Volunteer Fire Departments as a means to promote cooperative wildland fire prevention, and suppression.
- Utilize minimum impact suppression strategies and tactics (MIST) as a means to minimize adverse natural resource impacts.
- Use retardants and/or foam only when threats exist to life or property.
- Prepare and implement an effective fire prevention plan to minimize to minimize unwanted wildland fires.
- Utilize non-fire methods as management tools to achieve hazardous fuel and support resource management objectives.
- Evaluate prescribed fire as an implementation tool to meet hazard fuels and resource objectives.
- Initiate cost-effective fire monitoring to ensure fire management objectives are met.
- Conduct monitoring on wildland fires, non-fire treatments.
- Integrate fire ecology information, effective wildland fire management techniques, and prevention themes into existing interpretive and education programs.
- Utilize heavy mechanized equipment only in those areas where their use does not create damage that would be more serious than the effects of a wildland fire. In situations where human life, valuable natural or cultural resources, or private property may be threatened, the choice to use mechanized equipment should be made available to suppression resources, but only with permission from the Refuge Manager. The Refuge Manager or a Resource Adviser¹ (RA) from the Refuge will be made available to provide input regarding these types of suppression decisions.

Fire Management Organization, Contacts, and Cooperation

Fire management technical oversight for the Refuge is provided by FWS Regional fire programmatic staff. The Refuge is within the New England Fire Management Zone; with authorized staffing of a Zone FMO, a Prescribed Fire Specialist, and two career seasonal fire technicians. The primary fire management staffing and support equipment are located at Moosehorn NWR, and are shared among all refuges within the New England zone. Depending upon budgets and the qualifications of personnel assigned to Lake Umbagog NWR, fire qualified individuals may be available to the Refuge as needed. All fire management activities are conducted in a coordinated and collaborative manner with the

¹A resource adviser is a member of the refuge staff that has a working knowledge of refuge resources and can contribute expertise towards developing and implementing sound strategies that protect resources (e.g. Wildlife Biologist).

Refuge and other federal and nonfederal partners. These include New Hampshire and Maine State fire protection agencies, the National Park Service, the USDA Forest Service (White Mountain National Forest) and The Nature Conservancy. Initial attack of any wildfire is carried out by the local volunteer fire departments under cooperative agreements in place or under development among the agencies.

References

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