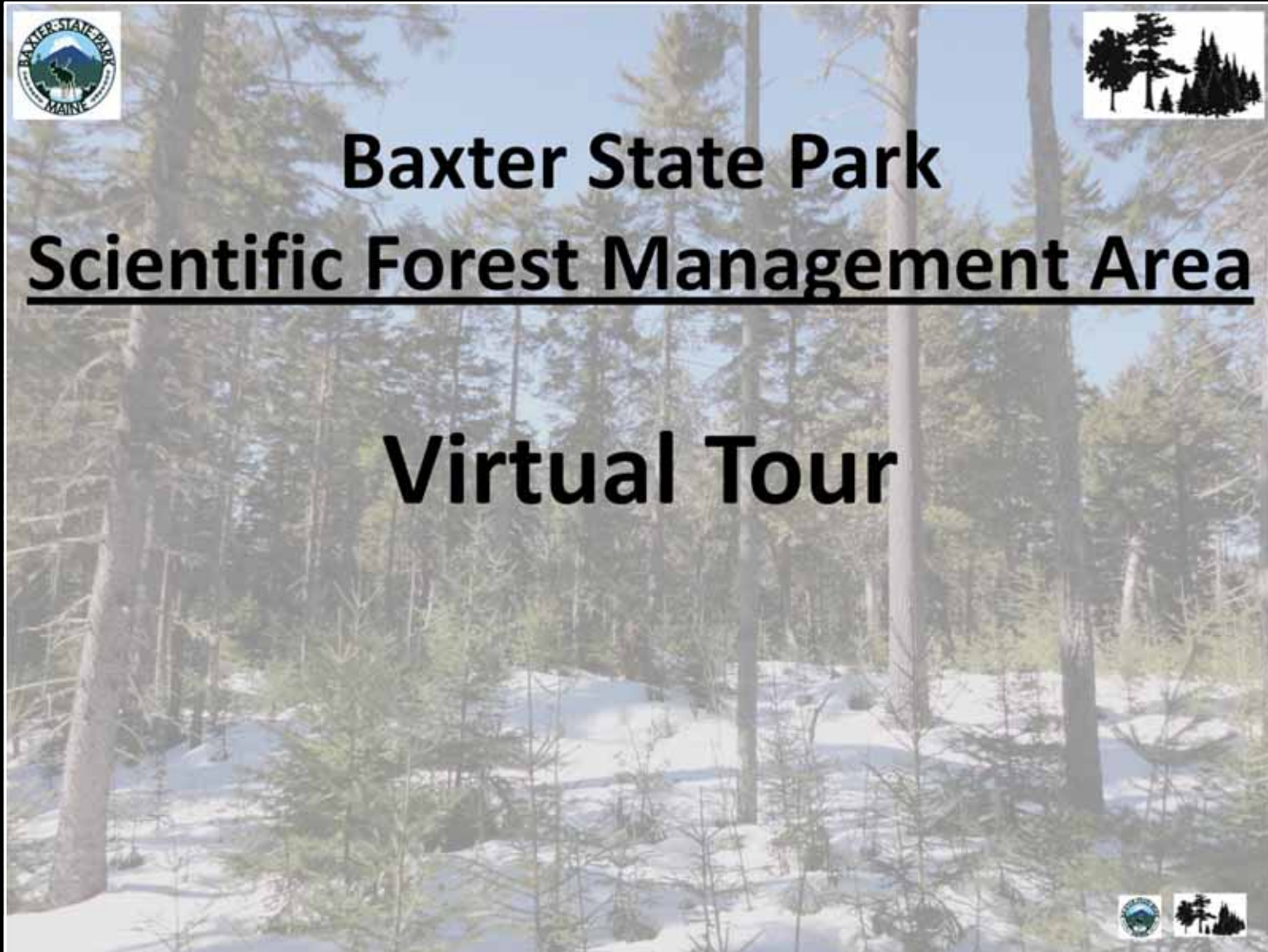




Baxter State Park

Scientific Forest Management Area

Virtual Tour



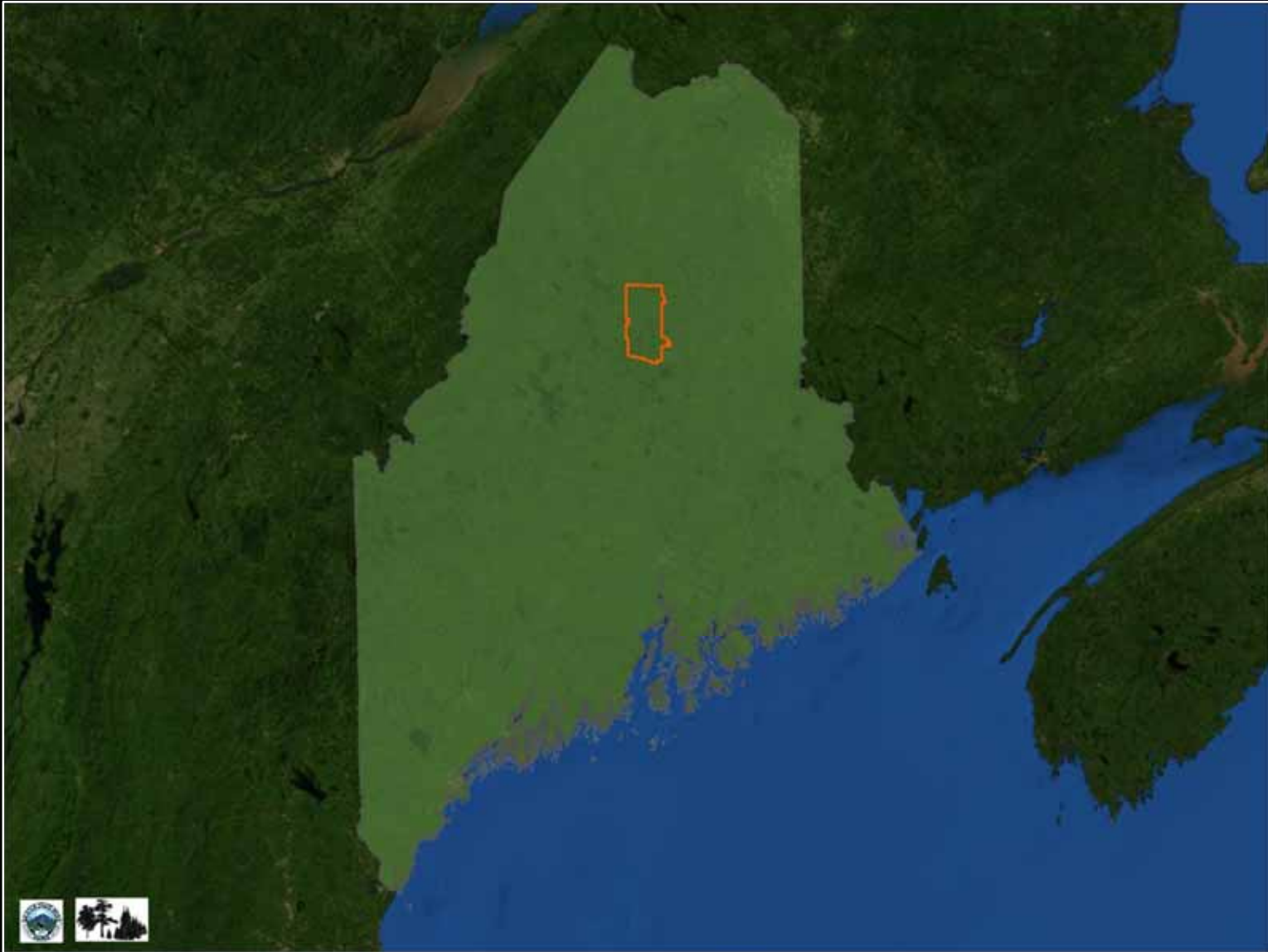
Take a virtual tour of the Baxter State Park Scientific Forest Management Area...



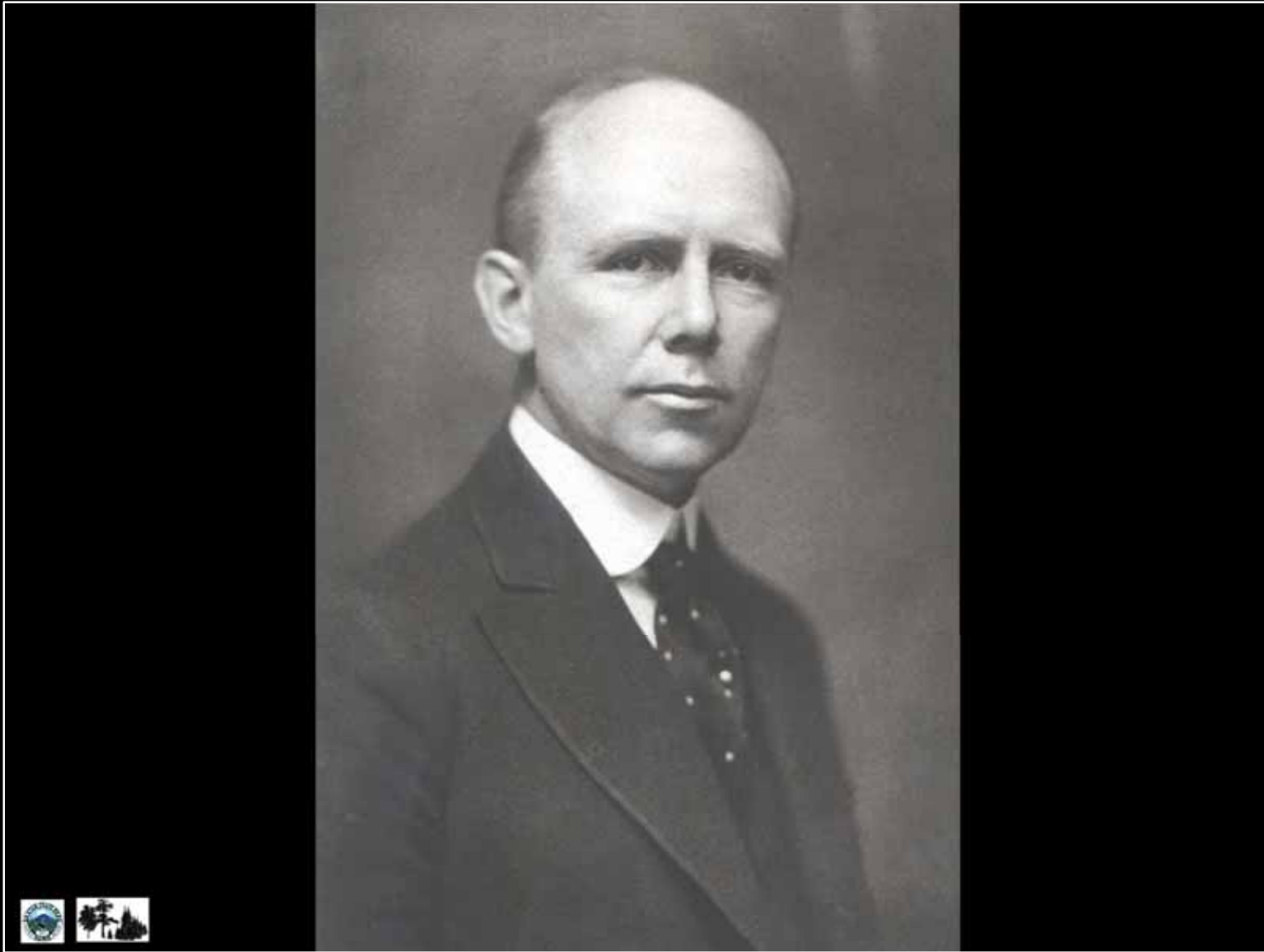
Welcome to the Baxter State Park Scientific Forest Management Area. The following slides with images, maps, and figures will provide the virtual visitor with information about the history, ecology, and forest management activities in the Scientific Forest Management Area (SFMA). We hope you enjoy your tour in this electronic format and we invite you to visit the SFMA in the future.



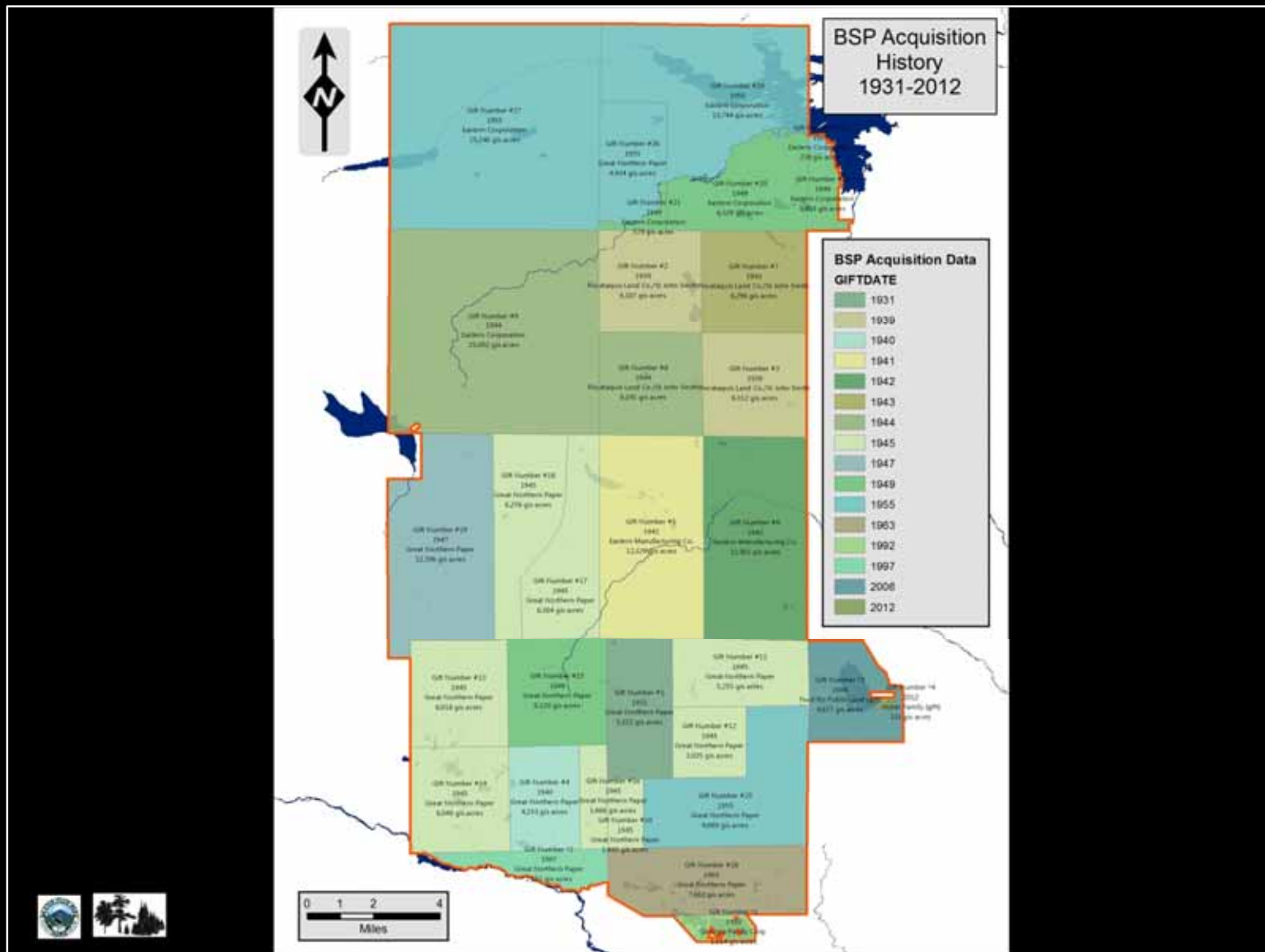
For those new to the State of Maine, it resides in the northeast corner of the Continental United States with its southern tip being less than 75 miles from Boston, MA and its northern tip on the same latitude as Quebec City, Quebec.



Baxter State Park is located in the northern portion of the State and encompasses the transition area of temperate forest types, common to the south, and the boreal forests common to the north.



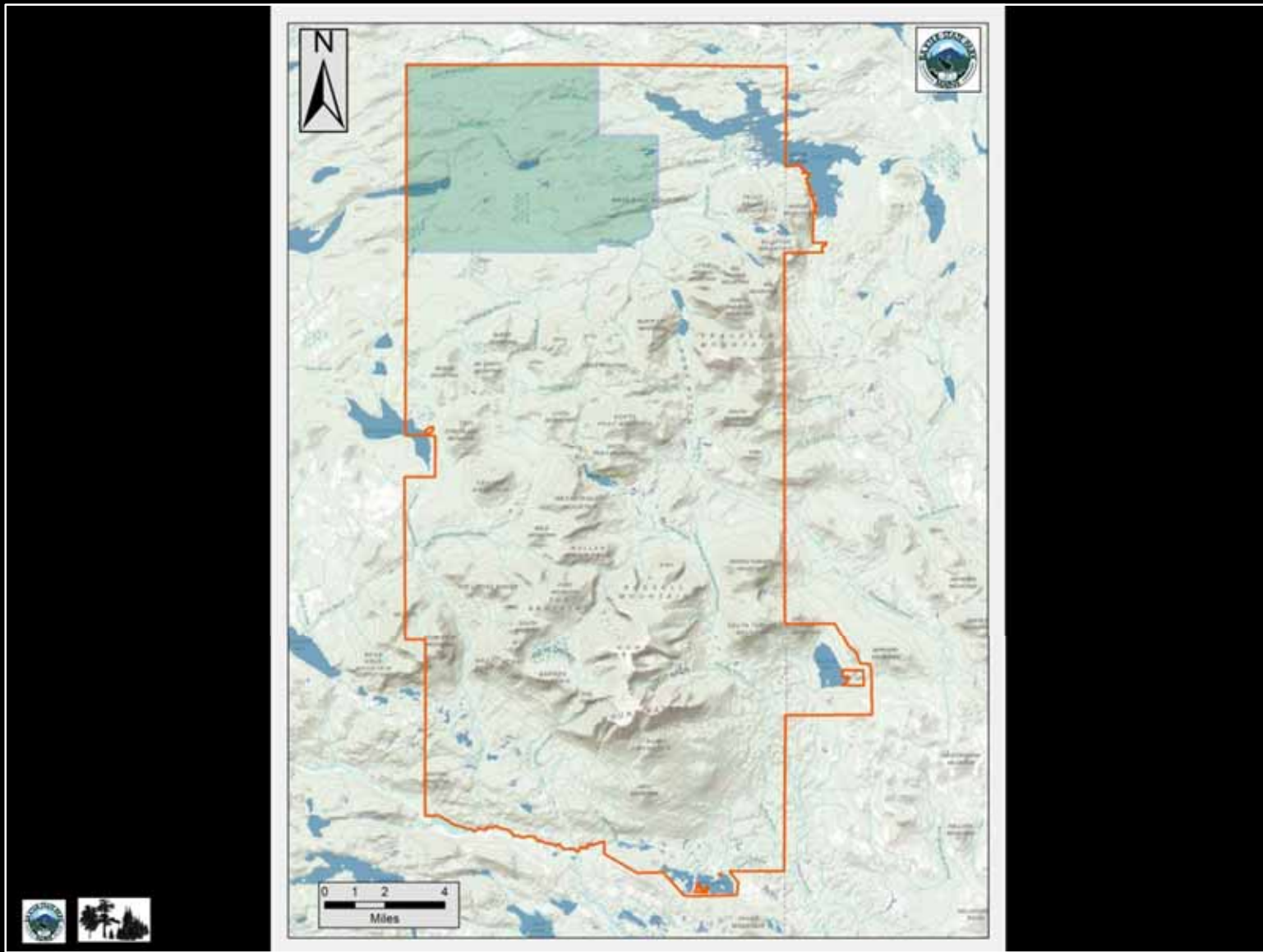
Percival Baxter, who served as Governor of Maine from 1921-1924, purchased the land, that is today Baxter State Park, with his own personal funds and donated it to the people of Maine to be managed for current and future generations.



This map shows the sequence in which Percival Baxter purchased individual parcels before his death in 1969 and also shows those lands purchased after 1969 by the Baxter State Park Authority.



Visitors to Baxter State Park might be surprised to learn that forest products are harvested in a portion of the 215,000 acre Park, in accordance with directives of Percival Baxter.



In 1955 Percival Baxter purchased two parcels, as seen on this map in green, totaling just under 30,000 acres. He designated the area to be managed as a demonstration forest.



Percival Baxter had traveled to Europe where he had seen forest management based on scientific principles. He wanted to provide the opportunity for those concepts to be applied in Maine where the public could see them first hand at a demonstration forest within Baxter State Park.

“I want this township to become a showplace for those interested in forestry, a place where a continuing timber crop can be cultivated, harvested and sold; where reforestation and scientific cutting will be employed; an example and an inspiration to others. What is done in our forests today will help or harm the generations who follow us.”

-Percival P. Baxter 1955



Percival Baxter conveyed these lands to the State of Maine with the guidance contained in this quotation.



AUTHORITY MEMBERS
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JOHN J. P. MADEIRA, JR., BUSINESS MANAGER
64 BALSAM DRIVE
MILLINOCKET, MAINE 04462
(207) 723-2618

April 15, 1980

Baxter State Park Authority
64 Balsam Drive
Millinocket, Maine

Sirs:

Included herewith is a compilation of data and references considered to be of value in the preparation of the Forest Management Plan for the Scientific Forest Management Area of Baxter State Park. Due to the volume, this was not included with the narrative portion of the plan.

This should be considered as the basis, in part, of the management plan.

Sincerely,

A handwritten signature in cursive script, reading "George M. Ruopp".

George M. Ruopp
Forester
Baxter State Park

GMR/bws



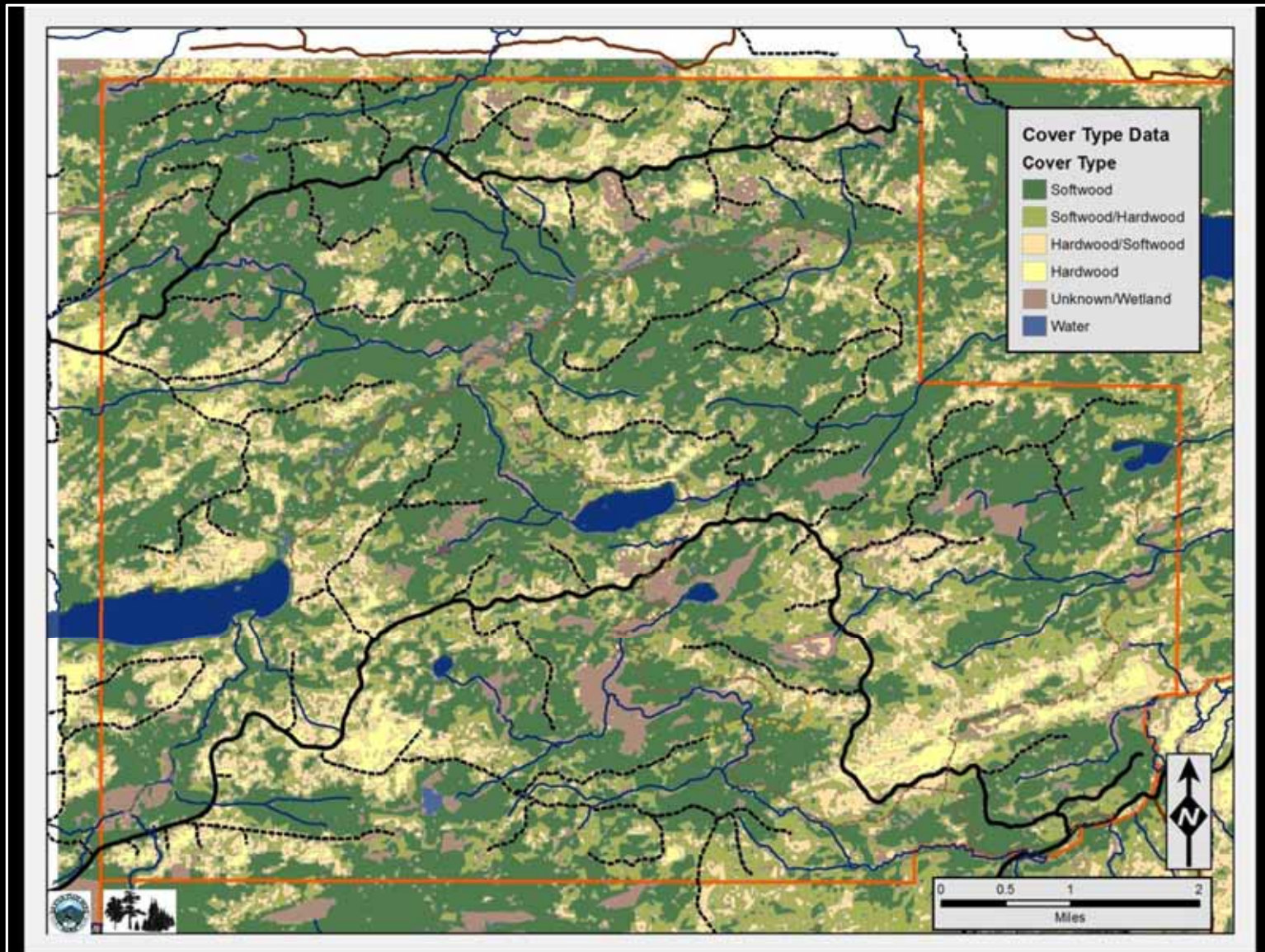
The first Park forester was hired in the 1970's and the first formal forest management plan for the SFMA was adopted in 1980 as described in this letter from forester George Ruopp.



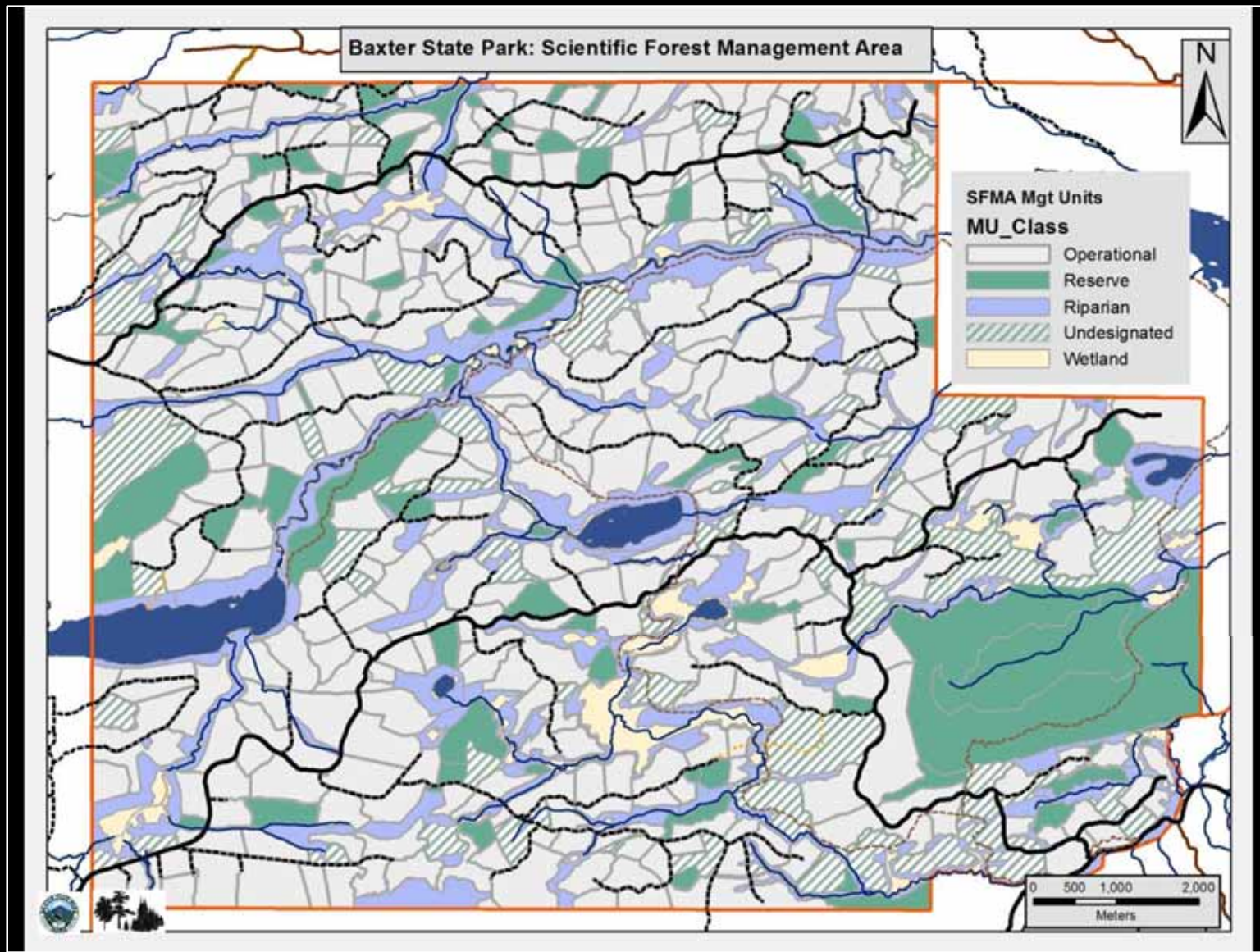
At the time of Baxter's purchase, large portions of the SFMA were still recovering from wildfires that occurred in the early 1900's. The forest of today still bares the mark of these past disturbances. The large white pine trunk in this photo shows charcoal evidence of past fires.



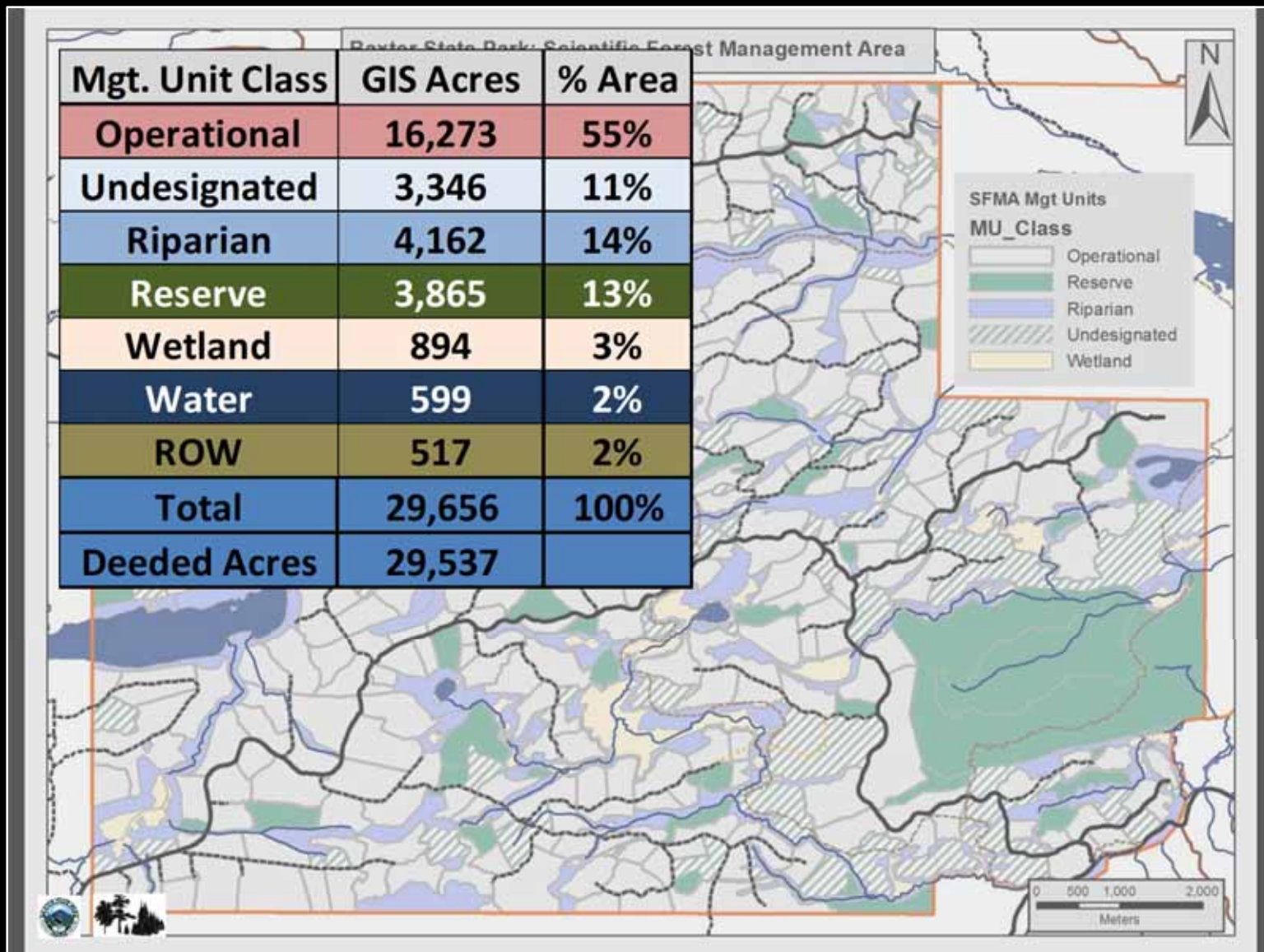
Other areas of the SFMA have seen past timber harvests, stretching from the 1850's - 1940's. These harvests removed commercially valuable species like white pine and red spruce, and in the process regenerated new trees and species assemblages.



Today the current forest is comprised of areas dominated by softwood species like red spruce, areas where fire origin species hardwoods like birch and aspen dominate, and areas where softwoods and hardwoods mix together to varying degrees.



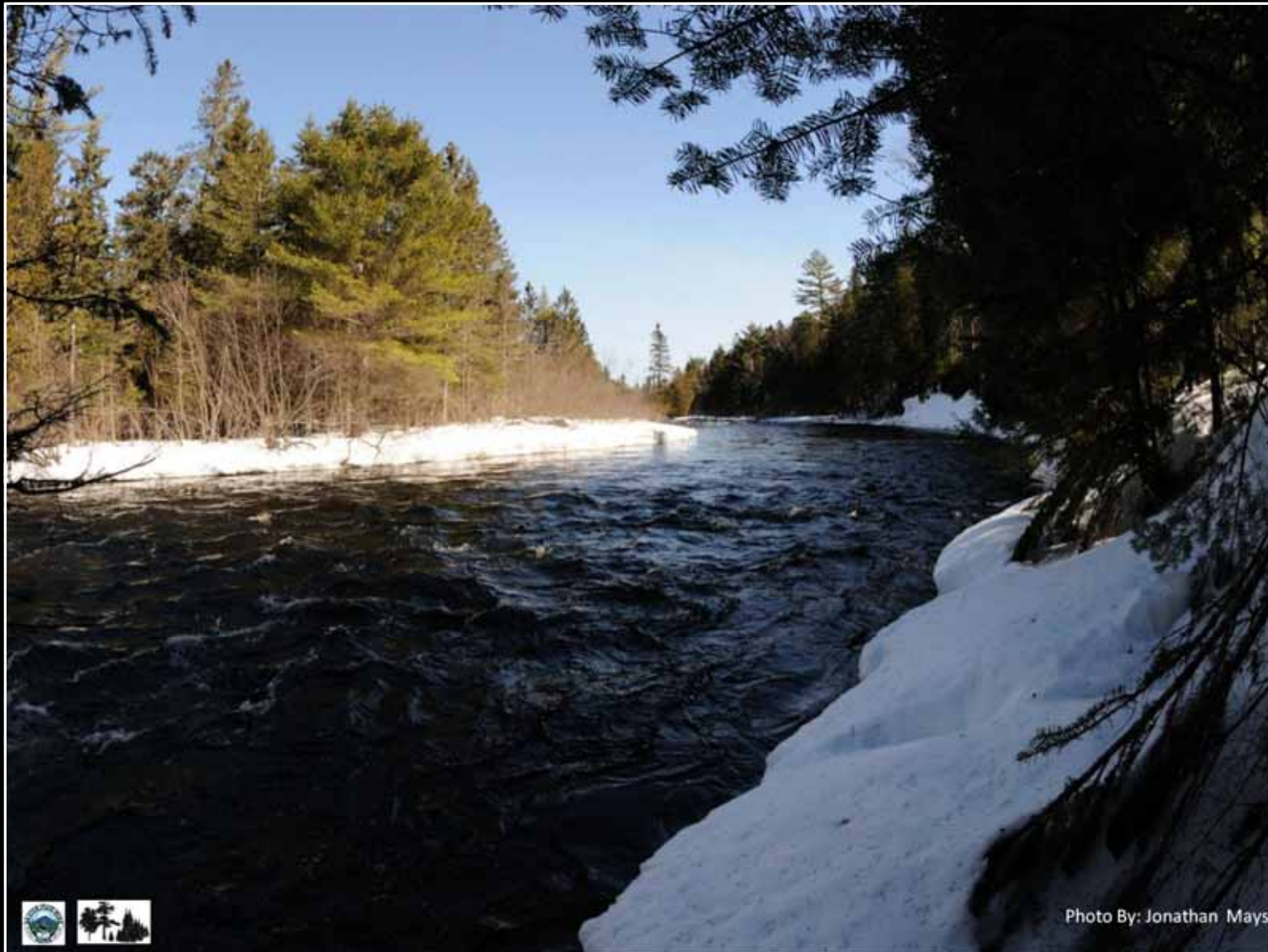
The forest management program in the SFMA has increased in sophistication from its beginning in the 1970's. Today the forest is divided into management classes depicted above. Reserve areas represent forest conditions free from active management, riparian zones along rivers and lakes where management is focused on protecting water quality and wildlife habitat, and operational areas are open to all types of active management. The undesignated areas have yet to be classed into 1 of these 3 groups.



The operational areas represent just over 50% of the total 30,000 acres, while reserve and riparian areas represent 14% and 13%.



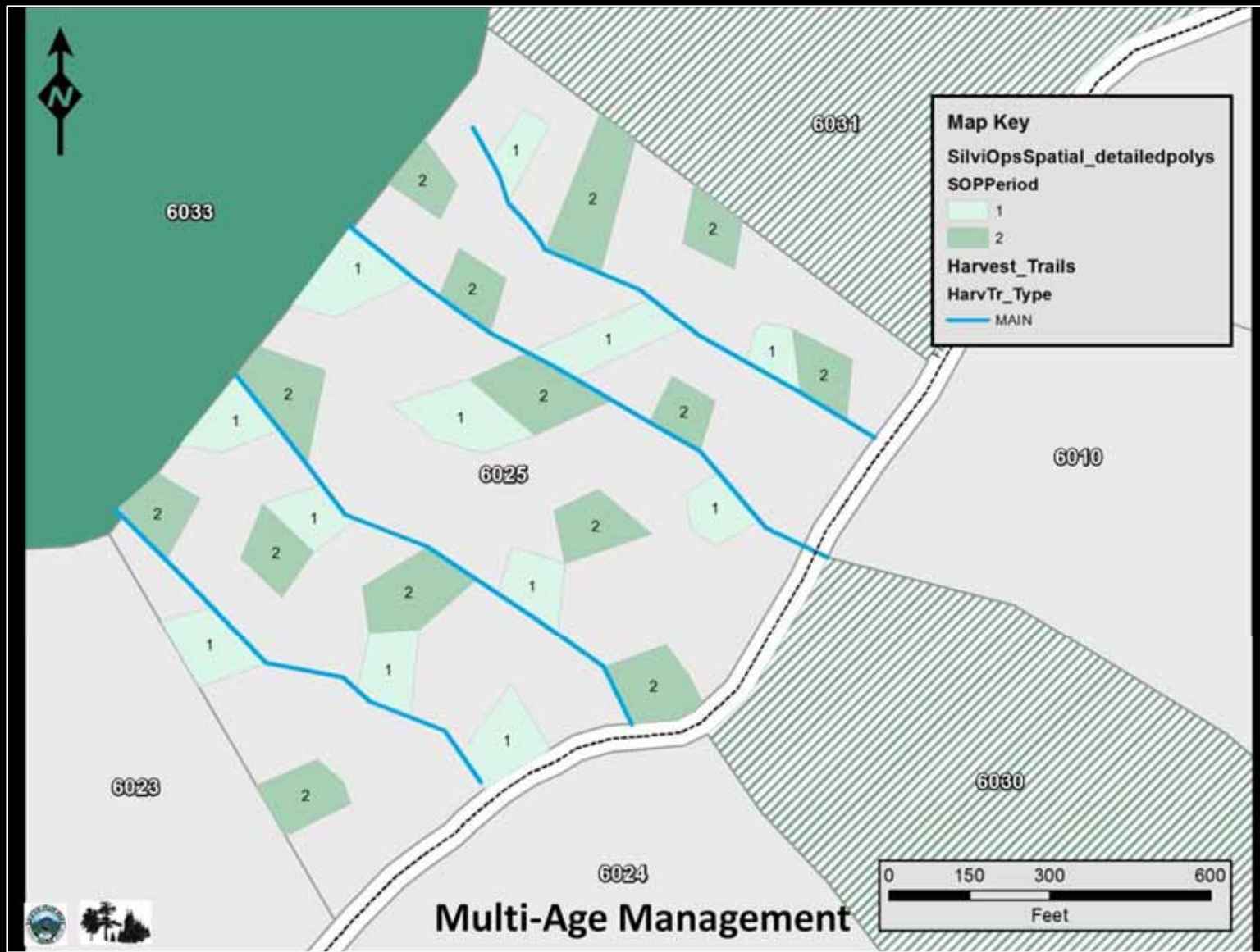
Reserve areas are designated to achieve a variety of management objectives including: preservation of large areas of natural forest where ecosystem process are allowed to occur without human intervention, protection of special areas and natural communities, and establishing benchmarks or biological controls to aid managers in evaluating the influence of active management on forest ecosystems.



Riparian features like lakes and streams are critical ecological components of the landscape. SFMA management has established buffers, called Riparian Management Zones, around these features based on topographic and ecological conditions. Management activities, like timber harvests, conducted in these areas are primarily focused on water quality and habitat management goals.



“Silviculture” is a basic element of forest management and is often described as the art and science of managing the forest to produce products and services for societal benefit. Forest managers use harvesting, just one of many silvicultural tools, to influence the development of individual parts of a forest, to derive benefit from the forest.



Here is a map depicting a type of silvicultural system that creates openings in the forest canopy where new groups of trees will establish and grow to take the place of those harvested when creating the opening. This type of system establishes multiple groups of trees of different ages. The map shows openings created in 2011 (labeled “1”), and a second set of planned openings to be created in 2031 (labeled “2”).



This type of silvicultural system is termed a “multi-aged” approach since multiple age classes of trees are present in the same general area, termed a “stand.” This example shows a ½ acre opening in a stand totaling 20 acres, after a winter harvest. The intention is to allow for a perpetual and regular harvest of trees from the same stand.



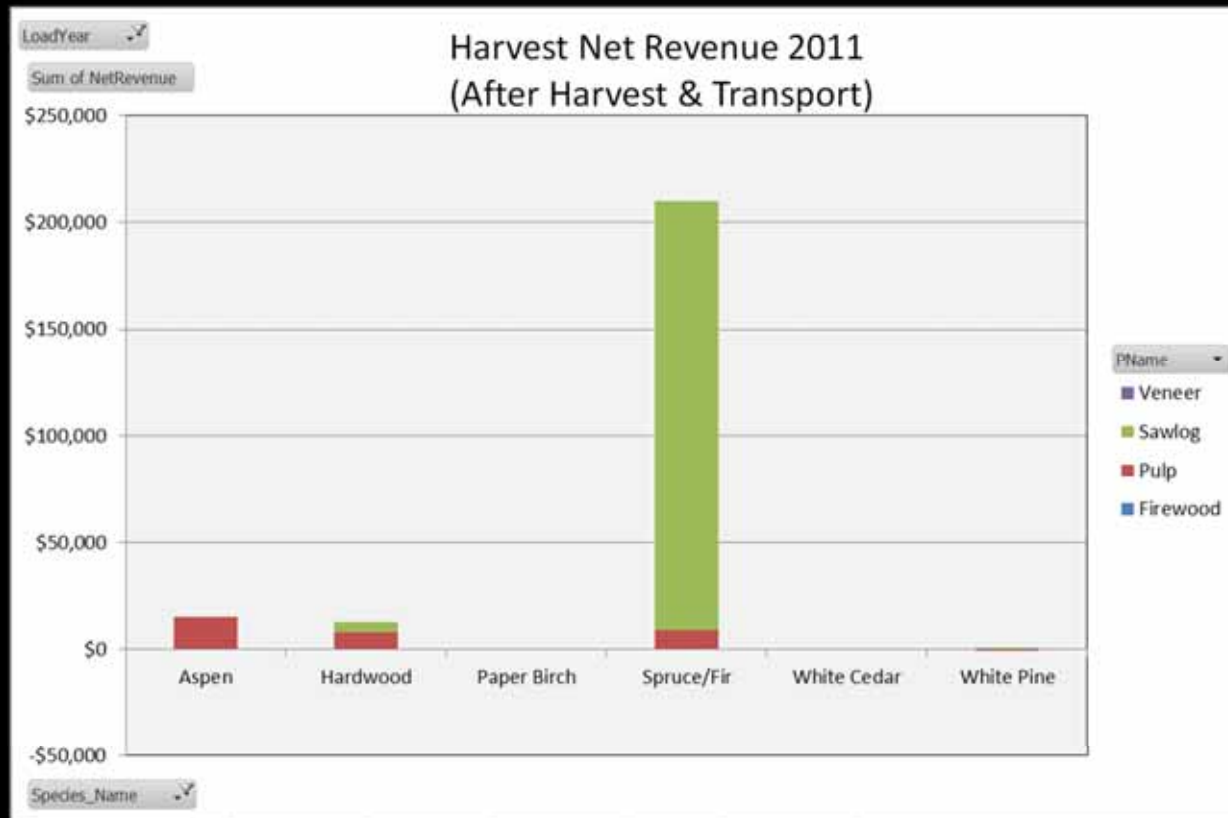
Even-Age Management

Photo By: Dee Brace

Another silvicultural approach is termed “even-age”. Even-age management seeks to develop a single age group of trees across an entire stand. This type of approach enables management of a stand of trees of similar age and size, across a large area, from the time those trees are first established as seedlings until they grow to maturity and are ready to be harvested to start a new stand of young trees again. The SFMA uses both multi-age and even-age approaches to accomplish a broad set of management goals.



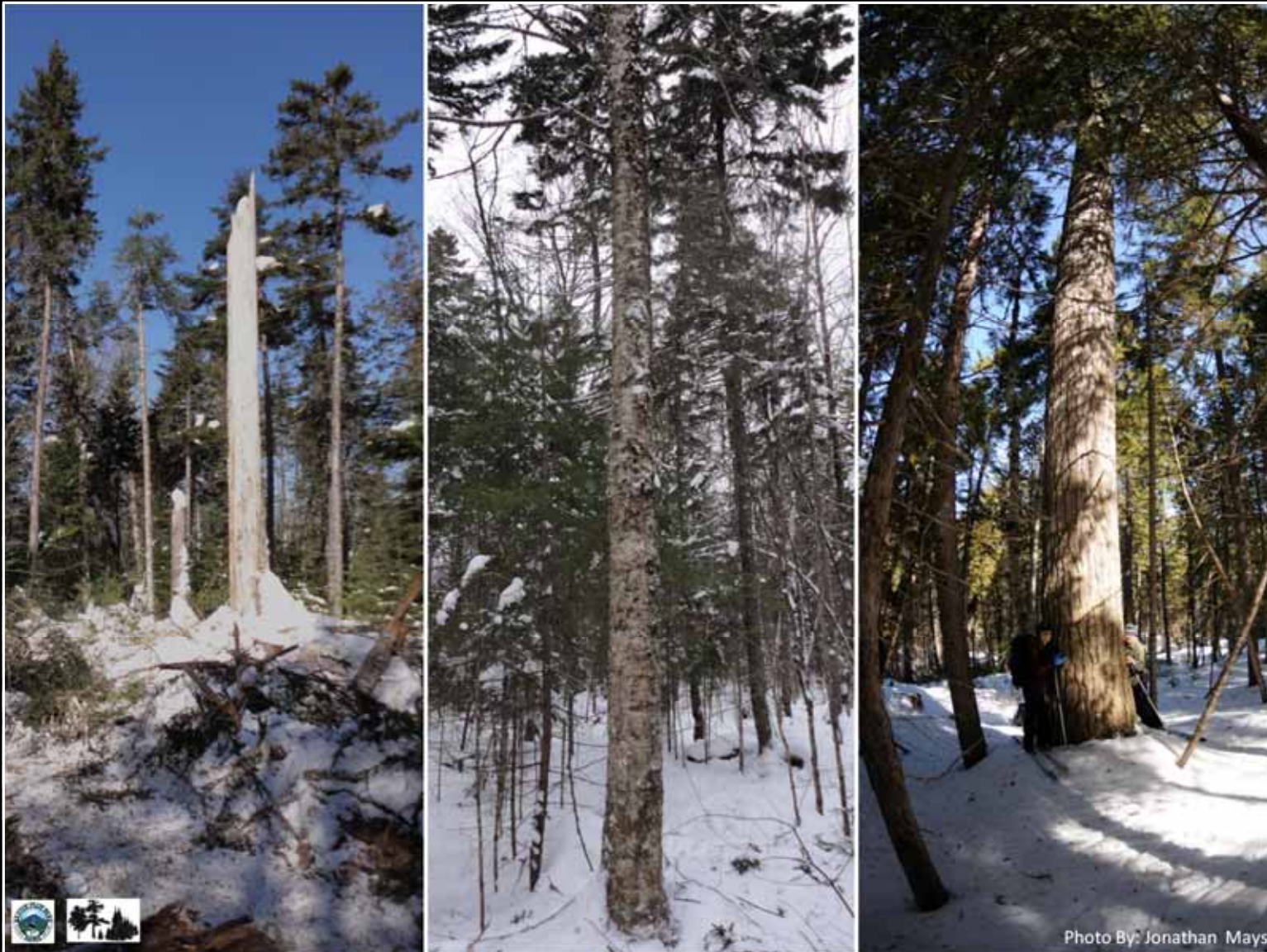
Silviculture requires regular timber harvesting activity. Most harvesting is done with mechanized equipment. Sophisticated machines do the hard and dangerous work of cutting and hauling trees to roadside landings where products are loaded on trucks and hauled to market. While the equipment separates the operators from the physical task of harvesting trees, their skill and attention to detail is essential to achieving management goals and minimizing impacts of harvesting on the stand and the ecosystem.



Species_Name	PName	Firewood	Pulp	Sawlog	Veneer	Grand Total
Aspen			\$ 15,106.89			\$ 15,106.89
Hardwood			\$ 8,112.36	\$ 4,586.89		\$ 12,699.25
Paper Birch						
Spruce/Fir			\$ 9,185.08	\$ 200,774.23		\$ 209,959.30
White Cedar						
White Pine			\$ (91.86)	\$ 926.10		\$ 834.23
Grand Total			\$ 32,312.47	\$ 206,287.21		\$ 238,599.68



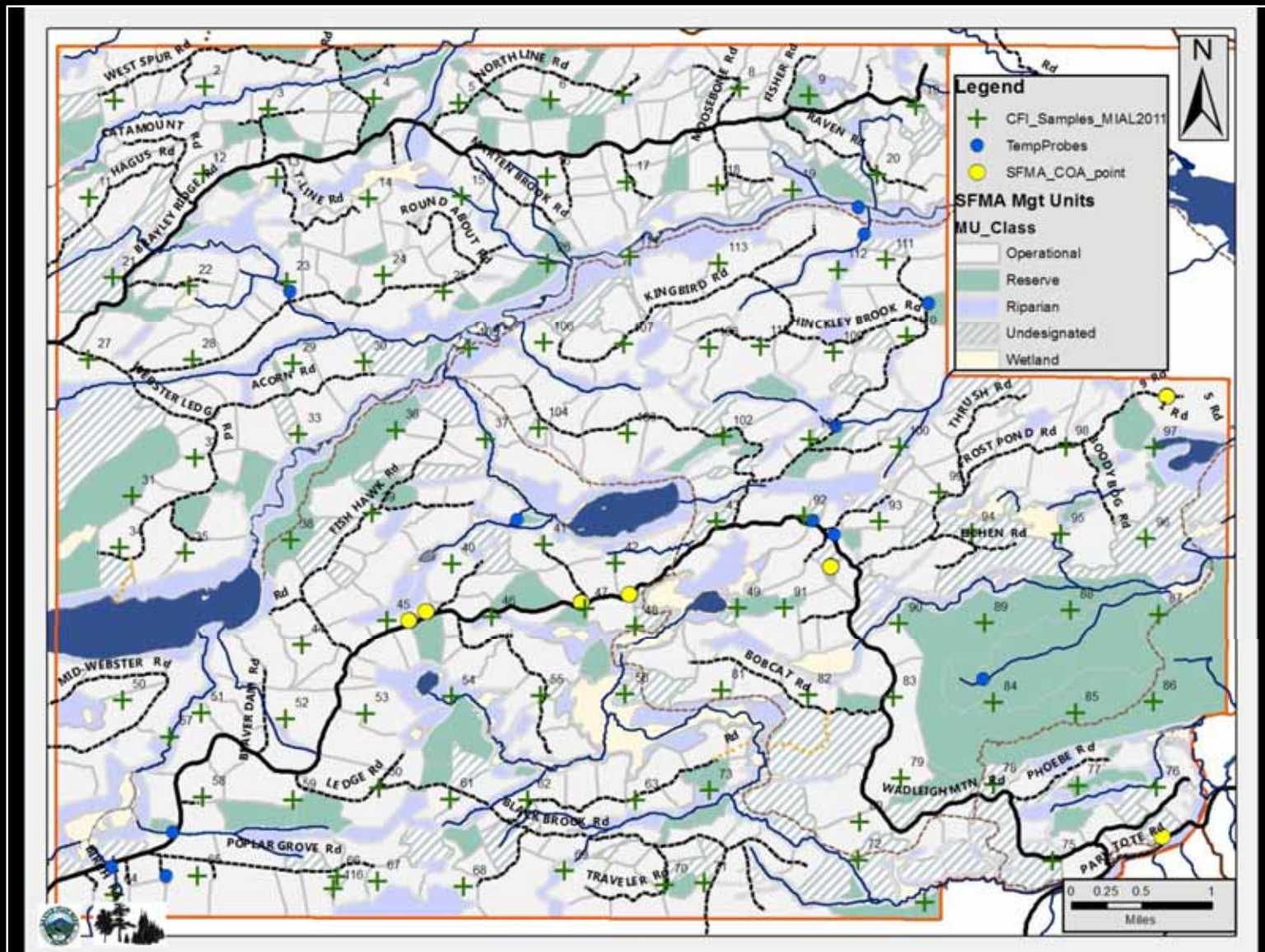
Revenues from the sale of forest products are an important part of the overall Park budget.



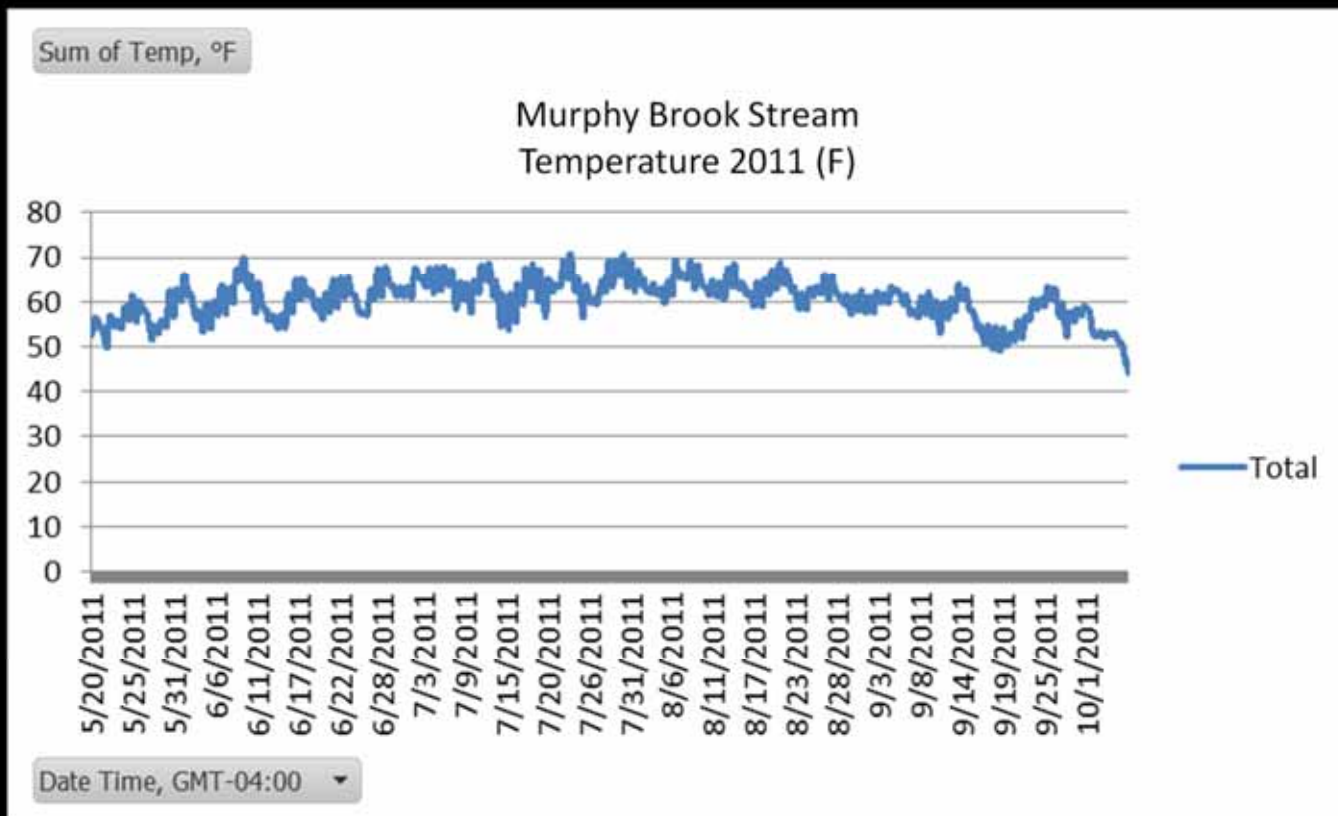
Whether the silviculture is focused on creating multiple age classes of trees or producing a single aged structure, retention of living and dead trees is an important part of forest management. Dead trees both when standing and on the ground, provide important habitat for a variety of wildlife. Vigorous and well formed trees can provide important seed sources for future crops of commercially valuable species, and large old trees can provide important diversity of stand structures in the managed forest area.



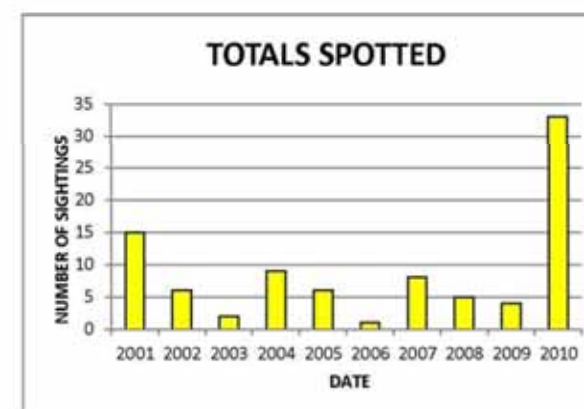
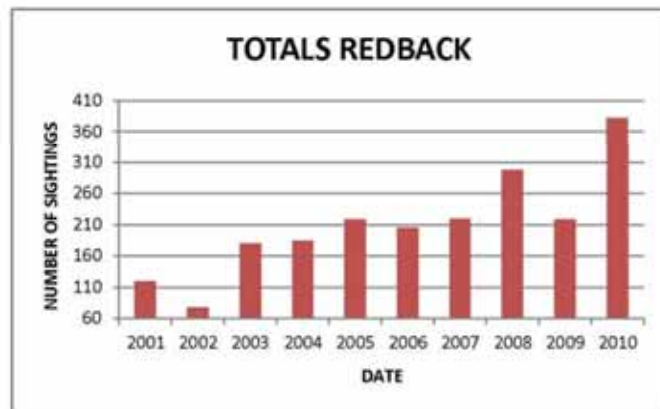
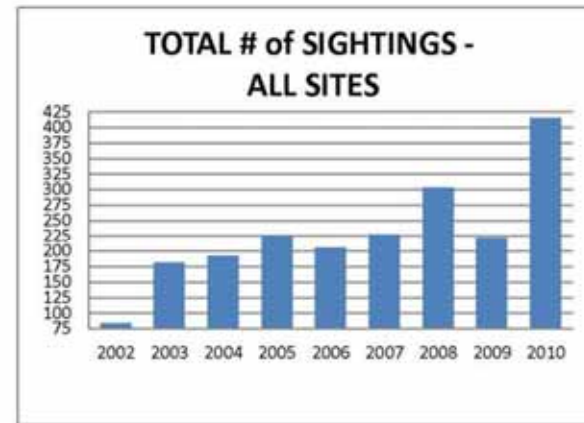
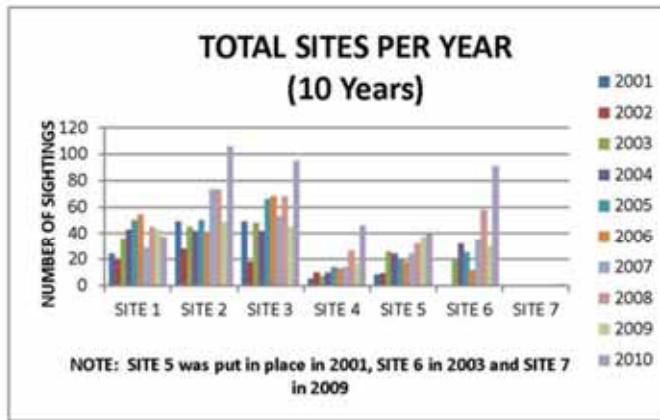
An extensive network of forest management roads in the SFMA require constant maintenance like grading, ditching, and culvert replacement. This is expensive and time consuming work but is an essential part of sound forest management. Access provided by road networks enable the harvesting of forest products, the monitoring of forest conditions, and recreational use by park visitors.



A variety of standardized monitoring systems are used in the SFMA. One system known as a continuous forest inventory (shown as green crosses on this map) includes measurement of permanent plots where all trees on a 1/5 acre plot are numbered allowing diameters and height measurements of the same trees to be taken on a 10 year cycle. This type of information helps managers know how fast the forest is growing and the rate at which disturbance events cause trees to die.



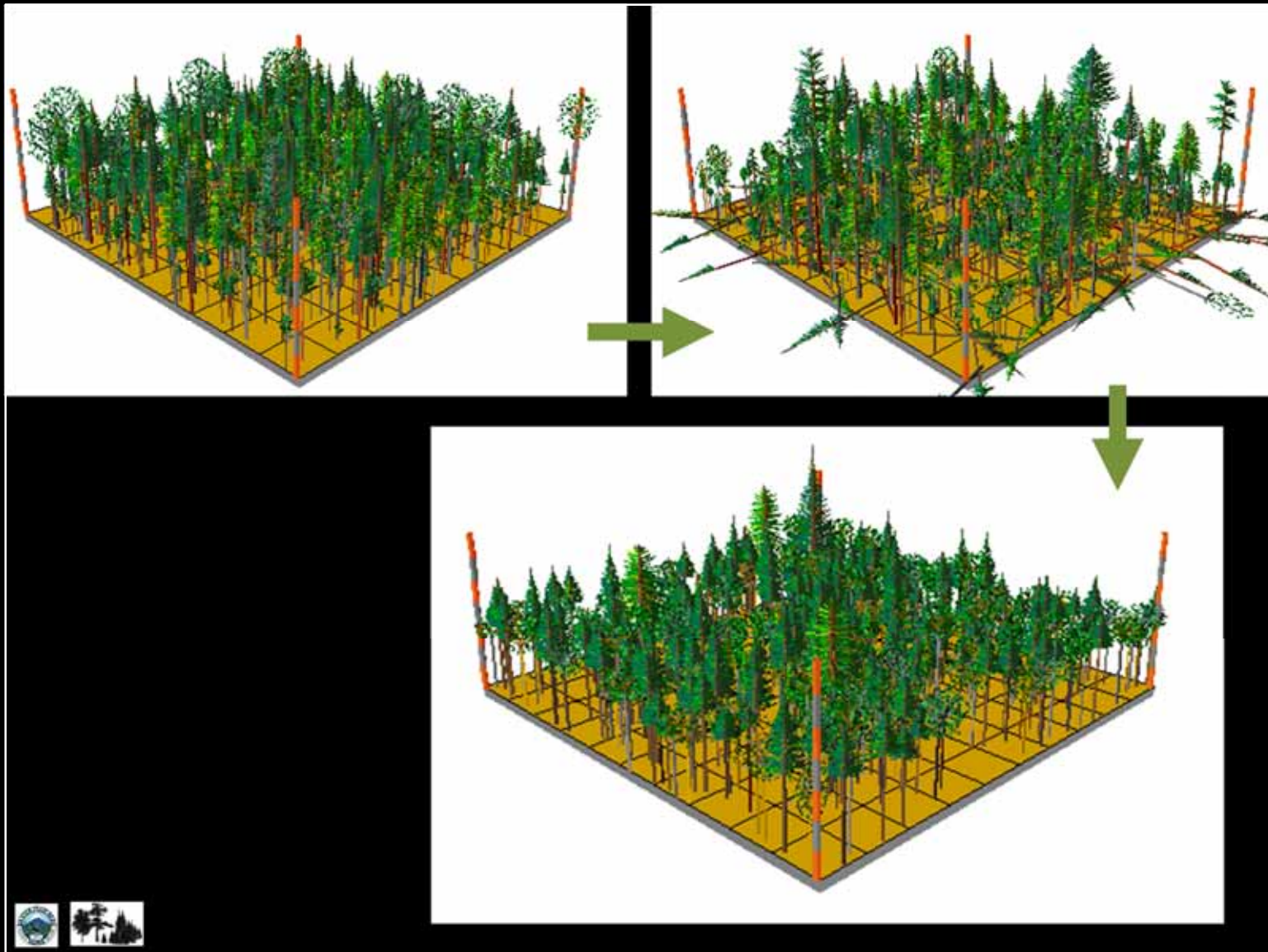
A system of temperature monitoring devices record water and air temperatures at specific sites throughout the SFMA. Data like that show here for Murphy Brook in 2011, provide managers with a baseline against which to compare future measurements to evaluate the influence of management actions and/or effects of changes in climate.



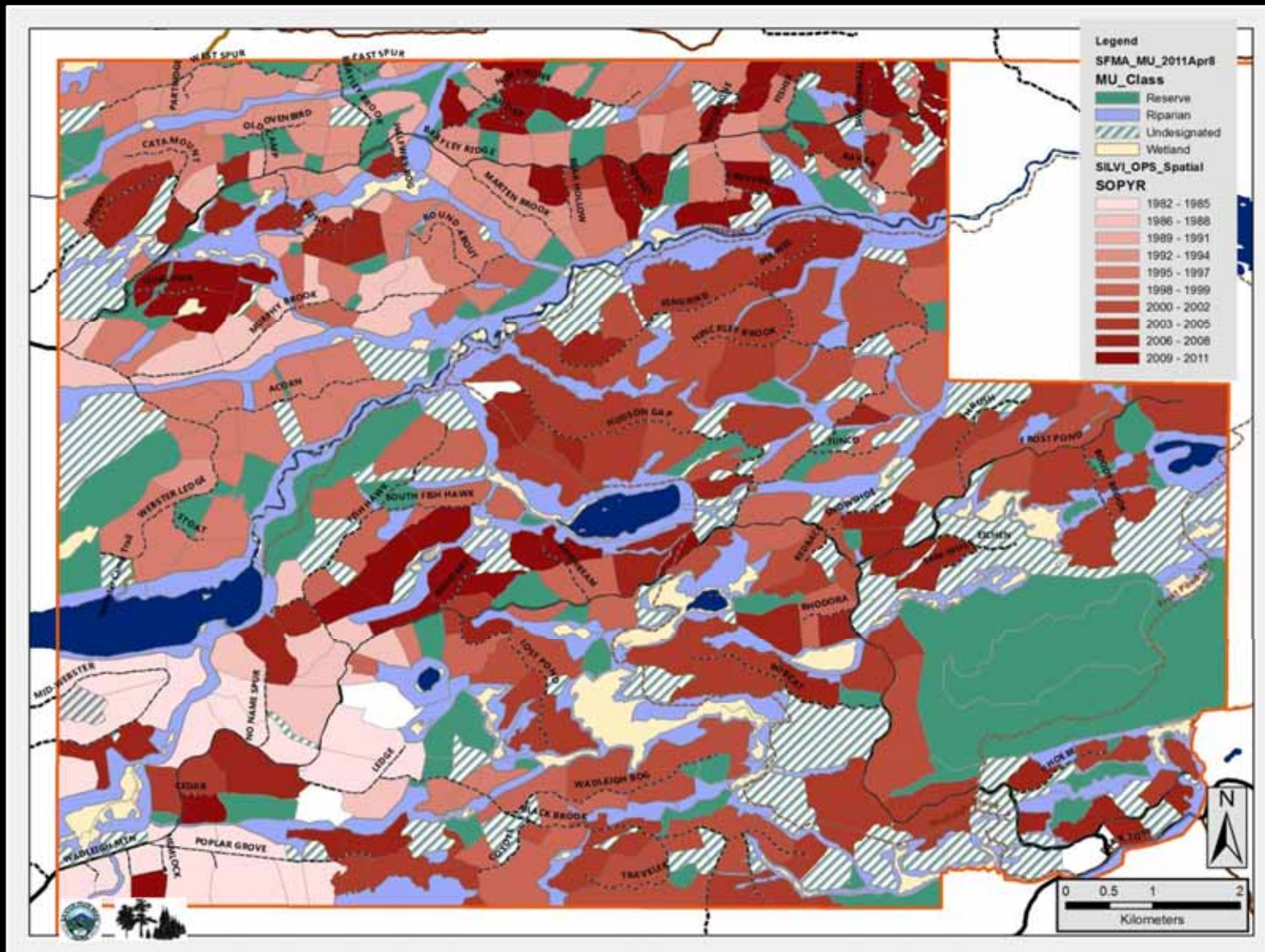
A network of sampling stations are checked regularly during the summer to collect data on the presence of forest dwelling salamander species. Like the temperature data these measurements will provide future managers with a baseline against which to compare their measurements.



Forestry is fundamentally about the future. Forests in this region develop over long timelines that span multiple generations of foresters who manage them. This annual growth rings of this red spruce tree tell this story very effectively, as the tree took almost 300 years to reach the mature age at which it was finally harvested.



Forestry involves many things, but planning is perhaps the most important element as the intention expressed in plans and related documentation is what separates forest management from “*just logging.*” Forest managers use many tools including computer models to help forecast the development of the forest under different management scenarios.



Forest management requires a landscape level perspective, that strives to orchestrate forest conditions over long time periods to achieve management objectives such as:

- A. Protecting water quality
- B. Protecting biodiversity providing wildlife habitat
- C. Enabling a sustained harvest of forest products.

This map shows the sequence of harvesting over the last 30 years. Current planning efforts are aimed at developing plans for the next 30 years.



The SFMA advisory committee, comprised of 12-15 forestry professionals and interested members of the public, help Park staff determine management directions and policy directives.



Percival Baxter envisioned a place where the people of Maine and beyond could come and learn about forest management.



Park staff strive to make the SFMA the “showcase” that Baxter desired. In 2011 alone the Park hosted over a half dozen tours for groups of professional foresters, members of the public and...



...Forestry students like undergraduates from the University of Maine at Fort Kent.

SCIENTIFIC CERTIFICATION SYSTEMS

(This document certifies that an independent assessment has been conducted of)

Baxter State Park

64 Balsam Drive, Millinocket, ME 04462

This operation meets all of the necessary qualifications to be certified for the following claim:

Well Managed Forest Certification

Baxter State Park has been shown to meet all of the necessary qualifications to be certified as a Well-Managed Forest in accordance with the Forest Stewardship Council's Principles & Criteria, as elaborated by the FSC-US Forest Management Standard (v1.0).

For the following product(s):

Logs of Abies balsamea, Balsam fir; Picea rubens, Red Spruce; Picea glauca, White Spruce; Picea mariana, Black Spruce; Thuja occidentalis, Northern White Cedar; Pinus strobus, Eastern White Pine; Tsuga Canadensis, Eastern Hemlock; Fagus grandifolia, American Beech; Betula alleghaniensis, Yellow Birch; Betula papyrifera, White Birch; Acer rubrum, Red Maple; Acer saccharum, Sugar Maple; Fraxinus Americana, White Ash; Populus tremuloides, Aspen.

Certificate Code: SCS-FM/COC-00145N Trademark License Code: FSC-C107759

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Robert J. Hrubec, Ph.D., Senior Vice President
Scientific Certification Systems
2000 Powell Street, Suite 600, Emeryville, CA 94608 USA



The SFMA has been recognized for practicing exemplary forest management, first receiving Forest Stewardship Council (FSC) certification in 2001.



See for yourself what forest management looks like by visiting one of the many management roads, hiking trails, or waterways in the Scientific Forest Management Area.