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Forest Service

Chequamegon-Nicolet
National Forests



Chequamegon-Nicolet National Forests

Fiscal Year 2006 Monitoring and Evaluation Report

September 2007





**Ashland, Bayfield, Florence, Forest, Langlade, Oconto, Oneida,
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APPROVAL AND DECLARATION OF INTENT

I have reviewed the FY2006 Monitoring and Evaluation Report for the Chequamegon-Nicolet National Forests that was prepared by an interdisciplinary team during the spring and summer of 2007. I am satisfied with its findings and intend to consider recommendations made therein as we revise our Forest Plan. The Monitoring and Evaluation Report meets the intent of both the Forest Plan (Chapter IV) as well as the regulations contained in 36 CFR 219.

This report is approved:


Jeanne Higgins
Forest Supervisor

September 28, 2007
Date

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EXECUTIVE SUMMARY

Implementation and monitoring of the 2004 Chequamegon-Nicolet National Forests (CNNF) Land and Resource Management Plan (Forest Plan) began immediately after its approval.

The primary purposes of monitoring Forest Plan implementation are to:

1. Evaluate how well the direction in the Forest Plan is being implemented.
2. Determine whether the application of standards and guidelines is achieving objectives, and whether progress towards objectives translates into goals.
3. Determine whether the assumptions and predicted effects used to formulate the goals and objectives are accurate.

This report describes monitoring items by Forest Plan goals and objectives, provides data pertaining to the effects and effectiveness of Forest Plan management direction, and discusses various resource management efforts in which the CNNF engaged in Fiscal Year 2006 (October 2005 – September 30, 2006), hereafter referred to as FY 2006. This report also evaluates the results of the monitoring accomplished during FY 2006.

The FY 2006 Monitoring and Evaluation Report (Report) documents no significant adverse changes to the Forest resources that occurred in FY 2006. Fiscal Year 2006 was another solid showing for the CNNF. While operating at 4.8% under budget projections, many great things were accomplished including:

- Paying host counties nearly \$2 million through revenue (or receipt) sharing programs (the third highest total ever);
- Continuing positive population trends for two of our federally threatened species: gray wolf and bald eagle;
- Extinguishing 68 wildfires and conducting 3,200 acres of prescribed burning without injury;
- Reconstructing 10 stream crossings to improve fish passage and reduce annual sedimentation by tons—literally; and
- Discovering 44 new heritage resources, bringing the CNNF total to 2,449, and monitoring 128 known resources that exhibited no damage or disturbance.

In 2004, the Forest Service Chief identified four threats that face our nation's forests: fire and fuels, non-native invasive species (NNIS), loss of open space, and unmanaged recreation. As mentioned above, we were successful battling fires, and the Report will discuss how we've also continued to manage fuel loads. The CNNF continues to battle NNIS like spotted knapweed, reed canary grass and Canada thistle with aggressive on-the-ground tactics and through cooperative efforts like the Northwoods Cooperative Weed Management Area and Upper Chippewa Invasive Species Cooperative. These partnerships will be vital to controlling NNIS throughout northern Wisconsin. Similarly, emerald ash borer was held at bay throughout Wisconsin during FY 2006, and we'll continue to rely heavily on public and regional participation in those efforts. Destructive insects and diseases that are already here like Gypsy moth, two-lined chestnut borer, oak wilt, and spruce decline were treated

successfully throughout the year, and continued efforts will be required for many years to minimize their impacts to the health of the forest.

The other threats facing our nation's forests are largely social issues. The loss of private open space will draw more interest to the large public lands such as the CNNF. And with that increased interest, it is more likely that a surge of recreation will be a challenge to manage. The Forest Plan is designed to guide us through these challenges, and this design will be tested in the up coming years. We will be closely monitoring the effects these trends have on the CNNF, and if necessary, we'll make adjustments to our Forest Plan. To date, no changes have been made, though should any changes to the Forest Plan be necessary, our annual Monitoring and Evaluation Reports will keep you informed.

There is an increasing awareness and concern regarding shifts in global climate patterns. As it is believed that carbon dioxide emissions play a significant role in global climate change, and trees are known to sequester carbon dioxide from the atmosphere, we have an intense interest in understanding our current and future role in "growing clean air." Fortunately for the CNNF, research has been conducted on this forest that is breaking new ground in this emerging scientific arena (White et al. 2005). We feel obligated to explore how the CNNF can benefit society in ways Gifford Pinchot never imagined when he was appointed the first Chief of the Forest Service in 1905.

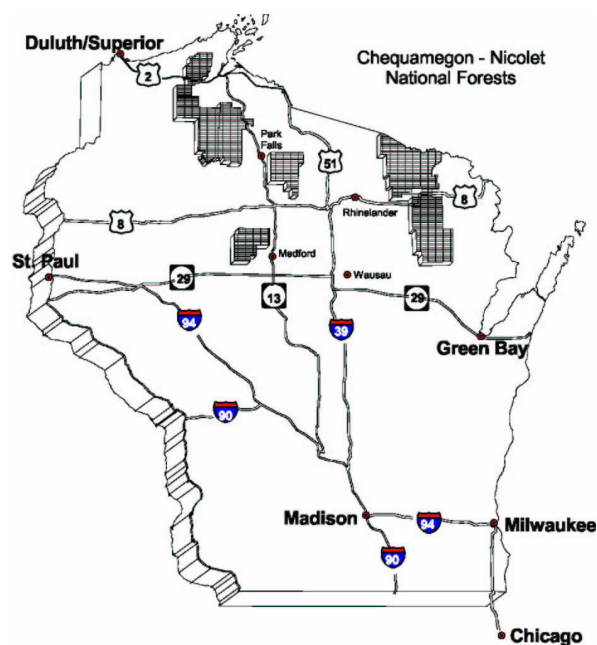
Certainly, the next few years will be exciting for the CNNF, and we are looking forward to them. Since 1933, when the CNNF began managing a cut over landscape in northern Wisconsin that had been burned and unsuccessfully farmed and grazed, Forest Service employees have been looking forward to the day when this young forest begins to mature. In many cases, it appears we are finally entering that era. The CNNF is coming of age. However, before we march forward, this report offers a recap of how we performed in the last year, and lends indications of how we will need to change in the future.



I. INTRODUCTION AND FOREST PLAN OVERVIEW

Introduction

The Chequamegon-Nicolet National Forest (CNNF) is located in Wisconsin's Northwoods, covering over a million and a half acres. Both Forests were established by Presidential proclamation in 1933, and in 1993, the two Forests were administratively joined. The CNNF boundaries encompass National Forest System lands within eleven different Wisconsin counties: Ashland, Bayfield, Florence, Forest, Langlade, Oconto, Oneida, Price, Sawyer, Taylor, and Vilas. The Forest has five Ranger Districts: Great Divide, Medford-Park Falls, Washburn, Lakewood-Laona, and Eagle River-Florence. The Argonne Experimental Forest and Oconto Seed Orchard are found on the Nicolet land base as well. Four Ranger Districts maintain offices in the communities with which it shares its names. The Great Divide District has offices in the communities of Glidden and Hayward.



In April 2004, the CNNF released the Land and Resource Management Plan (Forest Plan), which was a revision and combination of the Chequamegon Forest Plan and Nicolet Forest Plan, both released in 1986. The Forest Plan provides guidance for all resource management activities on the CNNF. It establishes: forestwide multiple-use goals and implementing objectives; forestwide management requirements (known as Forestwide Standards and Guidelines); Management Area direction, including area-specific standards and guidelines, desired future conditions and management practices; identification of lands suited/not suited for timber management; monitoring and evaluation requirements, and recommendations to Congress for additional Wilderness. To determine the efficacy of a

Forest Plan, the National Forest Management Act (NFMA) regulations (36 CFR 219) have required regularly scheduled monitoring and evaluation.

Forest Plan Overview

Monitoring and evaluation are divided into three broad categories and are designed to answer the following basic questions:

1. *Implementation Monitoring* - Did we do what we said we were going to do? This question answers how well the direction in the Forest Plan is being implemented. Collected information is compared to objectives, standards, guidelines and management area (MA) direction.

2. *Effectiveness Monitoring* - Did it work how we said it would? This question answers whether the application of standards and guidelines is achieving objectives, and whether objectives are achieving goals.

3. *Validation Monitoring* - Is our understanding and science correct? This question answers whether the assumptions and predicted effects used to formulate the goals and objectives are accurate.

The aim of monitoring is adaptive management – the ability to respond to current conditions or make appropriate changes based on new information or technology. Depending on the answers to the above questions, the Forest Plan may be amended or revised to adapt to new information and changed conditions.

Because fiscal year (FY) 2006 was only the second complete year we operated under the Forest Plan, the type of monitoring most commonly reported herein is implementation monitoring. We must first ensure that we are properly following the objectives, standards and guidelines established in our Forest Plan before we can answer the questions underlying effectiveness and validation monitoring. These other two types of monitoring will play larger roles in the near future when the results of proper Forest Plan implementation will be more apparent and validated. This early in the life of the Forest Plan, on-the-ground changes to forest type composition, age structure, and other attributes within MA's have been too minimal to be meaningfully evaluated. This data will be reported in a future monitoring report as part of trend analyses for each MA.

Monitoring Strategy

Monitoring and evaluation are separate activities. Monitoring is the process of collecting data and information. Evaluation is the analysis and interpretation of the information and collected data. A key requirement of a monitoring strategy is that the public be given timely, accurate information about Forest Plan implementation. This is done through the release of an annual monitoring and evaluation report (Report). The monitoring program must be efficient, practical and affordable, and may make use of data that has been or will be collected for other purposes.

Monitoring tasks are scaled to the Forest Plan, program or project to be monitored. Each of these entails different objectives and requirements. Monitoring is not performed on every single activity, nor is it expected to meet the statistical rigor of formal research. Budgetary constraints affect the level of monitoring that can be done in a particular fiscal year. If budget levels limit the Forest's ability to perform all monitoring tasks, then those items specifically required by law are given the highest priority. The Report provides the summary and, at scheduled intervals, an evaluation of the monitoring results.

Minimum Legally Required Monitoring

Minimum monitoring and evaluation requirements have been established through the NFMA at 36 CFR 219. Some requirements provide guidance for the development of a monitoring program, while others include specific compliance requirements. The minimum legally

required monitoring tasks are identified in Table 4-1 of the Forest Plan and are noted in this report.

Monitoring Progress of Forestwide Goals and Objectives

Forest goals are broad statements describing conditions the CNNF will strive to achieve. Achievement of goals is not mandatory, there are no specific time frames for achieving them, and they are not amenable to direct measurement. In other words, goals describe the ends desired rather than the means to achieve these ends. The three primary goals are: 1) Ensure sustainable ecosystems; 2) Provide multiple benefits for people; and 3) Ensure organizational effectiveness.

Forest objectives are statements of measurable results intended to promote the achievement of Forest Plan goals. Objectives generally are achieved by implementing projects or activities. Objectives shared below either have a stated timeframe for accomplishment, or they will be accomplished during the life of the Plan (10-15 years).

Although the Report is a stand-alone document, it is also a companion to the Forest Plan. The Report is arranged by the same general outline and headings are identical. We believe this is the easiest way to chart progress on the commitments outlined in the Forest Plan. The Report summarizes the results of completed monitoring and (at predetermined intervals) evaluates the data. The evaluation process determines whether the observed changes are consistent with Forest Plan desired future conditions, goals, and objectives, and identifies what adjustments may be needed.

The Report provides summaries of data collected, and whenever appropriate, it evaluates the data, provides conclusions, and makes recommendations. Comparison of subsequent monitoring and evaluation reports will provide a means to track management effectiveness from year to year and to show the changes that have been made or are still needed.

The Report was accomplished through an interdisciplinary process involving Forest Service resource specialists and a good deal of participation from our partners. We have relied on the efforts of other forms of government, academic researchers, private citizens, and non-profit organizations to complete some of the monitoring. We are grateful to these people who have donated their time and energy by actively participating in the management of the CNNF.

II. MINIMUM LEGALLY REQUIRED MONITORING

Minimum monitoring and evaluation requirements have been established through the NFMA at 36 CFR 219. The following legally required monitoring tasks were accomplished during FY 2006:

Lands are adequately restocked (36 CFR 219.12(k)5(i))

During FY 2006, the CNNF certified the adequate restocking of trees for 5,684 acres of land (Table 1). An additional 153 acres of land did not meet certification standards during this

time (Table 2) due to the environmental factors that typically exert a minor influence stocking success. These acres are planned for restocking during the next three to five years. The success of restocking efforts will be determined through monitoring regeneration during the 3rd and 5th years after planting. If necessary, stands lacking adequate regeneration may receive fill-in planting to ensure adequate reforestation. During FY 2006, 97% of the treated lands were certified on schedule. Less than 0.5% will require additional treatment beyond the five year period to become certified. All non-certified acreage has additional stocking scheduled to meet certification in the next year or two.

Table 1. Acres of land certified on the CNNF during FY 2006 by Ranger District: Meford-Park Falls (MPF), Great Divide (GD), Washburn (WASH), Eagle River-Florence (ERFL), and Lakewood-Laona (LKLN).

Method	MPF	GD	WASH	ERFL	LKLN	TOTAL
Natural Regeneration w/ Site Preparation	203	100	1,522	181	1,658	3,664
Natural Regeneration w/o Site Preparation	211	366	109	193	268	1,147
Planted	0	0	857	181	0	1,038
Seeded	0	0	15	0	0	15
Total	414	466	2,503	555	1,926	5,864

Table 2. Acres of land not certified on the CNNF during 3rd and 5th year surveys in FY 2006.

Survey Type	MPF	GD	WASH	ERFL	LKLN	TOTAL
3 rd Year	0	0	56	22	47	125
5 th Year	0	6	22	0	0	28
Total	0	6	78	22	47	153

Lands not suited for timber production (36 CFR 219.12(k)5(ii))

To determine if lands are suited for timber production, an assessment is required during each forest planning cycle. A comprehensive analysis of land suitability for the entire CNNF was last formally reported as the baseline condition in the Forest Plan. However, since conditions sometimes change, and assessing those changes is an enormous task, we continually update our baseline so that the next Forest Plan can be based on the most current information possible. During FY 2006, 40,350 acres were assessed for timber production (Table 3).

The most common reasons lands may be considered not suitable for timber production are if they: a) are designated or candidate Research Natural Areas, Wild/Scenic/Recreation River corridors, or Wilderness; b) have soils that are not appropriate for timber production; c) are existing recreation sites; d) are not cost-efficient for timber production; or e) are open lands that do not contain timber.

Table 3. Acreages of land arranged by land suitability class (LSC) and Ranger District as determined from surveys during FY 2006

LSC	MPF	GD	WASH	ERFL	LKLN	TOTAL
200	88	0	230	4	0	322
300	0	0	0	0	0	0
500	6,891	4,172	6,063	10,679	10,487	38,292
710	0	0	0	21	0	21
720	0	0	0	0	10	10
801	0	27	0	0	0	27
807	0	0	0	0	8	8
808	0	0	0	844	0	844
810	0		0	0	141	141
820	0	0	77	0	0	77
830	7	6	0	0	0	13
840	0	25	10	0	16	51
uncoded	246	2	213	75	8	544
Total	7,232	4,232	6,593	11,623	10,670	40,350

LSC 200 = non-forested land

LSC 300 = lands withdrawn by Congress (wilderness, RNAs, etc)

LSC 500 = suited forestlands

LSC 710/720 = physically unsuitable (slopes, seeps, etc)

LSC 801 = areas set aside for T/E species habitat

LSC 807 = old growth areas

LSC 808 = wild, scenic or recreation (or candidate) corridor

LSC 810 = campgrounds, seed orchard, archeological sites

LSC 820 = not cost efficient

LSC 830 = not appropriate (high transportation costs)

LSC 840 = not appropriate (low site index)

Maximum opening from even-aged management (36 CFR 219.12(k)5(iii))

Forest Plan guidelines state that temporary openings from even-aged management will not exceed 40 acres (exceptions are listed below). The NFMA requires Forests to monitor such harvest area size limits to determine whether they should be continued. On the CNNF, there are two forms of even-aged management employed to create temporary openings: clear-cutting and overstory removal. Because of the productive soils and relative abundance of pioneer species on the landscape, openings caused by even-aged management are quickly reforested. The temporary openings are defined in the Forest Plan as stands with an average crown closure less than 20% or regeneration of less than 12 feet tall. Temporary openings may exceed 40 acres:

- within Management Areas 4C and 8C;
- as a result of natural catastrophic occurrences such as fire, insect and disease attack, or wind storm;

- to benefit Connecticut warbler habitat within jack pine areas.

During FY 2006, temporary openings resulting from even-aged treatments totaled 88 (Table 4). In 31 instances, adjacent stands were managed with an even-aged treatment. Since this scenario creates one larger opening, this analysis dissolved the stand boundary between the two areas and combined the acreage.

Table 4. Openings created by even-aged management since the Forest Plan during FY 2006.

Method	Treatments	Range (acres)	Size (acres)
Clear cut	30	3 - 40	20.2
Overstory removal	7	5 - 39	18.9
Salvage mortality*	51	5 - 75	26.2
Total	88	5- 75	23.6

*These salvage treatments meet the criteria for exceeding the 40 acre temporary opening limit.

Control of destructive insects and disease (36 CFR 219.12(k)5(iv))

Efforts to control destructive insects and disease during FY 2006 focused on a variety of threats to forest health, including: gypsy moths, oak wilt, spruce decline, and two-lined chestnut borer. Additionally, an aggressive public awareness campaign began during FY 2006 to prevent an infestation by the emerald ash borer. This beetle has yet to be found in the state of Wisconsin, but has devastated ash tree populations in the Chicago area and in lower Michigan.

A Gypsy Moth Slow-the-Spread program was again active during FY 2006, treating 4,420 acres on the Washburn district. The project, which was evaluated in the 2006 Gypsy Moth Control – Slow the Spread Environmental Assessment (EA), broadcasted pheromone flakes over areas infested with gypsy moths. These flakes contain a synthetic pheromone that confuses male gypsy moths so they cannot find females. They eventually die without mating. The pheromone is only detected by gypsy moths, and no other species are affected.

Oak wilt was discovered at 35 sites within the Lakewood-Laona District during FY 2006. In order to combat this disease, it was necessary to remove and dispose of 3,679 trees. Monitoring stands for oak wilt will continue in FY 2007.

Spruce Decline is the name given to a condition that rapidly kills trees—particularly upland white spruce—on thousands of acres on the CNNF. The exact cause of Spruce Decline is not known, though it is probably the combination of several factors that include extended droughts, spruce budworm infestation, fungal spruce needle cast infection, and *Armillaria* root disease. Although it is not known whether removal of infected trees will suppress the spread of Spruce Decline, removing dead and dying trees does reduce wildland fire risk and salvages some economic value from the wood products. The proper reforestation of these lands will restore a healthier, more sustainable ecosystem, with particular consideration

being given to spruce grouse and its habitat requirements. Overall, 923 acres (29 stands) of upland white spruce were salvaged in the Lakewood-Laona District, and 224 acres (11 stands) were salvaged on the Medford-Park Falls District during FY 2006 under the Spruce Decline I EA. The Spruce Decline I decision recognized a total of 8,778 acres of impacted spruce. Of this total, 1,167 acres (13.2%) were reserved to contribute coarse woody debris to the landscape and to follow Forest Plan guidelines for timber salvage (Forest Plan, pg. 2-5). By continuing to monitor spruce stands throughout the CNNF, new sites in need of treatment were discovered and analyzed in the Spruce Decline II EA, which was signed in 2006.

Two-lined chestnut borer is a native beetle that opportunistically attacks stressed oak trees. Typically, two-lined chestnut borer invade naturally low-vigor trees, but when otherwise healthy trees are stressed (by drought, root damage, defoliation, etc.), the beetle can attack the entire tree. During FY 2006, 96 acres (12 stands) of dead and dying oak that had been infected by two-lined chestnut borer was salvaged on the Washburn District.

Population Trends of the seven Management Indicator Species in relation to habitat changes (36 CFR 219.19(a)(6))

The Forest Plan designated seven species as Management Indicator Species (MIS). The population trends of MIS are theorized to reflect changes in their environment. Therefore, as managers of the forest, our purpose of monitoring MIS is to understand the implications of our management activities on their populations. They are, in a sense, serving the same purpose as the proverbial “canary in the coal mine.” Monitoring shows that the MIS populations range from steady to very robust, with the exception of Canada yew, which appears to be jeopardized by factors unrelated to forest management (see “Canada Yew”, page 20).

Gray Wolf

During FY 2006, the CNNF continued to follow the “Recovery Plan for The Eastern Timber Wolf”. As a designated member of the recovery team, the CNNF collaborated with the Wisconsin Department of Natural Resources (WDNR) - Bureau of Endangered Resources (BER) and the US Fish and Wildlife Service (USFWS) to conduct annual monitoring of the status and distribution of the species on the CNNF per Task # 211 of the recovery plan.

Monitoring of this species included use of radio telemetry, aerial surveys, snow tracking, howling, live trapping and recovery of dead wolves across the Planning area. During the monitoring period, approximately 30+ packs containing more than 100 individuals, and several individual wolves were monitored for survival and reproduction, territorial persistence across the CNNF. Aerial tracking of marked wolves was conducted on a weekly basis by WDNR-BER using funding from the CNNF. Radio locations were provided to the CNNF for geospatial analysis and delivery into the NRIS Fauna corporate data management model. In addition, at least 3 winter snow tracking surveys, 3 howling surveys and one month of live trapping was conducted to document breeding, and reproductive success. Radio marking of selected wolf packs occurred where additional information was desired.

As noted in the FY 2005 Monitoring Report, the Forest continues to sustain wolves well above the 2 pack- 20 wolves goals set forth in the federal recovery plan. The majority of these packs continued to occupy the Chequamegon portion of the Forest. Gray wolves were found in the highest densities on Great Divide, Medford/Park Falls and Washburn Districts (Figure 1). Wolves continue to attempt colonization of the Nicolet Land base with approximately 5 packs and numerous individual animals being present. Overall, the population of gray wolves in Wisconsin continued to expand with an estimated 2005- 2006 over winter populations of 462 to 502 (Figure 2).

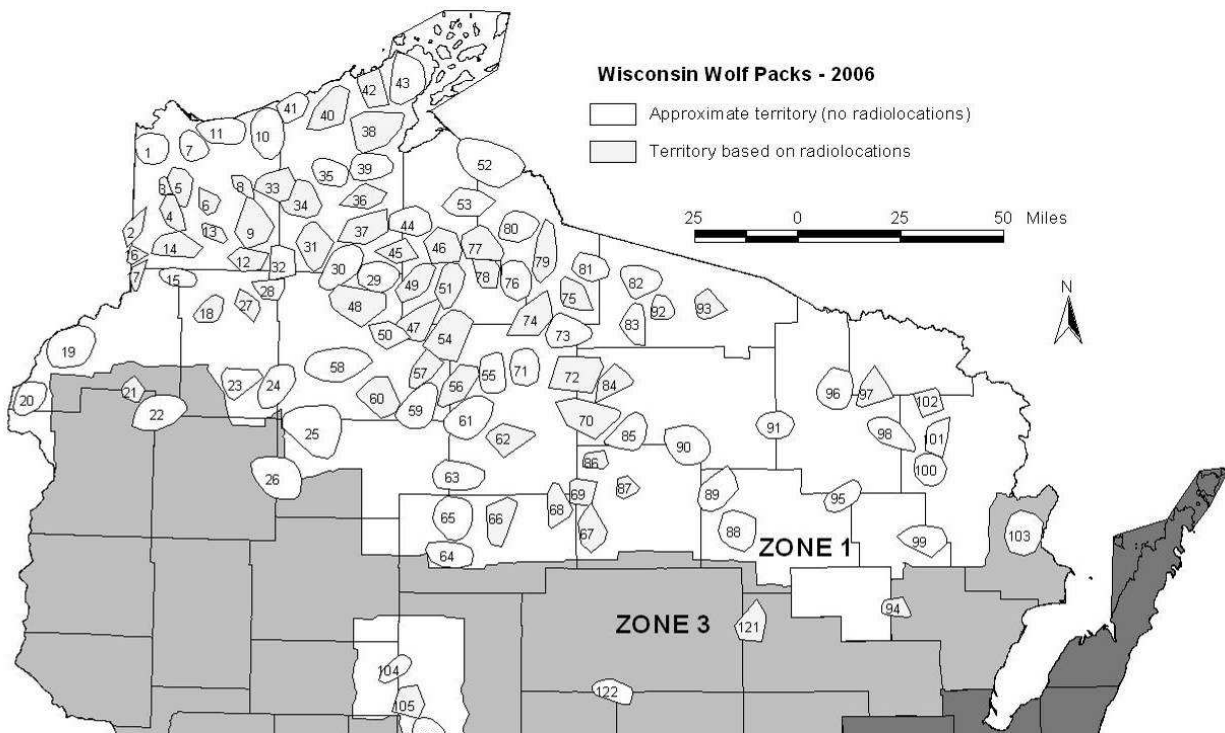


Figure 1. Distribution of wolf territories in Wisconsin in 2006 (Source: Wydeven et al. 2006)



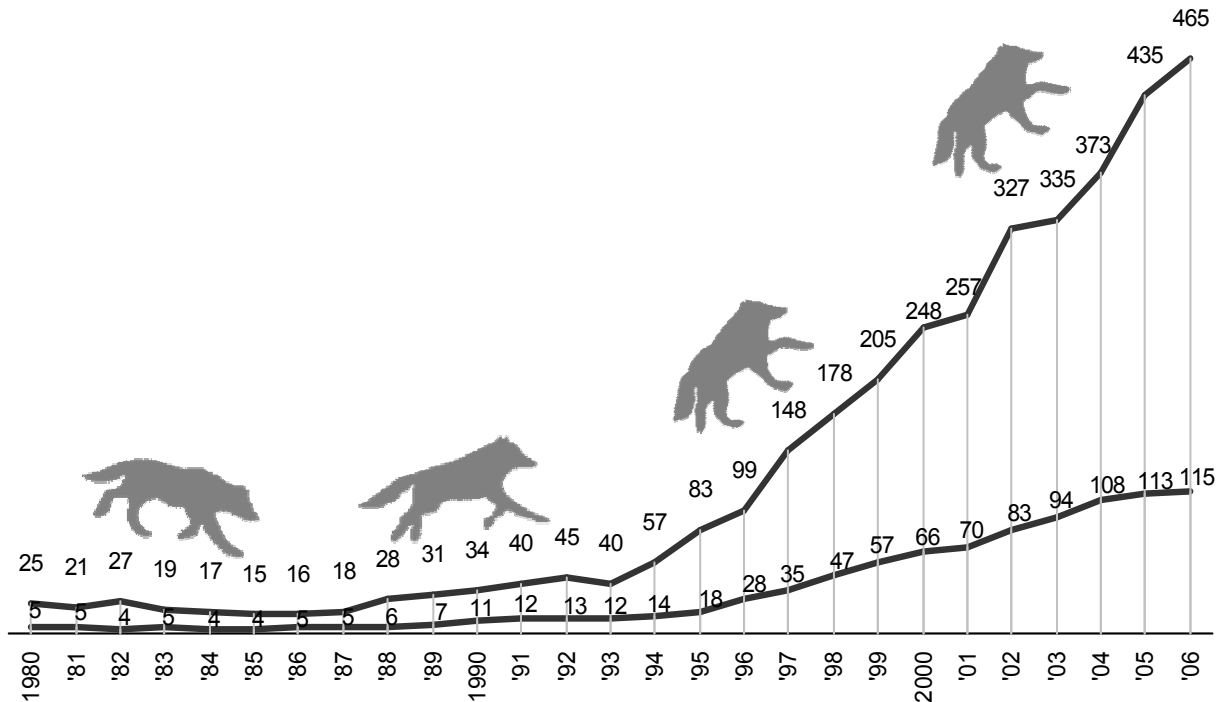


Figure 2. Gray Wolf population changes in Wisconsin (1980-2006). Source: Wydeven et al. 2006)

Bald Eagle

Again in 2006, the CNNF participated in the monitoring of the recovery of the Bald Eagle across the Forest as part of meeting the Northern Bald Eagle federal recovery plan item 1.111. Monitoring was conducted in collaboration with the WDNR-BER and the USFWS. Aerial surveys were used across the state and the CNNF to determine presence, occupancy and reproductive success of located nests.

In 2006, on the Chequamegon portion of the Forest, 41 nesting territories were aerial surveyed for occupancy with 32 nests active and containing 43 young. Numbers were similar on the Nicolet portion of the CNNF with approximately 41 territories surveyed in Oconto, Forest and Florence counties, of which approximately 35 were active. The Forest continues to meet its 60 pair recovery goal as set forth in the 1986 Chequamegon and Nicolet Forest Plans, meeting this goal each year from 1997 to present.

Statewide the bald eagle population continues to increase with an estimated 1,065 nesting eagles in 2006 (Figure 3). Conservation measures to protect this species remain a part of the CNNF 2004 revised "Land and Resource Management Plan". In accordance with specified standards and guidelines, no vegetation treatment occurred during 2006 within ¼

mile of known eagle nests. Delisting is expected by the USFWS in 2007 due to continued improvement in the species population status.

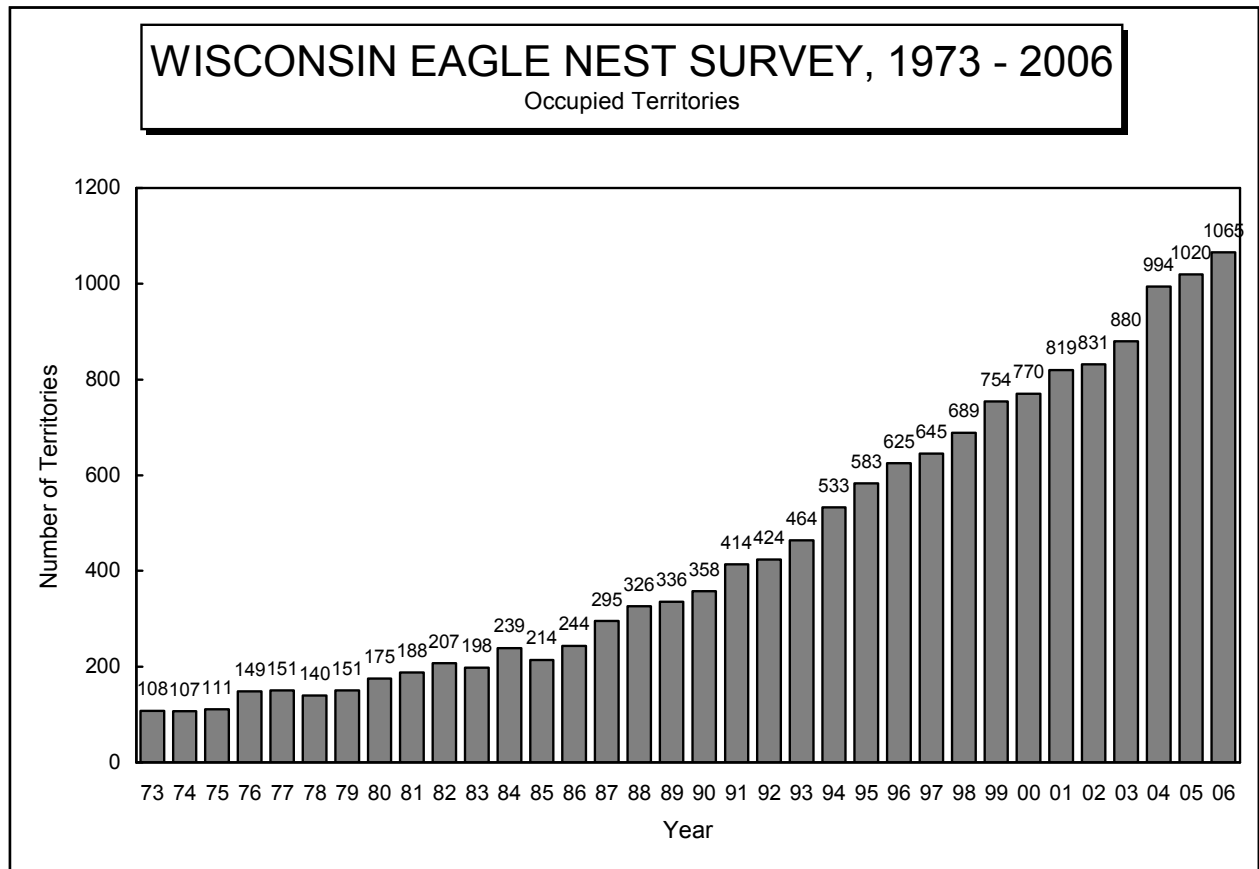


Figure 3. Number of occupied bald eagle territories in Wisconsin 1973-2007. Source: WDNR 2007.

Northern Goshawk

Nesting surveys for northern goshawk were conducted in FY 2006 on the Nicolet land base (Figure 4). A total of 57 historic northern goshawk territories were visited, and one new territory was discovered. There were 13 active nests identified, eight of which successfully fledged offspring—a 62% success rate. From these eight nests, a total of 13 young fledged (five male, four female, four unknown), not including one that was taken with a permit for falconry. Mean mass, which generally reflects how well a bird is eating, was 984 grams for nesting females and 772 grams for males, and represents a decline from previous years (Erdman 2005). Historical northern goshawk nests were occupied in FY 2005 by a suite of other birds, including great horned owl, barred owl, red shoulder hawk, and broad-winged hawk.

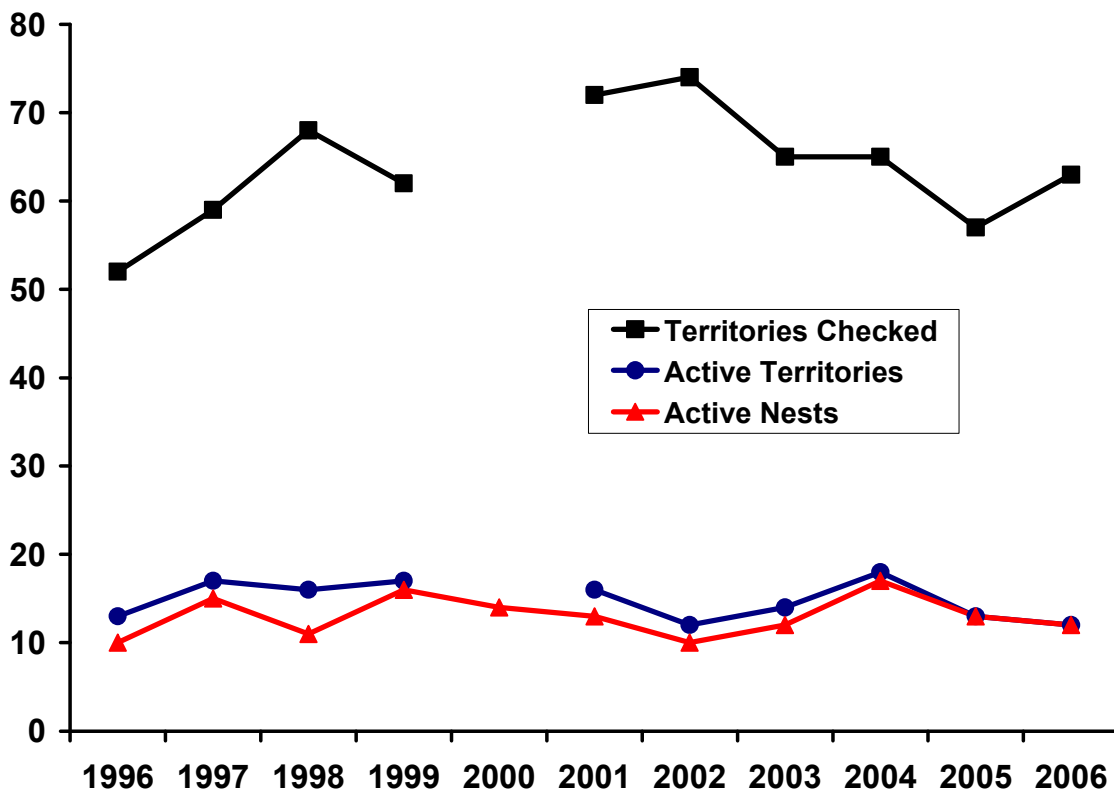


Figure 4. Number of northern goshawk territories and nests on the Nicolet land base during 1996-2006.

Historically, the Chequamegon land base hosts far fewer nesting northern goshawks than the Nicolet land base. As a result, surveys for active territories (i.e., a male is observed defending a territory in an attempt to attract a mate) are formally conducted every other year, and FY 2006 was one of those years. Of the 16 territories monitored during 2006 (Figure 5), thirteen were active and ten of those had active nests (i.e., eggs were produced). Of the ten active nests, five were successful in fledging nine young.



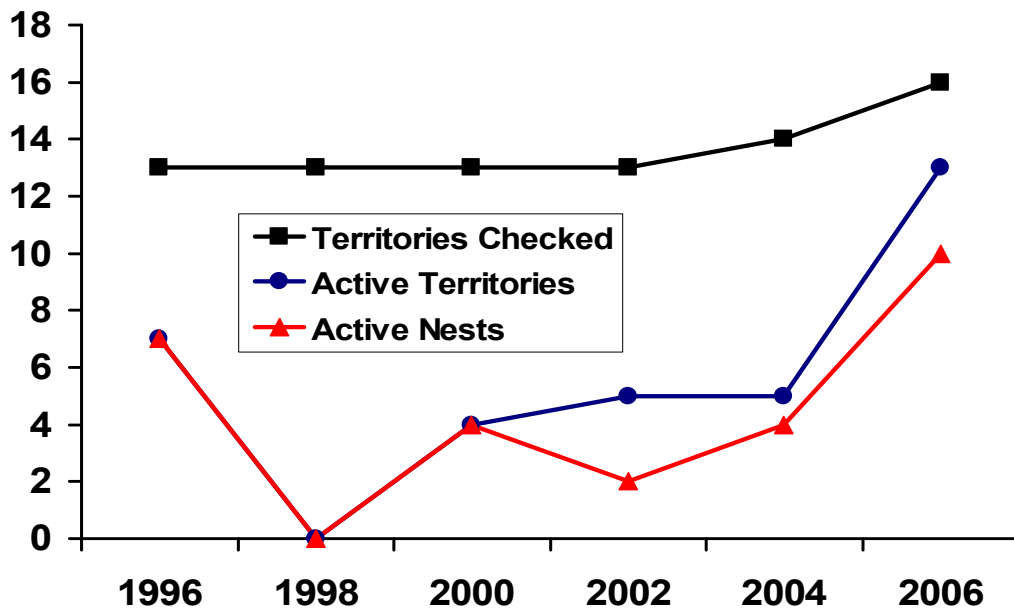


Figure 5. Number of northern goshawk territories and nests on the Chequamegon land base during 1996-2006. Note: surveys were conducted every other year.

Red Shouldered Hawk



Two young red-shouldered hawks in a nest near Crooked Lake. (J. Jacobs)

Nesting surveys for red-shouldered hawk were conducted on the Nicolet land base during April and May of 2006 (Table 5). A total of 68 of the 88 known red-shouldered hawk nest sites were searched for activity; one of the 68 nests was newly discovered this year. Of the 21 nests active, ten were successful. This success rate (48%) is one of the higher observed on the Nicolet land base during the last decade. Twenty young fledged from the ten nests, which also represent one of the better years of the last decade. Since 1992, the number of young per active nest on the Nicolet land base has averaged 0.87, which is a little less than the number observed in 2006 (0.95). The production

rates on the Nicolet land base appear to be highly variable, as they are in the rest of the state of Wisconsin (Jacobs 2006). Perhaps future monitoring will reveal if there is a pattern or proper explanation for the variability.

Table 5. Red-shouldered hawk nesting productivity on the Nicolet land base (1997-2006).

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Territories Checked	68	64	54	57	53	57	61	58	66	68
Previously active sites	66	63	52	57	53	57	59	58	57	67
New sites	2	0	2	0	0	0	2	0	9	1
Old nests found	76	64	58	60	-	-	-	-	-	-
Occupied Sites	27	18	26	25	19	20	31	28	40	31
Active Nests	19	14	21	18	14	19	20	19	23	21
Successful Nests	11	6	10	7	7	8	6	7	5	10
% Successful Nests	58	43	48	39	50	42	30	37	22	48
# of young at banding	24	10	24	13	16	18	12	15	10	20
yg/active nest	1.26	0.71	1.14	0.72	1.14	0.95	0.6	0.79	0.43	0.95
yg/successful nest	2.18	1.67	2.4	1.86	2.29	2.25	2.0	2.14	2.0	2.0

American Marten

The CNNF has partnered with WDNR and the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) for surveys and research of American marten (marten) on CNNF lands. Marten (known as “waabizheshi” in Ojibwe) was listed in Wisconsin as a state endangered species in 1972 and efforts have been made to restore the population since then. The state designated marten recovery areas (MRA's) on the Great Divide and Eagle River-Florence districts in an effort to provide portions of the state where special management would occur for the species, and survey efforts often focus on these areas.

Based on the information provided to the CNNF by the WDNR (Wydeven et al. 2006b), survey effort for marten focused on the Eagle River-Florence district, and detected a total of twelve marten along 117.4 of miles surveyed routes. Ten of those marten were detected along 3 routes in the MRA, covering 79.0 miles, or a rate of 12.7 marten per 100 miles. Detection rate along the 38.4 miles driven outside the MRA (but still on the Eagle River-Florence district) was 5.2 per 100 miles. All of the marten detected outside of the MRA were found on a 6.7 mile route that was located directly north of the MRA. Within the MRA, marten rate of detection was about half the rate observed in recent years. Ratio of fisher detection to marten was 3:1 in the MRA. Detection rates for fisher, coyote, and bobcat in the Nicolet were lower than recent years.

Ongoing research on marten continued by GLIFWC and the Forest Service on marten ecology in portions of the MRA on the Great Divide district (Gilbert et al. 2003). No surveys were conducted by the WDNR on the Great Divide district; however, marten were detected at 3 locations on the Great Divide district during other WDNR carnivore surveys.

In winter 2005-2006, GLIFWC, CNNF, WDNR and Michigan State University cooperated in a second year study of marten hair snares to test for marten presence using DNA analysis across extensive areas of northern Wisconsin, including the CNNF (Williams and Scribner 2006). Along 22 transects sampled, marten DNA was found along 2 routes within known marten range.

Brook Trout

Brook trout are not tolerant of turbid or warm water conditions. Optimal water temperature for brook trout survival is below 22 degrees C (approximately 72 degrees F). As a result, the presence of brook trout in a stream indicates they have access to clear and cold water throughout the year. During the mid 1990's, a forestwide water temperature monitoring program was developed to help identify those trout streams that have undesirably high temperatures, which in turn has helped prioritize instream habitat improvement work. This information has also been used to help refine the group of streams within the beaver management program.

The CNNF partners with WDNR for brook trout population surveys on CNNF lands. During FY 2006, WDNR established 6 sampling stations on three different stream systems on the Forest. Sampling stations varied from 700-2,000 feet in distance, and all brook trout were collected, measured and returned to the stream. Results from these surveys are used to estimate population abundance, and are added to the historical database. According to these records, brook trout populations on the CNNF have remained stable over the last decade. One major factor in the stable population is believed to be the beaver management program, resulting in fewer beaver dams. Beaver dams result in higher water temperatures, barriers to fish movement, decreased oxygen levels, and other factors that negatively affect brook trout habitat. Perhaps equally as important to the stability of brook trout populations has been the stream restoration work that will also continue for years to come.

Canada Yew

Research published during 2006 indicates that Canada yew has decreased on the CNNF over the past 53 years (Bushman 2006). Out of the 34 cedar swamps surveyed in this study, 12 swamps had yew in 1952 while only 4 had yew in 2005. Out of a total of 680 quadrats surveyed (20 quadrats in each cedar swamp), 51 quadrats had yew in 1952 and 28 quadrats had yew in 2005. Herbivore browsing is widely believed to be a primary threat to Canada yew survival and production, and it may be that deer, in particular, are affecting the amount of yew found in northern Wisconsin (Rooney et al. 2000, Rooney et al. 2002). For example, one half of the sites that had yew in the 2005 survey were located on tribal lands (Menominee and Lac du Flambeau) where hunting deer is allowed year round, and assumed to have a greater impact on the population (Rooney et al. 2002); Canada yew was

common at both of these sites. Yew was uncommon at the two other sites on the CNNF where it was present in 2005.

On the Lac du Flambeau Indian Reservation, yew beds in flat hemlock-hardwood forest are relatively common except in areas that have experienced significant burns. Most of the sites are on north shores of large lakes where fires may have been less common historically.

There are very few recorded populations on the Great Divide District except for the east half of the Penokee Range. In the most recently surveyed areas no Canada yew was detected. Some yew discovered near the proposed St. Peters Dome Snowmobile trail reroute was small and damaged from being browsed by deer. Although a few scattered, severely browsed individual plants have been found, populations in the Brunswelier Gorge, Springbrook Falls and Cliffs, Morgan Creek Gorge, remain intact.

Nearly 60 points were recorded in the Diamond Roof area of the Lakewood-Laona district, but most of them were the typical small browsed individuals. Surveys on the Eagle-River Florence District detected 32 Canada yew sites within the Long Rail Project area. Twenty-two of these are within stands proposed for harvest, including one clearcut. Mitigation measures include 10- to 25-foot buffers around patches harboring more than three individual stems. The long-term persistence of these plants will be closely monitored.

The population trend on the eastern side of the CNNF is thought to be stable at this time. However, if the region continues to get relatively snow-free winters, plants will not be covered by a blanket of snow, which protects them from adverse weather and the potential for browsing by herbivores such as deer.

Regenerating Aspen Forest

Regenerating aspen is a community that indicates suitable habitat conditions for a number of song birds, game birds and game animals including house wren, chestnut-sided warbler, indigo bunting, white-tailed deer, American woodcock, and ruffed grouse. For the purpose of this report, regenerating aspen forest is defined simply as stands of forest typed as quaking aspen, paper birch, or aspen-white spruce-balsam fir that are also less than 20 years old.

There are currently 71,325 acres of regenerating aspen on the CNNF (Figure 6). Since 1986, there has been a generally declining trend in the regeneration of the aspen community (Figure 7), which is typically created through even-aged management techniques such as clear cut,

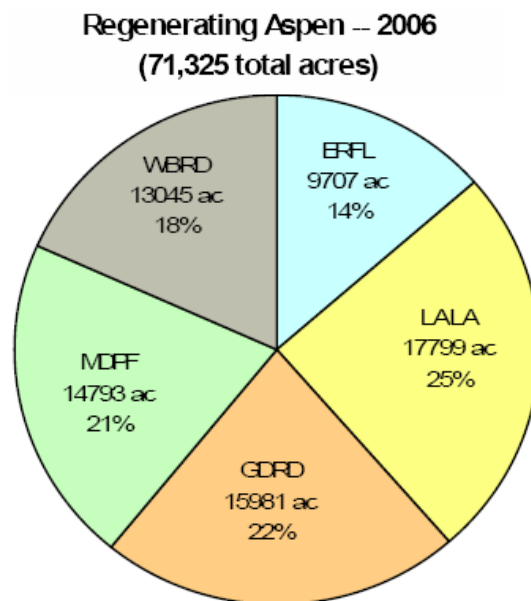


Figure 6. Acres of regenerating aspen on the CNNF by ranger district: Washburn (WBRD), Eagle River-Florence (ERFL), Lakewood-Laona (LALA), Great Divide (GDRD) and Medford-Park Falls (MDPF).

shelterwood, or overstory removal harvests. Regenerating aspen peaked on the CNNF during 1986 at approximately 127,000 acres.

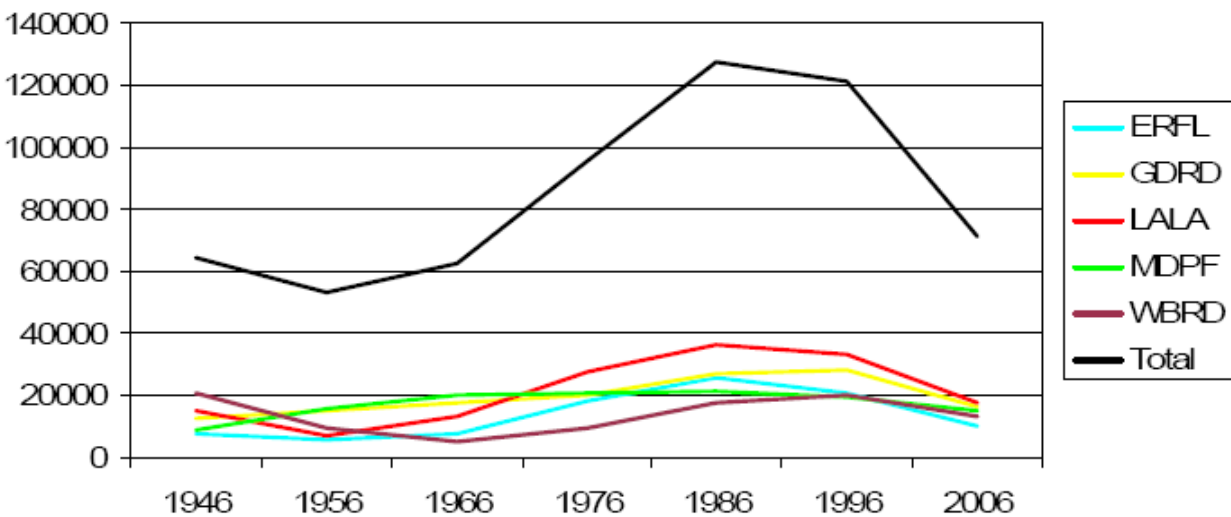


Figure 7. Acres of regenerating aspen (ages 0-19) on the CNNF (total) from 1946-2006. Ranger districts displayed are: Eagle River-Florence (ERFL), Great Divide (GDRD), Lakewood-Laona (LALA), Medford-Park Falls (MDPF) and Washburn (WBRD).

The Forest Plan anticipated a gradual decline in regenerating aspen over decades to a level of 74,400 acres; however, current levels have already achieved that decline. To maintain the desired diversity of forest habitat types, it is recommended that opportunities for aspen regeneration be explored. To achieve the desired age diversity under the foreseeable regeneration scenario, total aspen would need to decrease by more than 50%, most of which would need to happen in the CNNF’s oldest aspen. This could readily happen as most of the aspen is already over-mature, and is expected to naturally convert over the next decade to some other forest type.

Mature Northern Interior Hardwood Forest

Mature northern interior hardwood forest (MINHF) is a habitat that is assumed to indicate suitable conditions for species like black-throated blue warblers, least flycatchers, goshawks, red-shouldered hawks, and American marten. The parameters for this analysis include:

- Forest stands typed as mixed northern hardwoods-hemlock, sugar maple-black cherry, sugar maple-northern red oak, sugar maple-yellow birch, sugar maple-basswood, black cherry-white ash/yellow poplar, red maple, sugar maple, beech, and mixed hardwoods that are greater than 80 years old
- Other forest types (including lakes) greater than 5 acres do break up patches
- Stand boundaries do not break up patches
- Non-CNNF lands do break up patches (regardless of actual forest type)
- Service level roads 3, 4, and 5 do break up patches

- All edges are buffered by 90m

The CNNF has a total of approximately 81,000 acres of MNIHF (Figure 8). Overall, this represents a significant increase of 400% since 2002. However, this increase was anticipated during the Forest Planning process due to the fact that the many hardwood stands—indeed most of the CNNF—was on the cusp of turning 80 years old. As a result, this anticipated increase places the CNNF on the right path to reach the levels (140,000 acres) of MNIHF projected in the Forest Plan within 100 years. For more information on MNIHF on the CNNF, please see Quinn and Lopez 2006a.

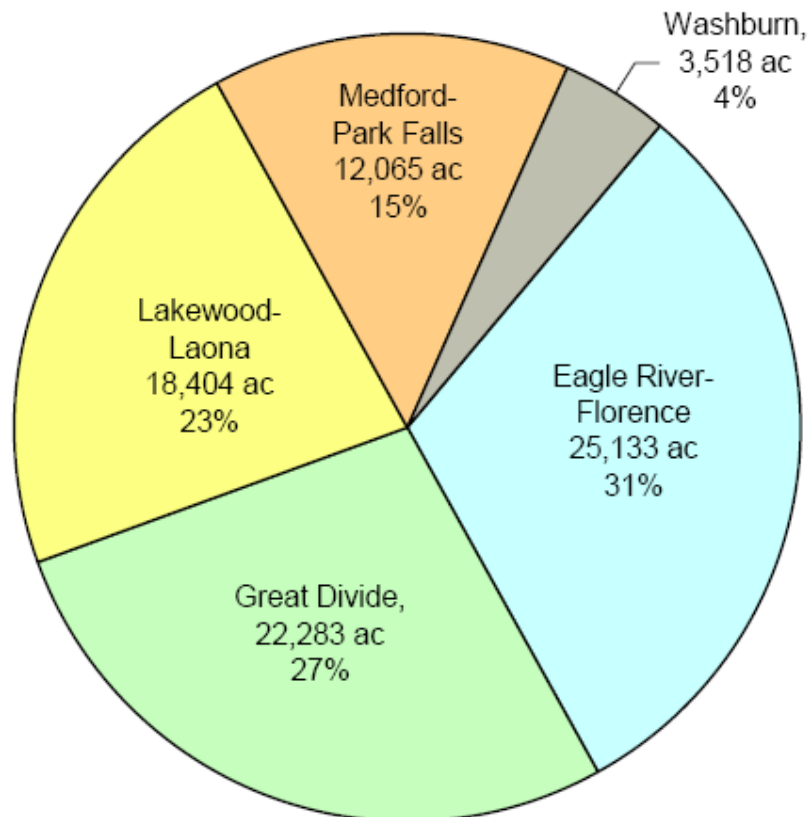


Figure 8. Totals of MNIHF on the CNNF during FY 2006 divided by ranger district.

Mature Natural Red and White Pine Forest

Mature natural red and white pine forest (MNRWPF) indicates suitable conditions for a number of song birds including pine warbler, Blackburnian warbler, and red-breasted nuthatch. For the purposes of this analysis, MNRWPF was defined as stands dominated by either red or white pine, of natural origin (i.e., not plantations), and at least 70 years old.

Currently there are 131,527 acres of red and white pine dominated stands on the CNNF, with a sharply increasing trend in the next 15 years (Figure 9). Tens of thousands of acres of land were planted to red and white pine during the 1940's and 1950's. Although these trees will contribute to the abundance of mature red and white pine, these stands are not of natural origin. It wasn't until roughly 30 years ago that silvicultural efforts focused on regenerating natural red and white pine. Therefore, it will be approximately 40 years until

the CNNF witnesses an increase in MNRWPF. Currently, about 28% (36,894 acres) of the red and white pine acreage meets the definition of mature, and approximately 60% of the mature red and white pine (22,423 acres) is considered of natural origin. Because red and white pine stands on the CNNF are managed on 100-200 year rotations, MNRWPF is expected to remain at this level until 2021 (barring natural disasters). Over time the majority of the CNNF's pine stands will enter and be sustained in a mature condition. A complete analysis and discussion can be found in Quinn and Lopez 2006b.

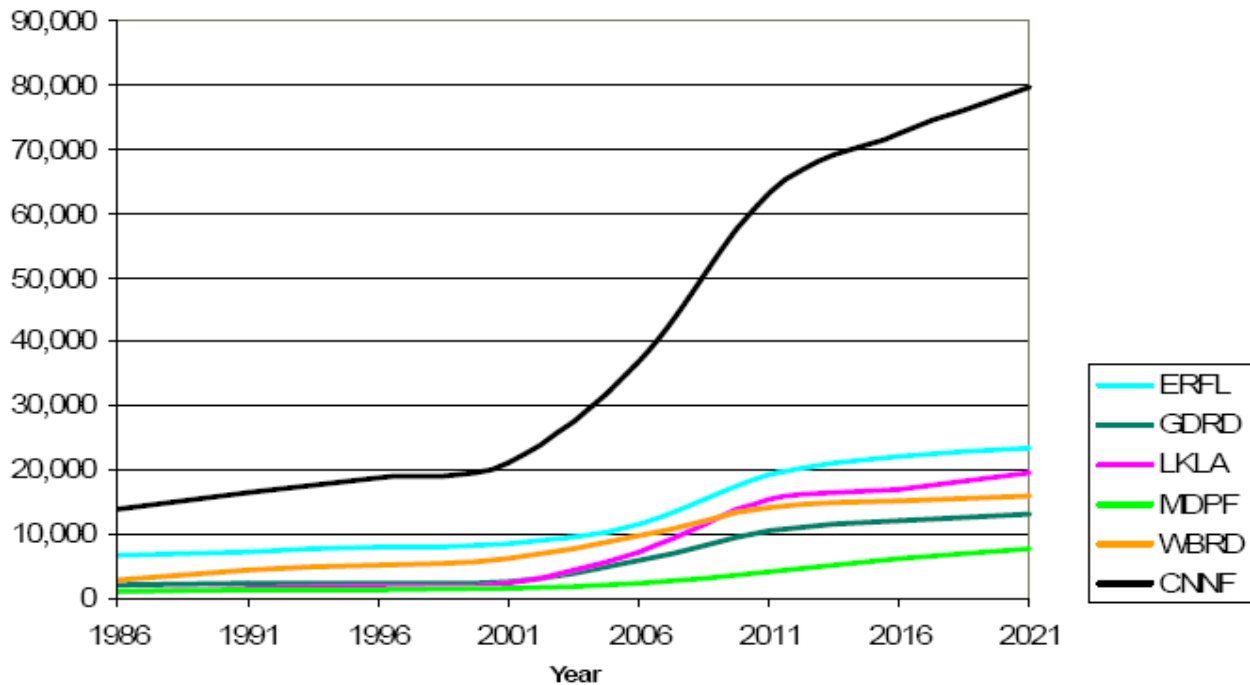


Figure 9. Acres of mature red and white pine forest on the CNNF since 1986 and projected until 2021. Ranger districts are also represented: Eagle River-Florence (ERFL), Great Divide (GDRD), Lakewood-Laona (LALA), Medford-Park Falls (MDPF) and Washburn (WBRD).

Effects of off-road vehicles (36 CFR 219.21)

Any ground-disturbing activity increases the chance of infestation by non-native invasive species (NNIS) of plants; and many invasive species have seed traits that predispose them for vehicular dispersal (ex., contained within mud attached to the undercarriage). As a result, monitoring invasive plants along off-road vehicle trails becomes essential because recurring traffic provides a vector for long-distance dispersal into forest lands (Rooney 2005). In fact, 100% of the ATV trails on the CNNF are infested with NNIS to some degree, most often where the trail crosses a road used by passenger vehicles (see FY 2005 Monitoring Report), and 82% of all NNIS sites on the CNNF are within 20m of a numbered road. Although surveys are conducted throughout the forest, NNIS (especially, spotted knapweed, reed canary grass, and Canada thistle) occur at the highest frequency along roads.

During 2006, all trail heads on the Great Divide district were surveyed for NNIS. Parking and restroom areas were examined as well as the first ¼ mile from the trail head. For each site surveyed, botanists compared the size of each observed infestation to the size of the last known record, if one existed. In all, eleven NNIS were observed on ATV trails on the Great Divide district. Spotted knapweed (*Centuarea biebersteinee*) was by far the most common NNIS species associated with the ATV trails (53 separate occurrences), and it is also the most common on the CNNF (approximately 560 known locations). Other NNIS commonly observed along ATV trails include reed canary grass (*Phalaroides arundinacea* (L.) *Raeusch.*), honeysuckles (*Lonicera* sp.), Canada thistle (*Cirsium arvense*) and bull thistle (*Cirsium vulgare*).

An NNIS we are monitoring closely is marsh thistle, which so far only occurs on the Nicolet side of the CNNF where there are no ATV trails yet. Marsh thistle is most commonly found on roadsides so there is potential that an increase in ATV use on the eastern side of the forest will increase the occurrences of this thistle where trails cross roads.

Given the Forest's commitment to combating NNIS, it is recommended that ATV trailheads, trails, and routes continue to be monitored for NNIS forest-wide. Additionally, any new routes that are designated should be inventoried for NNIS before opening to ATV's so that a baseline condition can be established. This is a necessary activity to understand the effects of off-road vehicles on the forest.

Effects to lands and communities adjacent to or near national forest and effects to the Forest from land managed by government entities (36 CFR 219.7(f))

Since 1908, the U.S. Forest Service has had the statutory authority (16 U.S.C. 500) to distribute twenty five percent of gross receipts generated on National Forest lands during the fiscal year. Sometimes referred to as the "Twenty Five Percent Fund," the monies are distributed to the state, through the counties where National Forest lands reside, and then to the townships.

An alternative option for calculating funds to counties (again, through the state) was established through the Secure Rural Schools and Community Self-Determination Act of 2000 (SRSCSDA). The amount of the payment is based on the average of the highest three years of payments counties have received from the Twenty Five Percent Fund from 1986 to 1999. The counties are guaranteed to receive 85% of the payment, which is also adjusted yearly for inflation. Out of the 11 counties on the CNNF, four are receiving payments under the SRSCSDA, and the other seven receive their payments under the Twenty Five Percent Fund.

Sources of funds reported for revenue sharing are: timber, grazing, land use, recreation special uses, power, minerals, recreation user fees and certain local special revenue sources. For the CNNF, timber is the primary revenue source. Revenues paid out to the state of Wisconsin for distribution to local counties during FY 2006 totaled \$1,924,915, representing a 1% increase over last year, and the third highest total ever (Figure 10). The primary explanation for this total was the value of products sold was higher than in the past.

CNNF Payment to the State

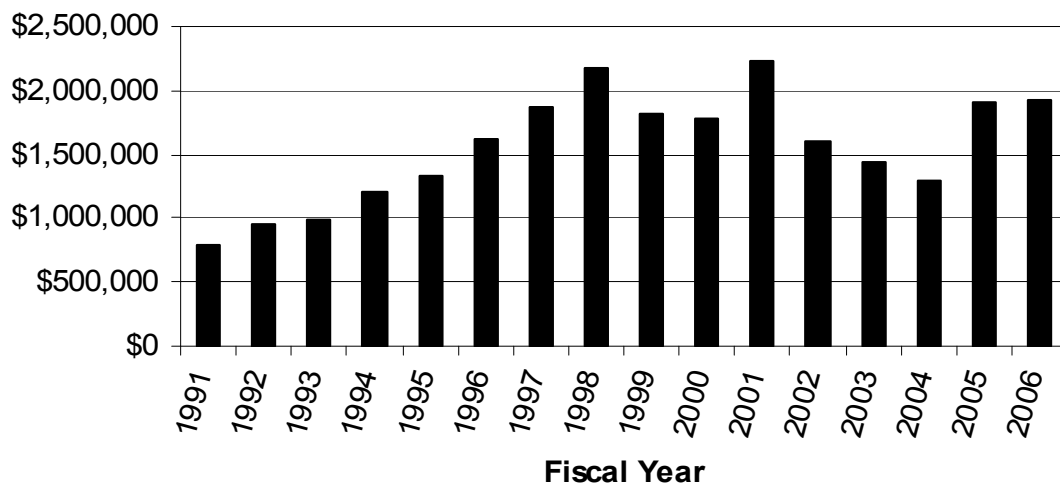


Figure 10. Total revenues paid to the state of Wisconsin during the fiscal years 1991-2006 by the CNNF.

Comparison of projected and actual outputs and services (36 CFR 219.12(k)(1))

The vegetation of the CNNF is managed in a variety of ways for a variety of purposes. Table 6 portrays the silvicultural methods typically used by the CNNF to manage vegetative resources. Although some vegetative treatments were near or greater than the rate projected over the first decade of Forest Plan implementation, the total number of acres treated during FY 2006 was nearly one-half of what was anticipated during the forest planning process.

Table 6. Projected annual rate of vegetative treatment during the first decade of Forest Plan implementation and actual acres treated by treatment type during FY 2006.

Vegetative Treatment	Annual Rate Projected (Acres)	Acres Treated	Percent of Projection Accomplished
Intermediate Cut	7,100	4,510	63.5
Selection	7,530	1,502	19.9
Shelterwood	1,490	973	65.3
Clearcut	3,980	1,936	48.6
Site Prep for Planting	640	727	113.6
Planting/underplanting	1,250	934	74.7
Site Prep – natural regen	4,210	2,747	65.2
Release	1,250	1,192	95.4
Pruning	200	0	0.0
Seedling protection	200	7	3.5
Total	27,850	14,528	52.2

Accordingly, forest-wide timber harvest levels were below those projected for the first decade of the Forest Plan (Table 7), though the softwood sawtimber projections were

exceeded, mostly as a result of the spruce decline epidemic. Markets for softwood sawtimber continue to be good, and the CNNF has softwood sawtimber volume available for sale under the Plantation EIS at Lakewood-Laona and under the Spruce Decline decisions. Other species/product groups were less than projected due to a variety of reasons, including litigation and poor softwood pulpwood markets—particularly red pine.

Table 7. Decade 1 projection and actual wood harvested for the CNNF during FY 2006. All values are reported in millions of board feet (MMBF).

Species/Product Group	Average Harvest Projected	Amount Harvested	Sold Volume
Hardwood sawtimber	8	2	1
Softwood sawtimber	9	10	16
Hardwood pulpwood	53	24	8
Softwood pulpwood	30	30	32
Aspen pulpwood	31	11	10
Total	131	77	67

Comparison of actual and estimated costs (36 CFR 219.12(k)(3))

Table B-8 of the Forest Plan Final Environmental Impact Statement (FEIS) reported projections made during the Forest Planning process for budget requirements of each alternative considered. The projections for the annual cost of the selected alternative (i.e., the current Forest Plan) averaged \$18,186,000 over the life of the Forest Plan. However, since the FEIS was completed, the methods of tracking costs have changed such that the FEIS estimate does not necessarily translate to the current budget divisions. Nevertheless, the intention of this legally required monitoring item—to ensure the estimated costs are in line with actual costs—can still be fulfilled. Estimated costs are made annually before the fiscal year, and during FY 2006 the CNNF operated at 4.8% below budget projections (Table 8).

Table 8. The estimated and actual costs for CNNF program operations during FY 2006. The balance of the two is listed in dollars and percentage.

Program Description	Estimated Costs (\$)	Actual Costs (\$)	Balance (\$)	Balance (%)
Inventory & Monitoring	721,910	683,035	38,875	5.4
Land Management	376,000	355,155	20,845	5.5
Minerals & Geology	350,000	341,432	8,568	2.4
Planning	51,511	48,235	3,276	6.4
Recreation	1,901,029	1,904,456	-3,427	-0.2
Timber	4,366,149	4,246,780	119,369	2.7
Vegetation, Watershed & Air	1,030,317	956,537	73,780	7.2
Wildlife	765,670	753,667	12,003	1.6
Reforestation	287,300	240,489	46,811	16.3
Salvage Sales	1,799,305	1,610,230	189,075	10.5

Timber Pipeline Funds	598,300	575,807	22,493	3.8
Roads & Trails for States	427,080	431,725	-4,645	-1.1
Hazardous Fuels	273,000	201,117	71,883	26.3
Fire Preparation	1,537,765	1,454,337	83,428	5.4
Facilities Maintenance - Recreation	143,478	179,591	-36,113	-25.2
Road Maintenance & Construction	2,379,652	2,329,120	50,532	2.1
Trail Maintenance	233,300	206,378	26,922	11.5
Admin Facilities Maintenance	227,000	207,113	19,887	8.8
Knutsen - Vendenberg Fund	602,502	515,360	87,142	14.5
KV Regional Projects	977,000	747,875	229,125	23.5
Funds from Sale of Lands	127,500	48,417	79,083	62.0
Fee Demo - Rec - Collections	125,000	87,018	37,982	30.4
Fee Demo - Rec - Site Maintenance	640,300	570,391	69,909	10.9
Land and Water Conservation	6,249,140	6,242,523	6,617	0.1
Total	26,190,208	24,936,788	1,253,420	4.8

III. GOAL AND OBJECTIVE MONITORING

For a comprehensive list of monitoring objectives to be conducted throughout the life of the Forest Plan, please refer to Table 4-2 of that document. Monitoring accomplishments for FY 2006 will be reported herein by the corresponding Forest Plan goal. In order to complete an ambitious monitoring schedule during FY 2006, different programs integrated and relied heavily on our cooperators to accomplish activities for selected goals described in the Forest Plan.

Goal 1 – Ensure Sustainable Ecosystem

1.1 – Threatened, Endangered & Sensitive Species

Objective 1.1a: Under the Endangered Species Act, implement established recovery or conservation strategies.

The threatened, endangered and sensitive species (TES) of the CNNF are monitored annually. In addition to these monitoring efforts, affects to habitat are evaluated during the process of conducting National Environmental Policy Act (NEPA) analysis of any proposed federal action. During this process proposed actions are evaluated and mitigation measures outlined in federal recovery plans are implemented to ensure continued recovery of the species. In 2006, more than 100 actions required evaluation for these TES species, and none was determined to be detrimental to their recovery.

Canada Lynx

Although this species and its habitat are not considered to be present on the CNNF, the Forest regularly responds to sightings reported by citizens or other resource agencies. Canada Lynx populations exist in northern Minnesota and have potential to exist in the

Upper Peninsula of Michigan. In recent years, lynx have moved into Minnesota as the population cycles of their prey in Ontario has reached a low. Therefore, it is possible that transient lynx may occasionally appear in northern Wisconsin and the CNNF. However, the USFWS considers these to be transient animals and not a resident reproducing population (Letter from Janet Smith, State Supervisor- USFWS Ecological Services to Anne Archie, Forest Supervisor CNNF). Additionally, the CNNF was not designated as critical habitat for this species due to a lack of suitable habitat (USFWS 2003).

Annually, the CNNF receives 1-3 reports of lynx sightings on or directly adjacent to Forest Service lands. To date, none of these reports have been verified. The CNNF will continue to work with the USFWS and WDNR on evaluating possible lynx sightings as they are reported.

Grey Wolf

The implementation of the Grey wolf recovery plan is discussed under the MIS discussion on page 13.

Bald Eagle

The implementation of the bald eagle recovery plan is discussed under the MIS discussion on page 15.

Fassett's Locoweed

This plant exists at two locations on the CNNF—both of which are on the Washburn district. The first is a historic station for the species and continues to be resurveyed for the species annually, in accordance with the item #3 of the Federal Fassett's Locoweed Recovery Plan. No plants have been documented in recent times (last 10 years). However, conditions are maintained in anticipation of repopulation from any dormant seed bed.

The second population is monitored annually (as required in the federal recovery plan) and displays significant fluctuation in abundance and size from year to year depending on the natural hydrologic cycle of the lake. The Forest Plan established 200 foot "no activity buffers" for both populations to comply with direction in the federal recovery plan to protect the habitat conditions for this plant species.



Suitable but unoccupied Fassett's locoweed habitat is surveyed by CNNF botanists annually to detect any new populations of this species. Each year 1- 10 lakes are reviewed for suitability of this species. As of yet, no new stations have been located as part of this annual survey program.

Objective 1.1b: Improve habitat conditions for Regional Forester Sensitive Species (RFSS).

Spruce grouse

Habitat- Reductions in spruce grouse numbers resulting from Euro-American forest removal have been documented across the Great Lake States of Michigan, Minnesota, and Wisconsin (Gregg et al. 2004). *Spruce Grouse* are dependant upon early succession short needle conifer forests, and the loss of such habitat has been associated with population declines (Robinson 1969, Gregg et al. 2004).

As of 2006, approximately 85,000 acres of suitable habitat within the usable age classes was determined to be present on the CNNF. Through the implementation of the Spruce Decline and the Spruce Decline II projects (which propose harvesting diseased and over mature spruce plantations), an additional 900+ acres of new habitat for this species would be established through reforestation. Partly for this reason, the current trend for spruce grouse habitat is stable to slightly increasing.

Population- Currently there is no population estimate for this species in the state of Wisconsin or on the CNNF. Walter Scott (1943) reviewing the status of the bird in the state noted that the species range was rapidly receding from the loss of habitat due to logging and initiation of homesteading (Gregg et al. 2004). In 1943, Scott projected the range of the species to include all of the CNNF except the Medford Ranger District. Further, Scott estimated a population ranging from 500 to 800 birds statewide.



Since Scott's 1943 estimate, limited surveys for this species have occurred on the CNNF. These limited surveys found 15 birds in 19 survey blocks on the Eagle River-Florence district in the 1990's. WDNR surveys on the Great Divide district in 2005 and 2006 yielded 16 spruce grouse—eleven males and five females. This survey was conducted at 167 points among eleven survey areas, in addition to several less structured surveys walking along roads or trails adjacent to habitat (Figure 11).

The CNNF anticipates additional surveys for this species in 2008 in collaboration with the WDNR to determine presence of the species in other areas of suitable habitat on the CNNF and northern Wisconsin.

In addition to these surveys, the WDNR is using radio telemetry devices to study habitat use and brood survival as part of a partnership effort with the CNNF to better understand spruce grouse biology in northern Wisconsin. Results from this study should be available in 2009.

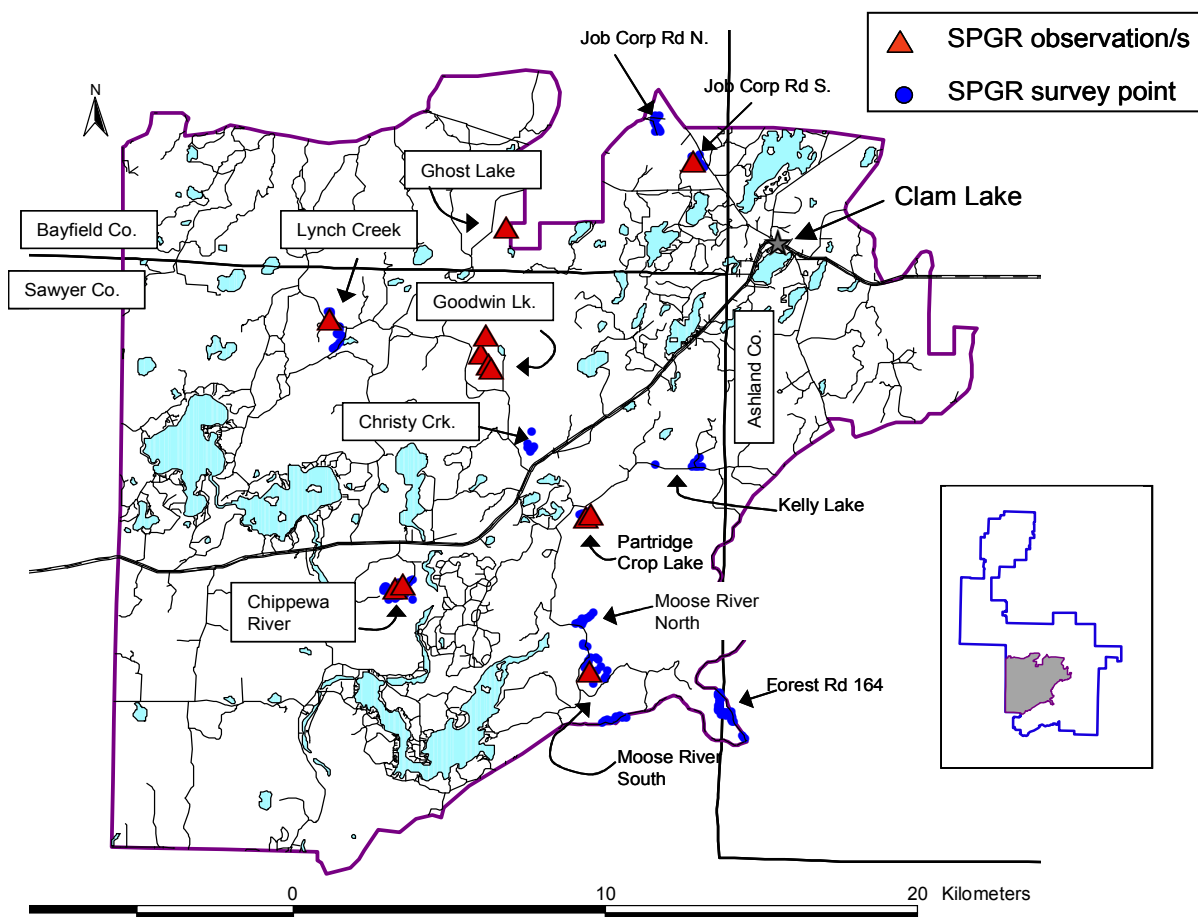


Figure 11. Location of spruce grouse (SPGR) surveys on Great Divide district (WDNR 2006).

Sharp-tailed Grouse

Habitat- The Forest Plan defines sharp-tailed grouse habitat as large areas of open upland or bog with suitable leks (i.e., locations for display and courtship behavior). Currently, two areas on the CNNF contain habitat suitable for this species: Riley Lake Wildlife Management Area and the Moquah Barrens.

The Riley Lake Wildlife Management Area (Figure 12) on the Park Falls district consists of approximately 4,000 acres of open habitat that is regularly maintained via roller chopping of brush followed by prescribed fire. Currently there are five fire units within the Riley Lake area; these units are maintained by roller chopping or prescribed fire treatment every 3-6 years, depending on treatment response. Habitat work in 2006 consisted of winter roller chopping of over 200 acres of upland brush in one unit that had grown too thick to remain suitable habitat for sharp-tailed grouse. Prescribed burning is anticipated for this unit in spring of 2008.

The Moquah Barrens unit is approximately 14,000 acres of open habitat with additional small satellite barrens. Barrens conditions are zero to 50% closed (scattered clumps of trees) and are maintained primarily using prescribed fire. Use of fire attempts to mimic the natural disturbance pattern of a fire adapted barrens landscape. Fire prescriptions are dictated by the response rate of vegetation to treatment. In 2006, at least 300 acres of barrens habitat was treated using prescribed fire to maintain an open barrens condition suitable for sharp-tailed grouse.

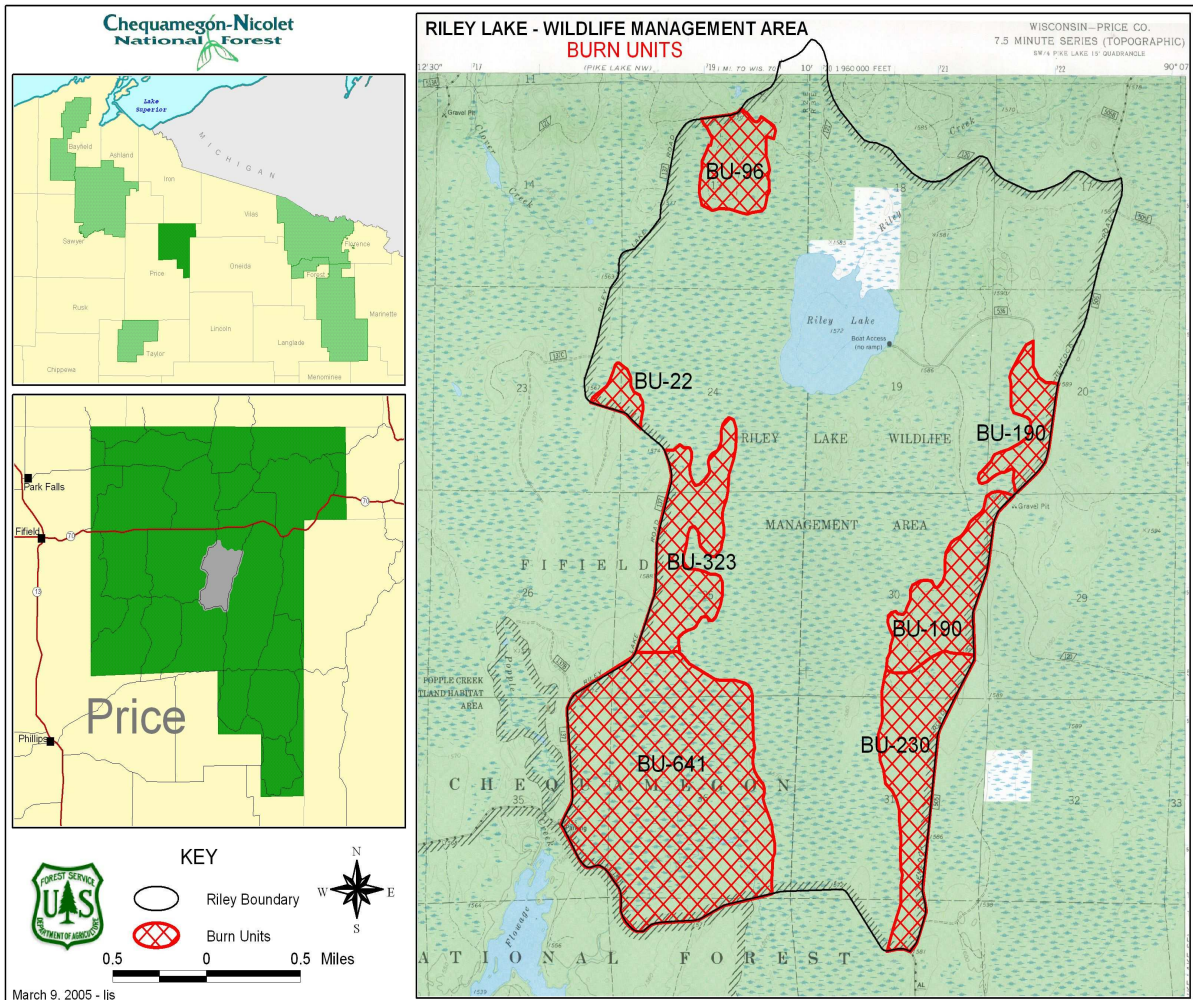


Figure 12. Riley Lake Wildlife Management Area's sharp-tailed grouse habitat burn units.

Population- The CNNF sustains two of the last nine remaining sharp-tailed grouse populations in Wisconsin. A review of population conditions across Wisconsin indicates that the Riley Lake population is the 4th largest population within the state. The 2006 spring dancing ground census of the Riley Lake population produced an overall spring count of 25 birds on two main grounds with 16 dancing males. The current overall population estimate for the Riley Lake fall population is 100-150 birds. Interesting to note, this population has not shown cyclic fluctuations over a 10-year cycle as experienced by other state populations.

The Moquah Barrens population is less well-understood than the Riley Lake population. Because the Barrens are large and complex, the birds are able to distribute themselves across this area; this hampers observation and reduces sampling reliability from year to year. Nevertheless, in 2006 six dancing males were observed on the Moquah Barrens, which is down from 36 in 2000 and 14 in 2004. Declines similar to that of the Moquah Barrens has been noted in other barrens habitats in Wisconsin during the same period. For instance, the Crex Meadows management area had 112 dancing males in 2000, and declined to 38 in 2006. Although sharp-tailed grouse are known to experience cyclic changes similar to ruffed grouse, the fact that a decline was witnessed on the Moquah Barrens (where management of sharp-tailed grouse habitat is emphasized) remains curious.

Black backed Woodpecker

Habitat- The black-backed woodpecker is an uncommon species in northern Wisconsin that responds favorably to events (ex., fire, disease, and insects) that create large amounts of standing dead and/or downed conifers. During these ephemeral events the species will “irrupt” and become more numerous while taking advantage of the newly available habitat conditions (Corace III et al. 2001). Once habitat conditions have subsided, this species returns to its pre-event population level (Corace III et al. 2001).

According to the Forest Plan, the key habitat factors for this species are: decadent jack pine, balsam fir, tamarack, cedar, and black spruce stands for foraging and nesting; and white cedar swamps for thermal cover.

As of FY 2006, the CNNF projects approximately 191,000 acres of potential habitat for this species (i.e., healthy upland and lowland conifer) forest wide. More than 80% of this habitat resides in lowland conifer swamps that receive little to no vegetative treatment. The remaining habitat exists in conifer uplands that contain dead and dying trees—mostly from Spruce Decline. Additionally, in 2004 and 2006, the Forest experienced an outbreak of “sudden needle cast disease” events in our mature plantation spruce stands. These insect/disease events created additional habitat for this species. Through implementation of the Forest Plan salvage guidelines, the CNNF gained an additional 4,636 acres of ephemeral upland habitat for this species by retaining areas of dead/dying spruce.

Population- Because of this species’ irruptive nature, populations for this species are difficult to project. From 1995-2000, two sightings of this species occurred on the Chequamegon portion of the CNNF. In 2006, two birds were sighted in a mixed white spruce/aspen stand on the Medford-Park Falls district during the Audubon Christmas Bird Count (Eklund, pers. com. 2006). On the Nicolet portion of the CNNF, no observations have been documented during the annual Breeding Bird Survey since it began in 1986. However, in 2006 the Eagle River-Florence Ranger District had two confirmed sightings. It is anticipated that more observations will occur as the species responds to Spruce Decline.

Wood Turtle

Habitat- The wood turtle is a medium-sized semi-terrestrial turtle that has been known to live as long as 58 years in captivity and 32 years in the wild. The wood turtle is described as

preferring forest, but may use any habitat adjacent to 3rd-5th order streams. Shrub communities may be important in spring for basking and security cover. Key factors for this species in the Forest Plan are describes as: steep, eroding, sandy, or gravelly slopes along riverbanks for nesting; and down logs and other woody debris.

There are approximately 2,140 miles of perennial streams and river on the CNNF. Approximately 1,072 miles of this total are coldwater trout streams that generally contain fast to moderate current and sandy substrates throughout portions of their segments on the CNNF that may serve as wood turtle habitat. In 2003, habitat surveys conducted by Gary Casper of the Milwaukee Public Museum (2003 unpublished report) evaluated stream and river segments in the southeastern part of the CNNF. A review of 40 segments by Mr. Casper noted approximately nine sites with potential nesting habitat, including one observed nesting female.

On the western side of the CNNF, little habitat information currently exists for this species. Most river and stream segments are dark-colored, cool to warm water systems with limited sandy soil substrates and are less suitable as wood turtle habitat. However, eleven Class I and II trout streams exist that may provide habitat for this species on the Chequamegon portion of the CNNF. Additionally, several suitable rivers such as the Chippewa, Jump, Yellow, Bad, and Flambeau systems maintain segments that may contain wood turtle habitat on the Chequamegon land base. However, none of these water bodies has been evaluated systematically for habitat availability.



In addition to habitat surveys, aquatic passage has been improved for this species through the “10%” program. Under this program, improperly functioning stream crossings are replaced to improve the flow of water and passage for aquatic organisms. In 2006, seven stream crossings were upgraded on cool or cold water stream systems that have a high potential for wood turtle use. If wood turtles are utilizing these systems, they would benefit from the improved passage condition.

Population- Although surveys are conducted for wood turtle habitat and casual observations are documented, no meaningful population estimate currently exists for the CNNF. When the assessment of suitable habitat is completed, it is recommended that surveys be conducted for wood turtle.

Chryxus Arctic, Tawny Crescent, West Virginia White, Henry’s Elfin and Northern Blue

Habitat- The Forest Plan identifies varying habitat for the RFSS butterflies: for West Virginia white, it is rich hardwoods with host plant toothwort; Chryxus arctic and tawny crescent prefer barrens habitat; Henry’s elfin is open and brush land habitat; and for northern blue, the key habitat is barrens containing host plant dwarf bilberry.

The West Virginia white’s habitat is the most abundant on the CNNF. The Forest Plan estimates that within MA’s 2A, 2B, and 2C, approximately 646,000 acres of uneven-aged

northern hardwoods would be available as habitat for this species. Currently, habitat estimates for West Virginia white on the Nicolet side is approximately 199,000 acres. Current habitat estimates for this species on the Chequamegon side are just now being compiled; however, MA 2 is predominate on portions of the Medford-Park Falls and Great Divide districts, and an estimate similar to that of the Nicolet is anticipated.

Habitat for the *Chryxus arctic* and tawny crescent mainly exists in the Moquah Barrens. So far, surveys have noted the *Chryxus arctic* only on the Washburn Ranger district, particularly the Moquah Barrens. Habitat for this species is currently estimated at 18,200 acres. However, this does not account for natural frost pocket barrens on the Washburn District that also have potential to supply habitat for this species. The tawny crescent, not only utilizes barrens but also clear cut areas, utility right of ways and active railroad grades for habitat. As with *Chryxus arctic*, habitat for tawny crescent typically occurs in large blocks on the Washburn Ranger District totaling approximately 20,000 acres. However, the known distribution for this species is anticipated to increase as additional surveys are conducted across the CNNF.

Henry's elfin butterfly appears to tolerate a wider range of habitat than any of the other open land species. This species has been noted to inhabit barrens, open brush lands, and sedge/alder swamps. A current projection of habitat for this species estimates over 22,000 acres within the Moquah Barrens and the Riley Lake/Mud Lake complex. In addition to these locations where open land conditions are sustained, habitat is likely to exist across the Forest in large sedge/alder complexes, though these areas have not been surveyed for Henry's elfin yet.

The northern blue butterfly currently has the most limited habitat on the CNNF. This species has been documented only on the Lakewood-Laona district in open frost pockets that contain dwarf bilberry. Current habitat estimates for this species indicate less than 2,000 acres of habitat may be present on the CNNF for this species. Since 2004, the Lakewood-Laona district has been actively managing 231 acres of potential habitat to reduce encroachment of woody vegetation, and to sustain the species' host plant—dwarf bilberry. Additionally, as part of a red pine thinning project, the District has established flight corridors between habitat patches for this species to reduce isolation of populations and encourage colonization of unoccupied habitat.

Population- Currently there are no population estimates for any of these species on the CNNF. Only recently have surveys for these species been undertaken in a systematic fashion to gauge the range of occupancy. Additionally, some species like *Chryxus arctic* have life cycles that make it difficult to assess presence or absence from year to year. Since 2004, the CNNF has conducted annual flight surveys on the Washburn, Great Divide and Medford-Park Falls districts for the open land species. These surveys have documented increased occurrence of the tawny crescent and *Chryxus arctic* butterfly on the Washburn District. Roadside surveys adjacent to northern hardwoods have also found West Virginia White to be widely present. Surveys for the northern blue and Henry's elfin have not uncovered additional occurrences on the CNNF.

1.2 – Ecological Communities of Special Concern

Objective 1.2: Conserve special environmental, cultural, social and/or scientific values in protected areas including Wilderness, wild and scenic rivers, research natural areas, special management areas and old growth areas.

The ecological communities of special concern that represent the best examples of those found naturally on the CNNF are studied intensively. Table 9 includes a list of studies ongoing or recently concluded within these areas.

Table 9. List of research underway or recently conducted within Research Natural Areas (RNA's) or Candidate Research Natural Areas (CRNA's) on the CNNF.

RNA	Research organization	Topic
Moquah Barrens	UW Madison	Jack pine budworm
Moquah Barrens	Northern Region Research	Baseline vegetation plots
Dry Lake	WDNR	Peatland study
Kidrick Swamp	WDNR	Peatland study
Argonne Experimental Forest	WDNR	Old growth study
Tucker Lake/Memorial Grove	WDNR/UW Madison	Small mammal/amphibian study
Foulds Creek	UW Stevens Point	Remeasure historical plots
South Branch Grove	U. of Michigan	Plant diversity study
Moquah Barrens	U. of Toledo	Carbon study
Grandma Lake Wetlands	WDNR	Wetlands study
Camp Nine Pines	Northern Region Research	Soil biomass/carbon/nitrogen
All Nicolet CRNAs	UW Green Bay/USFS	Bird monitoring (20 years)
All Chequamegon RNAs	NRRI/USFS	Bird surveys (15 years)
All Chequamegon RNAs	USFS	Baseline vegetation plots
McCarthy Lake	USFS	RNA monitoring pilot study
McCaslin Mountain	WDNR	Baseline monitoring
Nicolet CRNAs	Menominee Tribal Enterprises	MOU for baseline vegetation monitoring
Several RNAs/CRNAs	WDNR/T. Erdman	Goshawk nest monitoring
Wabasso Lake CRNA	Michigan Tech U	Hemlock response to fire

1.3 – Aquatic Ecosystems

Objective 1.3a: Reduce the number of road and trail stream crossings. Reduce sedimentation and improve fish passage in existing road and trail stream crossings.

In FY 2006, seven road stream crossings and three trail stream crossings were reconstructed to reduce erosion, prevent future failures, improve fish passage and restore channel morphology (Table 10).

The Morgan Falls bridge on FR 199 restored fish passage to an isolated segment of native brook trout habitat and also prevented a future failure of a deteriorated culvert. In addition to replacing undersized culverts at two stream crossings, the FR 697 project included the installation of nine cross-drain culverts and ¼ mile of gravel surfacing to solve a severe erosion problem. This project is estimated to reduce sediment input into Fourmile Creek by 20 tons/yr. The box culvert in Lower Popple Creek on FR 2593 will enhance fish passage and restore channel morphology impacts associated with the previous culverts. The unnamed tributary to 9 Mile Creek at FR 2460 was washing out frequently and contributing large quantities of sediment to the stream which also impacted channel morphology. The new culvert will prevent future failures and allow the channel morphology to gradually restore itself.

An unnamed tributary to Hawkins Creek was the Forest's first stream simulation project where the culvert is as wide as the stream and a stream channel is constructed through the culverts. This is a newer technique that is being used on steep streams where the culvert cannot be set flat. This project restored fish passage on a native brook trout stream.

No road or trail stream crossings were created or removed in FY 2006.

Table 10. Road and trail stream crossings reconstructed in FY 2006.

Stream*	Road or Trail	Project Activity
Morgan Falls Cr	FR 199	28' Span Bridge
Unt Fourmile Cr	FR 697	57"x38" Culvert
Unt Fourmile Cr	FR 697	36" Circ Culvert
L Popple Cr	FR 2593	20'7"x5'3" Culvert
Unt 9 Mi Cr	FR 2460	60" Circ Culvert
Unt Meadowbrook Cr	FR 2580	49"x33" Culvert
Unt Hawkins Cr	FR 383B	95"x67" Culvert
Deerskin R	Hiking Trail	Trail Bridge
Int Unt to Unt Bad R	Penokee Ski Trail	57"x38" Culvert
Int Unt to Unt Bad R	Penokee Ski Trail	57"x38" Culvert

* Unt = Unnamed Tributary, Int = Intermittent

Objective 1.3c: *Restore large woody debris by annually treating some lakes with tree drops and/or cribs. Consult with the Native American Tribes when proposing this treatment on lakes where spear fishing occurs.*

Logging practices of the early 1900's did not consider the importance of shoreline protection. As a result, trees along lakes were harvested the same as any other trees. However, these trees are important to the ecology of the shoreline community—not only while living, but also after they die and fall into the lake. Submerged trees provide large woody debris to the aquatic ecosystem, which contributes to the health of the community by dissipating wave action, acting as refuge for young fish, contributing nutrients to the system, and many other benefits. The restoration of shoreline forests will eventually provide a fully



A series of fish cribs are placed on the ice along a lake's shoreline on the Washburn district.

functioning terrestrial and aquatic ecosystem again. In the meanwhile, it is often necessary for the CNNF to construct and place large woody debris along shorelines to offset the current need. This is often accomplished by placing wooden “cribs” on the ice and letting them fall through in the spring.

Bass Lake received 10 fish cribs and 28 tree-drop structures. The work was done in partnership with the Bass Lake Association and after consultation with Native American Tribes and the general public. Both projects were designed to help start restoring large woody debris to the lake ecosystem.

Objective 1.3d: Relocate some existing roads and trails out of riparian management zones. Where relocation is not feasible, reconstruct road and trail segments as needed to minimize erosion, sedimentation, and hydrologic impacts.

No road or trail segments were relocated out of riparian management zones in FY 2006. Ten 24” diameter cross-drain culverts were installed on the Deadhorse Run Motorized Trail to restore wetland drainage patterns, improve water quality and reduce trail maintenance.

Objective 1.3e: Improve or restore habitat in streams and lakes.

Fish populations were monitored in 28 lakes during FY 2006. Full surveys were completed on five of the 28 lakes; the remaining 23 lakes were sampled with an electrofishing boat in the spring or fall to help monitor general trend of the fishery and determine year class strength. Overall fish populations across the forest appear healthy and provide good to excellent recreational fishing opportunities. In lakes that had been negatively affected by the introduction of musky, fish populations are now showing an improved size distribution as musky numbers decline. Fish community health has also improved in many of these waters. For example, largemouth bass and panfish are becoming more abundant, and the populations in some lakes have also shown improvements in size structure. Those lakes with balanced prey/predator populations offer the healthiest panfish populations. Findings from the five full surveys will be available in report form in FY 2008.

The CNNF operates ten winter aeration systems to increase oxygen levels in lakes during the winter. Each aeration system was monitored for success during the winter of 2005-2006, and all systems were able to prevent winterkill conditions. However, 25 other lakes without aeration systems were also monitored for winterkill conditions and none occurred on these lakes. Given this outcome, we conclude that the relatively mild winter of 2006 can be given most credit for the absence of winterkill conditions on CNNF lakes.

Habitat improvement activities occurred on six streams (Shabodock, Swanson, McCaslin Brook, Coyote, 20 Mile, Deerskin) during FY 2006. The habitat restoration work featured a combination of brush bundles, brushing and large wood placement to narrow the stream and improve habitat complexity. All work (except on 20 Mile) was done in partnership with various chapters of Trout Unlimited. In all, more than four miles of instream habitat was improved for brook trout. The remaining miles were improved through the beaver management program (see 1.3g). There is baseline fish data for several of the listed streams, and we have plans to monitor fish populations at two sites upon project completion. Monitoring trout streams across the forest indicates brook trout populations are stable, particularly in those systems that are maintained in a free-flowing condition.

Instream habitat restoration also occurred on the South Fork Flambeau River (SFFR) in 2006. The SFFR supports a diverse warmwater aquatic community that includes species such as the lake sturgeon, smallmouth bass, redhorse, numerous darters and minnows, eight species of mussels and a variety of invertebrates.

The SFFR river channel was heavily impacted by log drives at the turn of the century. The work done in 2006 is part of a 3-year effort to restore river channel integrity and instream habitat complexity on over 2 miles of river. Trout habitat restoration techniques are being applied to this project, and include the use of an excavator to reconstruct the channel and placing brush bundles to help narrow and deepen the river channel.

The CNNF and WDNR work cooperatively to restore trout stream habitat within the CNNF. Part of these efforts in FY 2006 included monitoring the results of a variety of stream restoration techniques that have been implemented in the past. There are twenty-nine permanent stations where data are collected on the changes to the cross-sections of streams over time. The primary objective of this type of monitoring is to determine if the new channel dimensions would remain stable overtime. Currently there are 5 streams with permanent monitoring stations. Within the first 3 or 4 years of the project the stream cross-sections are monitored annually; after that they will be monitored on a rotating basis.

In FY 2006 cross-sections of Elvoy, North Branch Oconto and Brule creeks were monitored. These habitat improvement efforts focused on narrowing and deepening the channel, improving brook trout habitat, and consequently decreasing habitat for brown trout, which is a non-native species. Monitoring the cross-sections of these streams allows us to determine if the bankfull widths and depths were appropriate for each stream segment.

The Elvoy sites were established in 1998, and 2006 is the sixth time that progress has been monitored. The data have not been fully analyzed but there are a few trends that are emerging. In general, the pools on the outside bends eroded out 1-2ft within the first few years and have since stabilized. The riffles appear to be the most stable areas and are showing very little movement. Some aggrading has taken place in the pools but the amount does not appear to be significant. Sediment is depositing on the floodplain causing some aggradations, and future monitoring will show whether the floodplains have returned to historic levels. Monitoring indicates the channel is adjusting, the reaches have been generally stable, and habitat for brook trout has vastly improved.



The photos above show the same stretch of Elvoy Creek before in-stream restoration (left) and after (right).

A WDNR fisheries evaluation for this section of the Elvoy River shows brook trout responded as with other similar projects. There was a decrease in overall number of brook trout per mile but an increase in pounds of brook trout per mile. The reduction in numbers occurred in the fingerling and yearling age groups, and there was a dramatic increase in the number of brook trout into the larger size category. Prior to the habitat work, 12+ inch brook trout were not found, but several were collected during post-project monitoring. The ratio of brook trout to brown trout increased 60%, from 2.2:1 to 3.5:1.

The North Branch Oconto sites were established in 2005 after a remnant logging dam was removed. With only one year of monitoring it is too early to assess the success of this project.

Monitoring stations were also established on the South Branch Oconto, Little Deerskin, and Elvoy Creeks (all trout waters) where new culverts were being installed at road crossings. In all three cases, the old culvert's placement was causing ponding upstream, fish passage issues and sedimentation. The new crossings featured culverts designed to correct all of these issues. Change to the stream channels will be monitored for a few years to fully evaluate the efficacy of the new crossings.

Objective 1.3g: Protect and restore coldwater stream communities by maintaining Class I, Class II, and Class III trout streams and their tributaries in a free-flowing condition.

The Forest contains 1,072 miles of Class I and II trout streams. Trout streams with the best habitat receive a substantial ground water flow that maintains a high baseflow of cold, clear, alkaline water. Many of these streams have had historical impacts (ex., scouring and channelization from log drives,) that have reduced the quality of their habitat. Beaver have played a key role in the overall health of brook trout ecosystems over the last several decades. Beaver can adversely affect trout habitat by: blocking migration, increasing water temperature, causing sedimentation of spawning areas, and altering habitat which causes increased competition from other fish species. To address the interaction between beaver and trout, a program was initiated in 1988 to reduce the number of beaver on selected trout

streams within the CNNF and throughout Wisconsin. Currently, shared beaver management efforts by the CNNF and WDNR maintain approximately 300 miles of trout stream within the CNNF boundary in a free-flowing condition.

As part of the beaver management program, fall beaver colony surveys are conducted across the CNNF. Surveys are done using fixed-wing aircraft to map active beaver colonies on both trout and non-trout water. This mapping has occurred on the Nicolet Landbase since 1988 and covers 90% of all streams on the Nicolet. The Chequamegon survey started in 1995 and covers the majority of the streams on the Great Divide, Park Falls, and Washburn Units. The Medford unit in Taylor County has a subset of streams surveyed as Mink Creek is the only classified trout stream on the Unit. Well over 1,500 miles of stream are surveyed in this effort.

With 861 miles of the CNNF's 1,072 miles of trout stream, the Nicolet landbase has the bulk of the coldwater resources. In FY 2006, the number of active beaver colonies found in streams surveyed on the Nicolet landbase was approximately 118. Colony numbers have

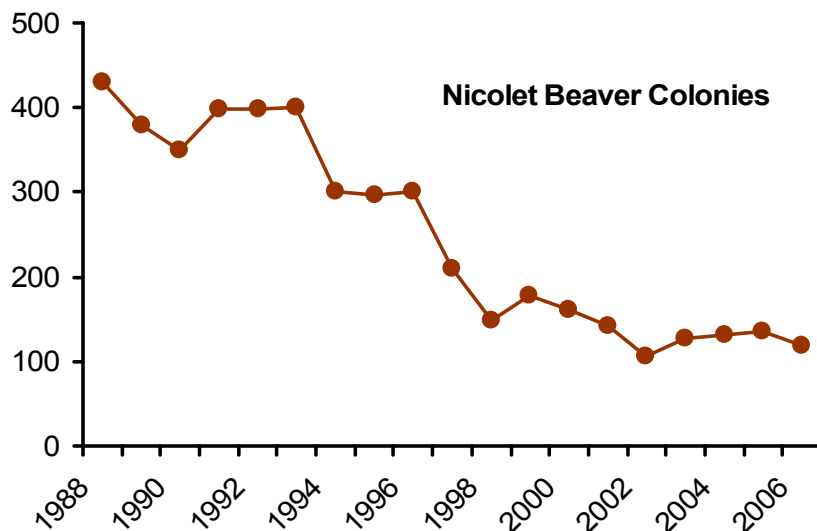


Figure 13. Number of beaver colonies observed during surveys on the Nicolet landbase of the CNNF (1998-2006).

ranged from 420 in 1988 to 118 in 2006 (Figure 13), and this can be directly attributed to the beaver management efforts. Monitoring results on the Chequamegon side show similar results. However, it is important to note that the entire CNNF has been in drought conditions starting in 2005, and the resulting low water levels may also be assisting beaver management efforts.

Objective 1.3i: Cooperate with state-wide Best Management Practices (BMPs) monitoring coordinated by the Wisconsin DNR.

After the Forest Plan was signed, this additional monitoring item was volunteered. A future Forest Plan amendment or administrative correction is recommended to formally include this monitoring item.

Wisconsin's forestry BMPs for water quality are implemented as a matter of policy for all timber sales on the CNNF. The CNNF also participates in a state-wide effort led by the Wisconsin DNR to monitor the implementation and effectiveness of Wisconsin's forestry BMPs.

Past monitoring indicates that BMPs were correctly applied where needed about 93 percent of the time on national forest lands and 83 percent of the time for all ownerships combined. The CNNF monitoring occurred from 1995-1997 and included 17 timber sale units. Across all ownerships, adverse impacts to water quality were extremely rare when BMPs were applied correctly. Adverse impacts to water quality occurred about 71 percent of the time when BMPs were not applied where needed (Shy 2005).

In 2006, monitoring by interdisciplinary teams focused on CNNF and industrial land ownerships. A total of 28 CNNF and 33 industrial timber sale units were monitored by these teams in 2006 (Shy and Wagner 2007). The implementation and effectiveness of BMPs on the CNNF are summarized in Table 11 for those situations where BMPs were needed. In the vast majority of cases (97%), BMPs were applied where needed resulting in no adverse impact to water quality. In the few cases where BMPs were not applied where needed (3%), there were no adverse impacts to water quality 60% of the time and minor impacts 40% of the time. No major impacts were observed to aquatic resources. For major BMP categories, BMPs were applied where needed 100% of the time for fuels, lubricants, waste and spills; 94% of the time for riparian management zones; 93% of the time for roads; 99% of the time for timber harvesting; and 93% of the time for wetlands.

Table 11. BMP application and effectiveness on CNNF lands where BMPs were needed.

Application Where BMP Was Needed	Total %	% of Time for Each Application Category				
		No Adverse Impact	Minor Short-Term Impact	Minor Long-Term Impact	Major Short-Term Impact	Major Long-Term Impact
Applied Correctly	95	99	0	1	0	0
Applied Incorrectly	2	99	<1	<1	0	0
Not Applied	3	60	20	20	0	0

There was a slight increase in BMP application on the CNNF when comparing monitoring data from 1995-97 to 2006. BMPs were applied where needed (correctly or incorrectly) 92% of the time in 1995-97 and 97% of the time in 2006. All of these categories improved or stayed the same with the exception of wetlands which had an application rate of 100% in 1995-97. Riparian management zones had the largest increase with a 79% application rate in 1995-97.



1.4 – Terrestrial Ecosystems

Objective 1.4a: Maintain or restore vegetation communities to their desired conditions Emphasize restoration/maintenance in MA 2B, 4B, and 8C.

The Forest Plan requires that some timber harvest activities to be conducted only during the winter when the ground is frozen solid. These “frozen ground only” timber harvests are meant to protect soils and plants in Management Area 2B (northern hardwoods). To understand what effects this provision has had, researchers at the University of Wisconsin-Green Bay are examining environmental conditions in stands that experienced frozen ground only harvests, and stands that were harvested at other times of the year.

Coefficients of conservatism for Wisconsin vascular plants were developed by a group of experts solicited by the Wisconsin State Herbarium at the University of Wisconsin-Madison. The coefficients, which range from 0 to 10, represent an estimated probability that a plant is likely to occur in a landscape relatively unaltered from pre-settlement conditions. The results of the study show that winter-logged sites supported subtle but significantly higher numbers of ecologically vulnerable native plant species as defined by independently established coefficients of conservatism. This difference between winter-logged and summer-logged sites suggests that winter logging may benefit vulnerable species and, in the long run, may help maintain plant biodiversity in managed forests of this region. Overall differences between winter-logged and summer-logged plots were not as striking, but the investigation revealed an important pattern: species that differed between winter- and summer-logged sites tended to be those with previously-known vulnerability to disturbance (i.e., species with a coefficient of conservatism > 6). Species with a high coefficient of conservatism were more numerous in winter-logged sites than in summer-logged sites, suggesting that summer logging operations might be deleterious to these species.

Objective 1.4d: Maintain or expand existing dwarf bilberry populations.

The northern blue butterfly and its obligate host plant, dwarf bilberry, are both Regional Forester Sensitive Species on the CNNF, where they are known only from ten upland openings; all of the openings are located about 10 miles northeast of the town of Lakewood within the Lakewood-Laona District. These openings are where soil, moisture, and light conditions are favorable, including “frost pockets.” Historically, maintenance of these areas in an open condition would have occurred naturally through fire or the inherent tendency for unseasonable frosts in the frost pockets. In the past 150 years, disturbance regimes that would have maintained habitat for these species have been altered and much of the habitat for these species have been lost or degraded. The dwarf bilberry and northern blue butterfly have been slow to recolonize. For that reason, the Forest Plan included an objective to maintain or expand existing dwarf bilberry populations, and in so doing, increase the amount of habitat available to the northern blue butterfly.

Presently, the dwarf bilberry patch sizes are unknown because the plant is low-growing and inconspicuous. In nearly every upland opening where it occurs, the actual plant patch size is a fraction of the opening size and a couple of the openings have more than one plant patch.

In FY06, opening maintenance was accomplished at one bilberry site (Table 12). Encroaching vegetation and bracken fern were cut with brush augers and removed from the opening to allow sunlight to reach the plants. Dwarf bilberry plant populations in this opening were monitored by district specialists. Several historical patches of the bilberry were still present and seem to be expanding their range slightly.

Table 12. Occurrences of Dwarf Bilberry and Northern Blue Butterfly

Comp	Stand	Opening Size (acres)	Bilberry Patch Size	Dwarf Bilberry Present	Northern Blue Butterfly Present	2006 Work / Acres
4004	106	3.1	unknown	yes	unknown	-
4004	120	3.0	unknown	yes	yes	1 ac
4004	25a	3.0	unknown	yes	unknown	-
4006	105	1.4	unknown	yes	unknown	-
4006	103	11.8	unknown	yes	unknown	-
4006	122	24.1	unknown	yes	unknown	-
4006	107	3.3	unknown	yes	yes	-
4006	108	15.4	unknown	yes	unknown	-
4028	104	0.8	unknown	yes	unknown	-
4028	106	5.5	unknown	yes	unknown	-

District specialists worked with timber crews in preparation for sale layout near several frost pockets for the Red Pine Plantation EIS. These trees will be marked in FY07 at several of the existing openings harboring dwarf bilberry. The openings will be expanded by harvesting approximately 3 rows of red pine that surrounded them, and also by removing encroaching vegetation. Several rows of pines will also be removed to create travel corridors or “fly ways” that connect the frost pockets to promote movement of butterflies and recolonization of the plants between the openings.

Objective 1.4e: Increase average vegetative patch size.

On the CNNF, we are trying to increase patch sizes of vegetation communities such as: regenerating aspen, openings in MA 4C (that act as surrogate pine barrens), and mature northern hardwood forest. Tracking these changes over time will enable us to determine progress towards the desired future condition for each forest type as prescribed in the Forest Plan. The results from this analysis (Table 13) will serve as a baseline for patch size. For the purpose of this analysis, each forest type required a separate definition of “patch” that is based on the ecological function of that community. The parameters for this analysis are as follows:

Regenerating Aspen

- Forest stands typed as quaking aspen, bigtooth aspen, and aspen-white spruce-balsam fir that are less than 10 years old
- Stand boundaries do not break up patches

- Other forest types do break up patches
- Non-CNNF lands do break up patches (regardless of actual forest type)
- Roads and streams do not break up patches

Surrogate Pine Barrens

- Forest stands 10 years old or less
- Forest stands of any age typed as non-forested lowland shrub, upland shrub, and open land
- Stand boundaries do not break up patches
- Non-CNNF lands do break up patches (regardless of actual forest type)
- Roads and streams do not break up patches

Mature Northern Hardwoods

- Forest stands typed as hemlock, mixed northern hardwoods-hemlock, sugar maple-northern red oak, sugar maple-yellow birch, sugar maple-basswood, black cherry-white ash/yellow poplar, red maple, sugar maple, beech, and mixed hardwoods that are greater than 80 years old
- Other forest types greater than 5 acres do break up patches
- Stand boundaries do not break up patches
- Non-CNNF lands do break up patches (regardless of actual forest type)
- Service level roads 3, 4, and 5 do break up patches
- Note: "Interior" is not a condition

Table 13. Patch size conditions for three forest types (regenerating aspen ["Aspen"], surrogate pine barrens ["Barrens"], and mature northern hardwoods ["Hardwoods"]) on the CNNF as of FY 2006. The Forest-wide mean, median, maximum, and total are given in acres, and "number" represents the tally of patches of all sizes meeting the definition described above.

Forest Type	Mean	Median	Maximum	Total	Number
Aspen	27.4	20.8	350	23,070	843
Barrens	3.1	1.4	68	340	108
Hardwoods	117.3	41.9	6,811	398,962	3,401

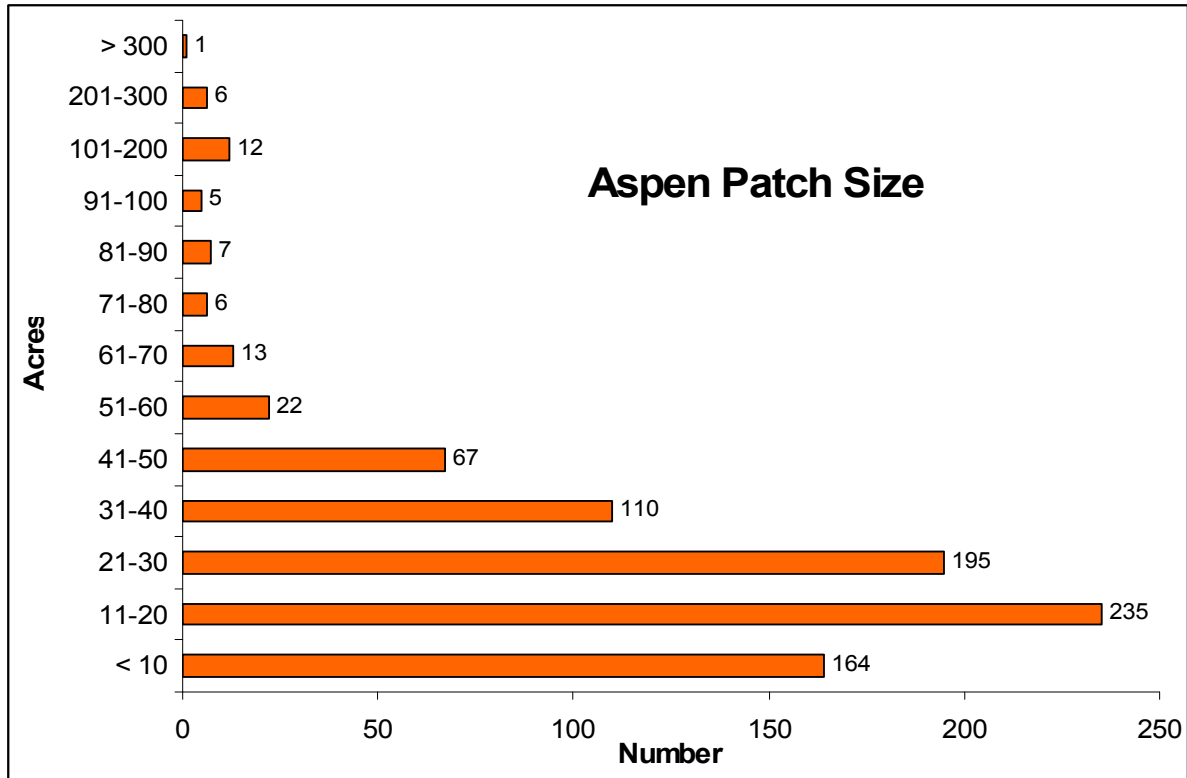


Figure 14. Patch size distribution of aspen on the CNNF as of FY 2006.

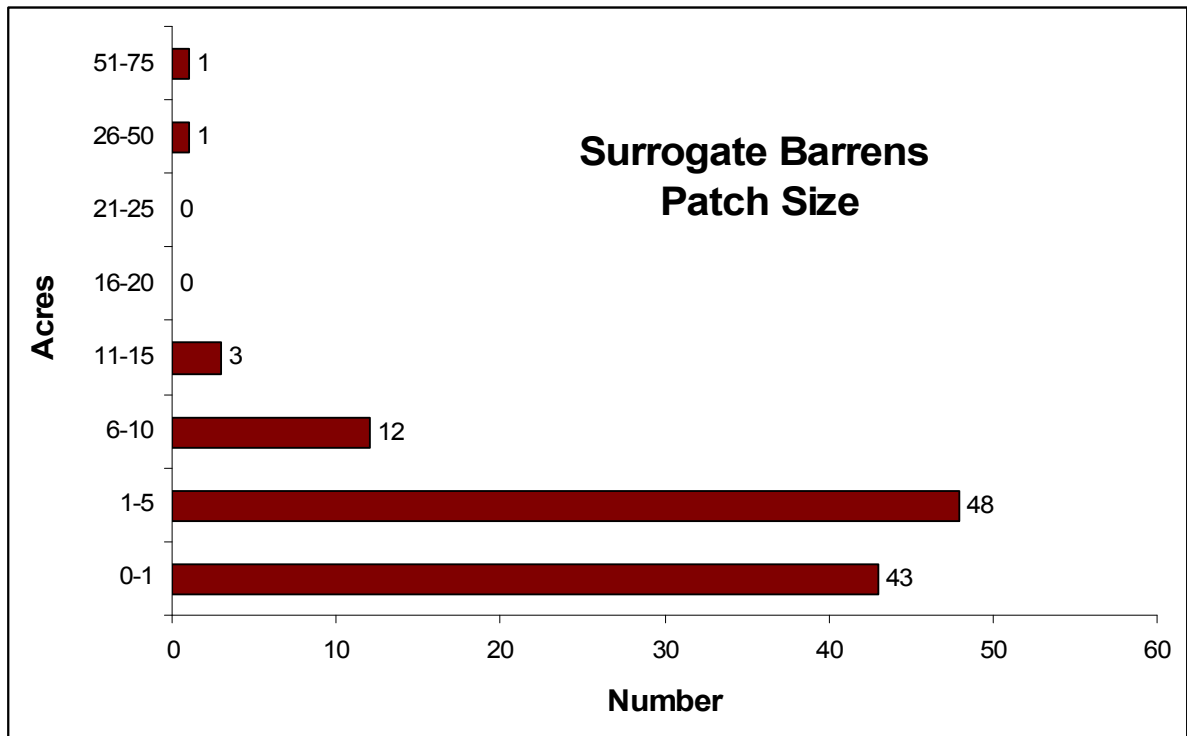


Figure 15. Patch size distribution of surrogate barrens on the CNNF as of FY 2006.

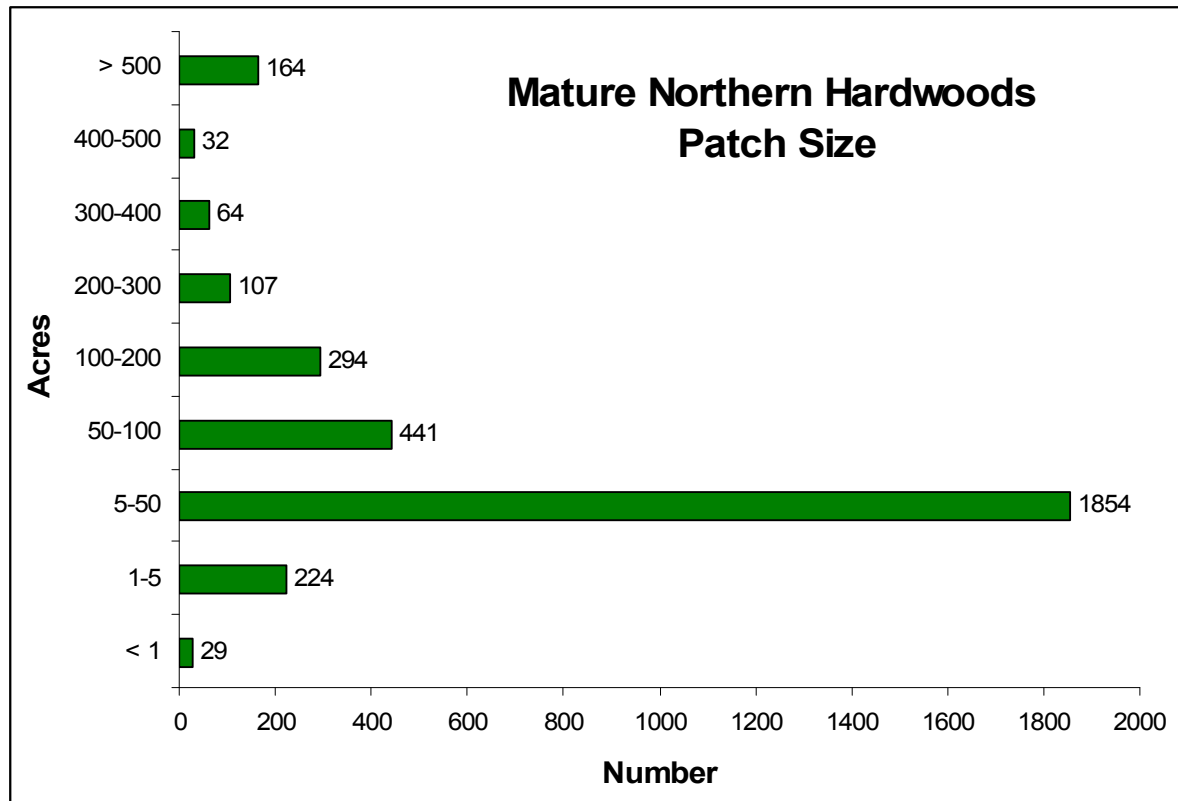


Figure 16. Patch size distribution of mature northern hardwoods on the CNNF as of FY 2006.

Objective 1.4g: Annually treat non-roadside and roadside NNIS sites. Develop an NNIS strategy to guide amounts and locations of treatment.

The CNNF Invasive Plant strategy is still in draft form. Recent actions on the forest regarding NNIS follow the National and Regional strategies. Completion of the written form of the Forest NNIS strategy is expected in 2007.

The National NNIS Strategy encompasses four program elements (also reflected in the Region 9 strategy):

- 1) Prevention
- 2) Early detection and rapid response
- 3) Control and management
- 4) Rehabilitation and restoration.

1) Prevention: A number of NNIS prevention measures were initiated during FY 2006 including: Cleaning provisions are in place in all timber sale contracts to prevent movement of weeds, pathogens, and worms; winter logging has been adopted for many upland harvests that will limit seed spread; public education events (15 presentations from the 6 ecologists and seasonal employees, development of displays) were used to create an awareness among CNNF visitors and neighbors; and boot brushes were installed at trailheads in the Franklin/Butternut Lakes area.

2) Early Detection/Rapid Response: The Forest conducts yearly surveys of areas at high risk for infestation. An additional 466 NNIS sites were found in 2005 and 2006 and were mapped and entered into the appropriate databases. Analysis on the additional sites was started in 2006. A supplement to the EA was written and an amended Decision Notice is expected in 2007. Most forest projects now include specialist reports on NNIS.

3) Control and Management: We treated 171 sites totaling 360 acres in 2006. Methods included hand-pulling, mowing, digging, herbicide, and bio-control insect releases. Work was done by CNNF employees and private contractors.

4) Rehabilitation/Restoration: The Forest started native plant gardens in 2006 at 5 administrative office locations for the purpose of collecting native seed for on-forest restoration projects.

Objective 1.4i: When large disturbance events (over 100 acres) occur within forested areas, maintain a portion of the damaged vegetation to provide additional site level structure and coarse woody debris.

The only disturbance event over 100 acres during FY 2006 resulted from the spruce decline epidemic, which had affected 8,778 acres of forested land by the end of FY 2006. Of that total, 1,167 acres (13.2%) were left to contribute coarse woody debris to the landscape.

Objective 1.4i: Pine barren restoration.



A prescribed burn in the Sunbowl Pocket Barrens of Washburn District during 2006.

During FY 2006, pine barren restoration efforts occurred on the Washburn and Lakewood-Laona Districts. The Washburn District used a prescribed fire to burn 66 acres in the Red Savanna East unit—which includes red pine, jack pine, and a frost pocket opening—to create pockets of barrens. Another prescribed fire included 100 acres in the Brinks 251 unit, which includes satellite barrens. In the Moquah Barrens, a total of 2,040 acres were burned with prescribed fire in FY 2006.

Also in 2006, mechanical and fire treatments were planned and analyzed for 200 acres of barrens and 50 acres of openings (some are in frost pocket depressions) in the Fishbone DEIS. These projects are targeted for implementation starting in 2007.

On the Lakewood-Laona District, a partnership with the National Wild Turkey Federation and Menominee Tribal Enterprises, worked to re-establish barrens habitat during 2006. A 53-

acre site that was being encroached upon by surrounding vegetation, and which had very poor quality aspen growing on site was cleared. In addition, a one acre open area was maintained for northern blue butterfly/dwarf bilberry habitat.

1.6 – Air Quality

Objective 1.6: Forest ecosystems are not adversely affected by air pollution; forest management activities are conducted to protect or maintain air quality.

The Forest implemented prescribed burns totaling 3,200 acres. These burns had a small, short-term impact to air quality primarily in the form of increased particulate matter. These impacts were minimized by the limited area treated and by implementing burn plans that require good dispersal of smoke.

Air quality related values (AQRVs) are important wilderness characteristics that could be affected by air pollution. For Rainbow Lake Wilderness (RLW) these AQRVs include water, vegetation, fauna and soil. The CNNF has an affirmative responsibility to protect AQRVs from adverse effects. Doing so requires monitoring of AQRVs to understand their current status and trend relative to air quality conditions.

Water is one of the most sensitive AQRVs because there are several soft-water seepage lakes in RLW that have minimal ability to buffer or neutralize acids and therefore are very susceptible to acid deposition. Three thresholds have been identified for alkalinity or acid neutralizing capacity (ANC) in these lakes, and are expressed in units called micro-equivalents per liter ($\mu\text{eq/l}$). The thresholds include an episodic “red line” value of 0 $\mu\text{eq/l}$, a general “red line” value of 10 $\mu\text{eq/l}$ and a “green line” value of 25 $\mu\text{eq/l}$. Concentrations below the red line values indicate adverse impacts from acidification are likely occurring to aquatic resources while those above the green line value indicate impacts are unlikely.

The alkalinity and pH of seven lakes have been monitored several times beginning in 1984. Each lake was monitored once per year in late summer from 1999 through 2006.

Bufo and Anderson Lakes had ANC's between the red and green line values in 2005 while Reynard, Wishbone, Clay, Flakefjord and Beaver Lakes were above the green line value. This was an improvement over the period of 2000 through 2004 when several samples were below the red line value including three for Bufo Lake, two for Reynard Lake and one for Anderson Lake. 2006 data are still being evaluated for accuracy as all lakes had unusually and extremely low ANC's.

1.7 – Soils

Objective 1.7: Provide desired physical, chemical and biological soil processes and functions on the Forest to maintain and/or improve soil productivity.

Annual qualitative monitoring is conducted by the Forest Soil Scientist at locations around the CNNF that represent the gamut of soil types, and have experienced recent timber sale

activities. An assessment of the activity area is made to determine the degree of disturbance (ex., rutting, compaction, organic mater removal, erosion, displacement, etc.) resulting from timber harvest activities. The degree, extent and distribution of soil disturbance are summarized for each activity area, and a report is generated to document the Soil Scientist's findings.

During FY 2006, the Forest Soil Scientist monitored and recorded soil resource impacts from timber harvest activities on 21 harvest units, 12 different sales, over 3 ranger districts, on 12 different soil types. Each timber sale payment unit was walked with the sale administrator and evaluated individually for soil compaction, rutting, displacement and erosion. Findings for each harvest unit were documented qualitatively and quantitatively with supportive digital photos. All harvest areas were well below soil quality threshold values for detrimental disturbance from heavy equipment operation, in accordance with the Forest Plan soil guidelines. While about 8-10% of each area was traveled on by equipment, total detrimental impacts averaged less than 2% of a harvest unit and were primarily related to compaction of the main skid trails, with some minimal rutting. Based on these observations, it appears that restricting harvest activities to periods when the ground is dry or frozen (thereby increasing its ability to support heavy equipment) is an effective means to avoid soil damage.

Goal 2 – Provide Multiple Benefits for People

2.4 – Heritage Resources

Objective 2.4a: Promote the scientific study of a selected heritage resource, primarily through public participation and institutional/governmental partnerships.

A new Heritage Stewardship partnership was initiated in 2006 and two existing partnerships were continued. These partnerships varied in focus, and included the development of interpretive media, historic site stabilization, and the management of historic records and documents.

In 2006, through an existing partnership with the University of Wisconsin, Stevens Point College of Natural Resources, three graduate students developed an interpretive media plan for the historic Fifield Fire Lookout Tower, a property that will be placed on the National Register of Historic Places (NRHP) in 2007. Text, designs and concepts included in their plan were fabricated and installed on-site in September 2006. Further, an interpretive brochure designed by the students, detailing the Tower's history, was published through funding provided by the Town of Fifield. Finally, through a Wisconsin Humanities Council grant, an oral history investigation focused on the lives of early fire lookouts, and excerpts from the oral history transcripts were published in an interpretive pamphlet, distributed by the Forest Service and the Town of Fifield Museum.

The Forest's second continuing partnership is with the Wisconsin Historical Society's (WHS) Division of Library and Archives. Recognizing the alarming loss of the Forest's historic

records and documents, Forest staff turned to the WHS's Northern Wisconsin History Center. Through a five year challenge cost share agreement initiated in 2005, this year a WHS archivist conducted a condition survey of Forest historic records. Based on survey results, a long-term plan for conservation and curation of historic records and documents will be developed in 2007.

A new partnership was established with Ascend Academy, an alternative high school located in Drummond. Ascend Academy's curriculum includes "community service" projects, as such, a multi-year project was formulated that will focus on the rehabilitation and interpretation of the Rust Owen Lumber Company reservoir. Located just outside of Drummond, the Reservoir has been designated a Special Management Area (MA 8F) because of its historic values, and its importance to the history of the Drummond. This year's work included a condition survey of the reservoir, conducted by the Forest's engineering staff, as well as the removal of vegetation and refuse within and around the reservoir. As a result of this year's work, a rehabilitation plan was developed, and with the assistance of Ascend students and faculty, rehabilitation activities are scheduled for 2007.

Objective 2.4b: Consult with tribal governments, institutions, and other interested parties to ensure the protection and preservation of areas, objects, and records that are culturally important to them.

Following government to government consultation protocol, Forest leadership actively consults with tribal governments regarding proposed Forest Service undertakings. In those instances where heritage site stewardship is a project's primary purpose, the Heritage Program Manager represents Forest Supervisor in initiating such contacts. In 2006, following notification of Heritage project activities, consultation was conducted with the Lac du Flambeau Band, the Forest County Potawatomi, the Menominee and the Lac Vieux Desert Band. Additionally, six tribal governments were invited to participate in the Forest's annual archaeological paraprofessional "refresher" training, and representatives of the Lac Vieux Desert Band, Forest County Potawatomi and the Keweenaw Bay Indian Community participated.

Objective 2.4c: Conduct scientific studies to further our understanding of human adaptation and influences on the landscape and to provide important information for NEPA analysis.

Heritage Program activities in 2006 were generally divided between "Stewardship" and "Support" functions. Support includes the review and analysis of proposed activities such as vegetation management and recreation development, activities that require review under both NEPA and NHPA. Specifically, when a proposed project's "area of potential effect" requires cultural resource survey, strategies for survey accomplishment are formulated and implemented. In 2006, 33,630 acres of CNNF lands were surveyed, bringing the total number of inventoried areas to approximately 1.1 million acres. As a result of these surveys, 44 previously unrecorded heritage resources were documented, increasing the Forest's total to 2,449. NRHP documentation of 21 properties was completed in 2006, and these properties will be formally nominated to the NRHP in 2007. Finally, 128 previously recorded heritage resources were near active project areas, and were monitored to

determine if avoidance measures were sufficient; none of the monitored sites exhibited damage or disturbance.

Volunteers recruited through the “Passport in Time” initiative contributed 1,080 hours towards three projects. The first project, “Archaeological Collections Management,” is an ongoing effort in accessioning and repackaging the Forest’s archaeological collections so that our collection is in good shape and in order. The “Mineral Lake Village” project is another project where volunteers assisted the Forest’s heritage staff to clear and map the archaeological/structural remnants of a late 19th/early 20th century lumber town. Finally, “Photos of the Past” focused on the accessioning and treatment of the Forest’s historic photos. This important activity, multi-year in scope, is resulting in the conservation of thousands of irreplaceable historic photos that would otherwise be destroyed through neglect or mistreatment.

In FY 2006, 13 of the 30 heritage resources designated as MA 8F in the Forest Plan were visited to update their known condition. Additionally, 22 new heritage resources were designated “priority heritage assets” in 2006, and will be nominated for designation as MA 8F.

Objective 2.4d: Increase awareness and appreciation of cultural heritage through educational programs, university-sponsored archeology field schools or other programs.

Raising the public’s awareness of the importance and fragility of heritage resources was accomplished through several activities.

- Volunteers, as mentioned, were recruited to assist in selected heritage stewardship projects.
- Interpretive media was installed at a highly-accessible NRHP property.
- Two press releases were distributed that focused on significant heritage resources.
- Four public presentations focused on the archaeology and history of the CNNF, and the importance of managing and protecting these resources.
- A paper that detailed an archaeological site investigation that took place within the Forest was presented at a regional archaeological conference.

2.5 – Forest Commodities

Objective 2.5: Ensure that harvest levels of special forest products are within sustainable levels.

Sheet moss and princess pine (*Lycopodium* sp.) are two special forest products often gathered to be sold commercially or to be used by hobbyists. An individual is allowed to harvest up to 400 lbs. of either forest product per year, and a fee is charged based upon the amount they wish to collect. Starting in 2007, permittees will be given information about princess pine and sheet moss, including harvesting guidelines and a species identification guide for princess pine. They’ll also be given harvest survey forms to be filled out and mailed back to the CNNF. This survey will collect information on gathering locations, quantity harvested and number of harvesting trips made. The information collected from

permit holders will allow us to better understand the amount of harvesting that occurs, and where we should focus our management efforts to maintain this resource. By using previous monitoring methods to estimate harvest rates, we must assume that each permit holder collects the full amount allowed under the permit (Table 14).

Table 14. Number of permits issued per Ranger District for princess pine and sheet moss during fiscal years 2004-2006.

Ranger District	Princess Pine		
	2004	2005	2006
Medford/Park Falls	1		
Great Divide	2	1	2
Total Permits	3	1	2
Volume Sold (lbs.)	600	200	400

Ranger District	Sheet Moss		
	2004	2005	2006
Medford/Park Falls	11	14	11
Great Divide	10	9	11
Lakewood/Laona	4		6
Washburn	3	1	2
Total Permits	28	24	30
Volume Sold (lbs.)	5600	4900	6100

2.6 – Minerals and Energy Resources

Objective 2.6: Ensure that reclamation provision and environmental protections measures of operating plans and surface use plans of operations are completed to standard in field operations.

During FY 2006 there was no hardrock mineral or energy development or prospecting activity. The current state of the hardrock mineral activity program is the abandonment of existing prospecting drill holes and final reclamation of drill hole sites. During FY 2006 there was no abandonment activity and no final reclamation of drill hole sites. In January of FY07 drill hole abandonment activity will resume and will continue until spring break up. It is not known at this time how many of the remaining 12 drill holes will be abandoned and the final reclamation certified by the WDNR and BLM.

FY 2006 was the first year of implementation of the I-web Mineral Materials data base for the issuing & monitoring of mineral material permits for external use and internal use of sand and gravel resources. Permit operating plans and permit stipulations along with permit inspection requirements insure compliance with DNR storm water permit for gravel pit operations. Permit inspections are recorded in the I-web Mineral Materials data base.

Pit management plans are written for each gravel pit to ensure adequate utilization of the resource, safety, and mitigation of impacts on surface resources; in FY 2006, 14 pit management plans were updated and/or completed. To control NNIS, gravel pits are surveyed and infestations are treated. In FY 2006, 46.8 acres of NNIS were treated through the pit management plans. Additionally, trees are planted to reduce the potential habitat for NNIS, the need for NNIS treatment activities, and the impacts from off-road vehicles. In FY 2006, site preparation began for tree planting reclamation at two gravel pit sites (totaling 4 acres), and trees will be planted next year.

2.8 – Fire Management

Objective 2.8a: The safety of employees and the public is the highest priority during any fire or fuels management incident.

Although large catastrophic fires rarely occur in our region of the country, fires on the CNNF are relatively common and require an immediate and organized response to minimize their severity. There are two general categories of fire that regularly occur on the CNNF: prescribed and wildfire. While combating both types of fire, safety of CNNF employees and of the public is the highest priority.

Prescribed burning: The CNNF extensively promotes and implements safety as it relates to prescribed burning and wildfires. The forest has had no prescribed fires escape from control this year. Burn plans are painstakingly developed that follow Forest, Region and National direction. Prior to and after implementation of the action, each burn is fully reviewed and complete briefings are conducted to assess any possible means for improvement.

Wildfire: Under the Thirty Mile Plan, the U.S. Forest Service requires each unit to review their response to wildfire each year. These reviews are to be conducted by the Line Officer, Forest Fire Staff Officer and/or the Forest Safety Officer. Under this requirement, 10% of the CNNF wildfire responses were reviewed for adequate safety measures during FY 2006. The inspected fires were Anderson Lake, Wabigon Lake, Emily Lake, Twin Lakes, Chickadee and Loon Fires. No safety inadequacies were identified.

Objective 2.8b: Expedite safe extinguishments of wildfires by the use of ground and/or air resources.

Safety is our top priority on the forest. The forest Fire Staff Officer received no reports of any safety violations this year, which is typical on the CNNF. A good portion of our strong safety record can be attributed to the repetitive academic training, refreshers, fitness training, and policy and procedures being adhered to. All fire personnel are encouraged to immediately report any and all safety violations.

The forest had 68 fires during FY 2006, totaling 202 acres. The size of these fires range from 0.1 acre to over 80 acres, with the average size fire held to under 3 acres. The main cause of wildfires has been human caused (burning brush, leaves etc).

Objective 2.8c: Reduce hazardous fuels within communities at risk, in cooperation with local, Federal, and State agencies.

The “Communities at Risk List” is a major component of the National Fire Plan that identifies areas where people and their property are most endangered by the threat of wildfire. The CNNF is in an ongoing process working closely with the WDNR to upgrade the federal register’s list of Communities at Risk. During FY 2006, 1,122 acres of hazardous fuels reduction in the wildland urban interface area was accomplished. We are also working towards an upgraded map to identify high risk fire areas that will help focus hazardous fuels mitigation work. This map should be completed in the fall of 2007.

Objective 2.8d: Apply fire management as part of natural ecological disturbance regime.

Prescribed fire can serve as an effective land management tool. For example, on the CNNF, it can be employed to combat the spread of NNIS, and to help maintain forest openings in fire-adapted ecological communities like the Moquah Barrens. There were 3,211 acres of prescribed burning for ecosystem restoration accomplished on the CNNF during FY 2006. The objectives of these burns have been associated with hazard fuels reduction, wildlife habitat improvements, restoration, and timber site prep/reforestation. The Forest continues to identify areas needing treatment by the means of prescribed fire.

2.9 – Treaty Rights

Nothing in the Forest Plan or its implementation is intended to modify, abrogate, or otherwise adversely affect tribal reserved or treaty guaranteed rights applicable within the CNNF. The Tribal MOU (that is, the Memorandum of Understanding regarding tribal – USDA Forest Service relations on National Forest Lands within the territories ceded in treaties of 1836, 1837, and 1842) has been in place for over five years and is running smoothly. Many projects have been put into place through the process laid out in the MOU without notable instances of complications. Consultations under the MOU in FY 2006 include issues such as notification of birch bark gathering opportunities, and experimental scarification to enhance birch tree regeneration.

Goal 3 – Ensure Organizational Effectiveness**3.3 – Public and Organization Relations**

Objective 3.3a: Consult with Tribes and intertribal agencies during decision-making processes. Consider effects of natural resource management decisions on the ability of tribes to exercise gathering rights. Site-specific project analyses address how project proposals might protect or impact the ability of tribes to exercise gathering rights.

To ensure recognition of tribal treaty rights, all activities conducted by the CNNF must consider the Tribes' ability to exercise gathering rights, which are both protected by and impacted through project implementation. For example, the decommissioning of roads may affect the ability of tribal elders to gather. As required by law, consultation on project level activities occurred during FY 2006 at various times and with varied degrees of success. Consultation included those tribes with ceded territory rights and those not signatory to the treaties of 1836, 1837 and 1842 but maintaining an interest on lands within the proclamation boundary of the CNNF.

Objective 3.3c: Cooperatively work with federal, state, and county agencies and other non-governmental organizations to control NNIS.

One theme common to all National elements is partnerships, which is an avenue through which the CNNF has been particularly effective. In 2006, CNNF set in motion organization of the Upper Chippewa Invasive Species Cooperative in Price, Sawyer, Taylor, and Rusk Counties, which plans to have an MOU in 2007. Additionally, the Northwoods Cooperative Weed Management Area (NCWMA) will share resources and jointly pursue grant opportunities aimed at controlling NNIS in Ashland, Bayfield, Douglas, and Iron counties. Twenty-two participating agencies, tribes, and organizational members formally signed an MOU in 2006. The group's mission is to "encourage and formalize the cooperative relationship necessary for effective management, coordination and implementation of invasive terrestrial and aquatic plant species programs among the participating organizations."

Objective 3.3d: Cooperatively work with federal, state, and county agencies and non-governmental organizations to integrate fire prevention programs and suppression resources. Cooperatively work across agencies to develop and implement hazardous fuels reduction projects that will reduce the risk of wildfire.

The CNNF is heavily involved with other state and federal partners; this includes all aspects of fire management such as prevention, suppression, training, fuels, etc. The fire program has written partnership agreements with the following agencies: National Park Service, Bureau of Indian Affairs, Menominee Tribal Enterprises, Fish and Wildlife Service, Bureau of Land Management, National Weather Service, and the WDNR. Two years ago we developed a Wisconsin Interagency Wildfire Council (WIWC) made up of 7 agencies (six federal and one state agency) from Wisconsin. WIWC is becoming a great success, and June 12 – June 16, 2006 was the first ever Wisconsin Wildfire Academy. This academy is in partnership with North Central Technical College in Wausau, WI. Nearly all of these agencies have been involved in one or more of our prescribed burns during FY 2006. The CNNF, WDNR and local fire departments commonly share equipment and personnel and support each other on wildfires throughout the year.

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So many CNNF employees are routinely involved in monitoring the activities of the CNNF that each individual could not be listed. The primary author of the Monitoring Report was the CNNF Monitoring Coordinator, Ben Frater. The following staff directly contributed many of the words, figures, details and expertise necessary for this multi-disciplinary effort:

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