

Chapter 1. Introduction

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This Subsection Forest Resource Management Plan (SFRMP) process considers forestlands administered by the Department of Natural Resources (DNR) Divisions of Forestry and Fish and Wildlife in the Aspen Parklands Subsection (AP). This Subsection covers approximately 2.9 million acres in an area from near Gully in the southeast to Roseau in the northeast, and from Lancaster in the northwest to Crookston in the southwest (See Map 1.1).

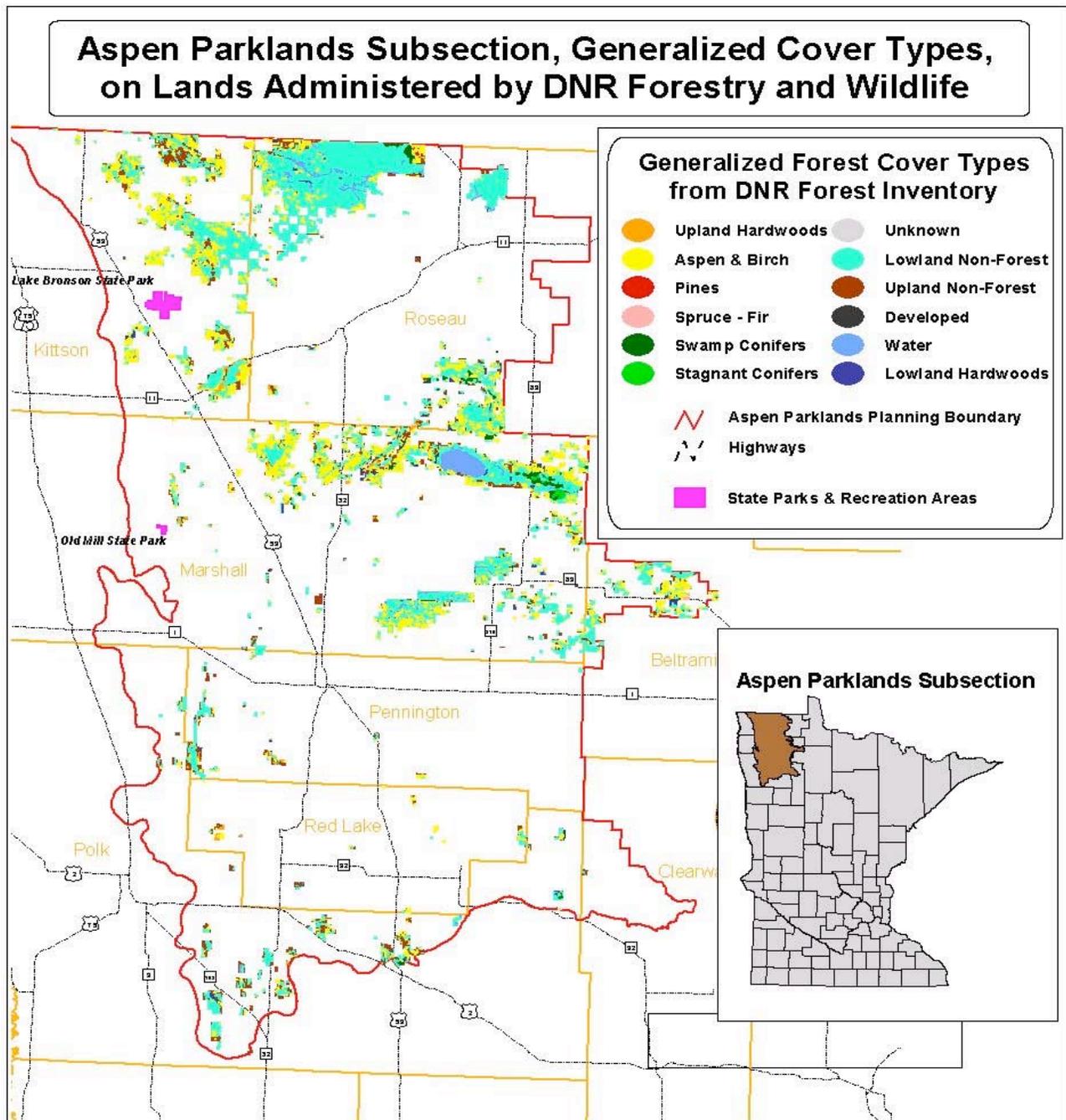
1.1 Planning area description

Agriculture and recreation are the major uses of land in this Subsection. Public agencies (state and federal) administer 16 percent of the land in the Subsection, with the state portion being 12 percent or 355,000 acres. Approximately 95,000 acres of DNR Forestry and Wildlife land is forest and woodlands that are considered for the resource management objectives in this plan. Other cover types totaling 250,000 acres are non-forested and may be considered for biomass harvesting to meet resource management objectives in this planning effort. Other state lands (totaling approximately 9,000 acres) such as state parks and Scientific and Natural Areas (SNAs) are not considered for resource management under this plan. However, these areas do contribute to some of the plan's goals.

As shown on Table 1.1 and Figure 1.1, the federal government owns 2 percent (68,000 acres) of the lands in the Subsection that are managed by the U.S. Fish and Wildlife Service including Agassiz National Wildlife Refuge, Glacial Ridge National Wildlife Refuge and numerous Waterfowl Production Areas (WPAs). Kittson, Marshall, Red Lake, Roseau, Pennington and Polk counties own and manage less than one percent of these lands (24,000 acres). Private lands comprise 83 percent (2.4 million acres), of this The Nature Conservancy (TNC) owns approximately 1 percent (40,000 acres) of the private lands in the Subsection. There is no industrial forest land in the Subsection.

Map 1.1, on the next page, details the cover types that exist on state administered lands in the AP Subsection.

Map 1.1. Aspen Parklands Subsection generalized cover types on lands administered by DNR Divisions of Forestry and Fish and Wildlife.



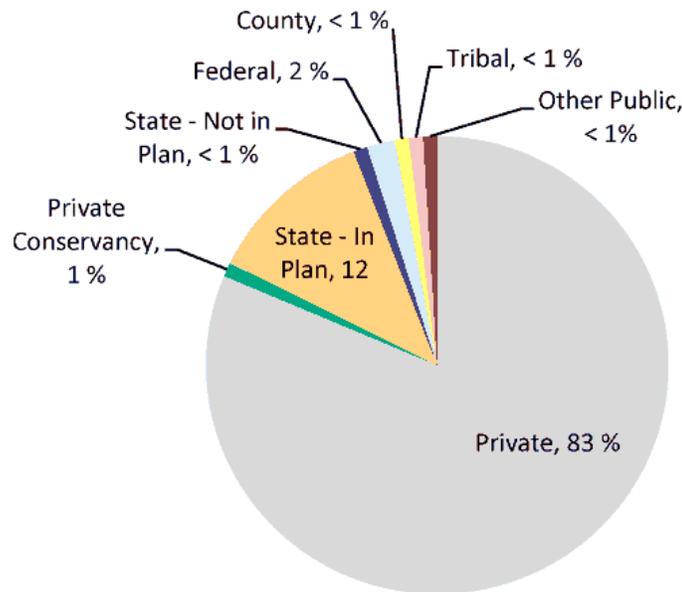
Note: The maps have been reduced and printed in grayscale in this document. It is recommended that these maps be viewed at a larger scale and in color. The colored maps and this report can be viewed at:

<http://www.dnr.state.mn.us/forestry/subsection/aspenparklands/plan.html>

Table 1.1. Land ownership in the AP Subsection – total acres¹.

Ownership	Acres	Percent of total land base
Private ²	2,382,000	83%
Private – Conservancy ³	40,000	1%
State lands included in the plan	344,000	12%
State lands - Forestry	7,000	<1%
State lands - Wildlife	337,000	12%
State lands excluded from the plan ⁴	9,000	<1%
Federal	68,000	2%
County ⁵	24,000	<1%
Tribal	4,000	<1%
Local government ⁶	<1,000	<1%
Total	2,873,000	100%

Chart 1.1. Land ownership percentages in the AP Subsection.



¹ Source: 1976 to 1998 Minnesota DNR GAP Stewardship---“All Ownership Types” data. Includes all lands administered by units of DNR including Forestry, Section of Wildlife, Section of Fisheries, Parks and Trails, and Ecological and Water Resources. This SFRMP only covers Forestry and Section of Wildlife administered lands. All acres in the table have been rounded to the nearest thousand.

² Private – Includes all private land except for Private Conservancy land listed separately.

³ Private -- Conservancy Lands: The Nature Conservancy

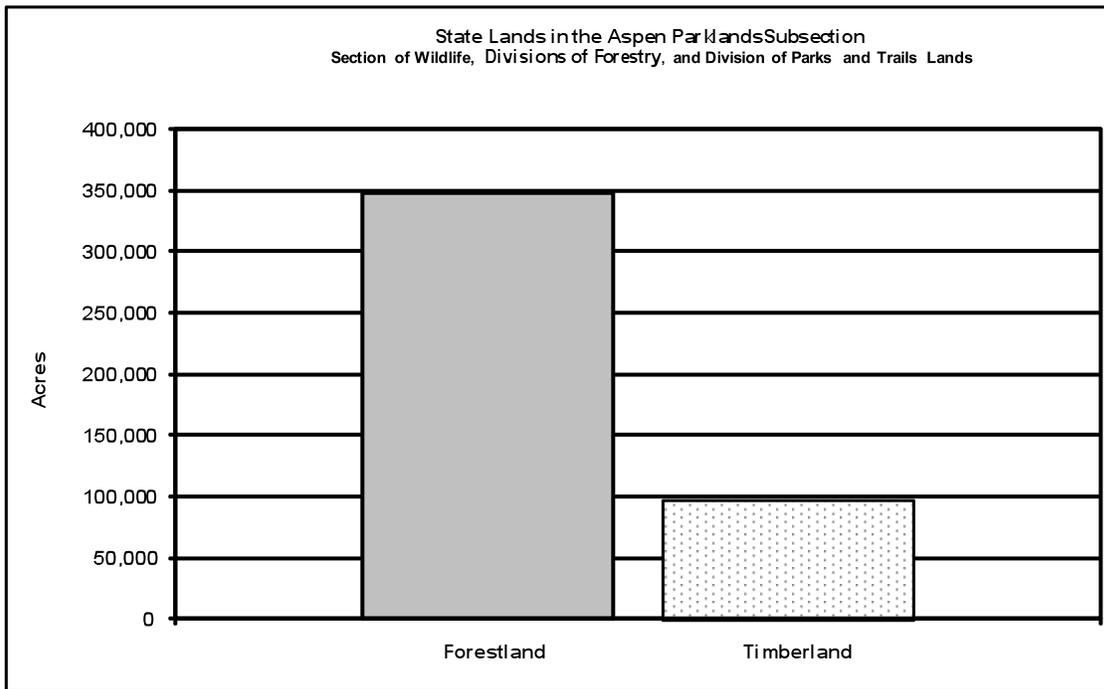
⁴ State lands excluded from plan – Scientific and Natural Areas, Parks and Trails, Department of Transportation, Section of Fisheries, and Division of Ecological and Water Resources.

⁵ County includes both County Fee and County Administered State Owned lands.

⁶ Local Government– Independent School Districts and City Ownerships.

Based on the Gap Analysis Program (GAP) classification completed by the DNR Division of Forestry using satellite imagery of all lands in the AP, 3.3 percent of the land area (non-water) is covered by forest. Based on the DNR forest inventory data of timberland that will be considered in this plan, aspen/balm of Gilead cover types comprise 85,160 acres or 89 percent of the timberlands total. Non-forested brushland, wetlands, and grasslands comprise 250,000 acres or 73 percent of the AP’s land area under state ownership.

Figure 1.1. State forestlands and timberlands in the AP Subsection.



Forestland consists of all DNR administered lands included in the forest inventory from aspen to stagnant conifers, muskeg, lowland brush, and lakes. *Timberland* includes those cover types that are capable of producing merchantable timber and are available for timber management, meaning they are not withdrawn from management based on land administrator or by reserved status such as old growth. Timberlands represent about 27 percent of the total forestland (all ownerships) in the AP. State lands reserved from harvest such as designated old-growth stands, SNAs and State Parks (1,575 acres) are not included in Timberlands.

Note: Due to updates to the forest inventory and other data sources during the planning process, there may be slight differences in acreages shown between various tables and figures in this planning document. These differences will not have a significant effect on the recommendations in this plan.

1.2 Scope of Subsection Forest Resource Management Plan

Subsection Forest Resource Management Plan

A SFRMP is a DNR plan for vegetation management on forest lands administered by the DNR Divisions of Forestry and Fish and Wildlife. Vegetation management includes actions that affect the composition and structure of forest lands, such as timber harvesting, thinning, prescribed burning, and reforestation. The geographic area covered by these plans is defined by Ecological Classification System (ECS) subsections. In response to growing public interest in DNR timber management planning, the DNR SFRMP process was developed to provide a more standardized, formal process and opportunities for increased public involvement. In addition, it is based at the subsection level of the DNR's ecological classification system rather than DNR administrative areas as in the past (i.e., DNR Forestry Area boundaries). The SFRMPs do consider the condition and management of forest lands not owned by the DNR, but only propose forest management direction and actions for DNR lands.

Consistent with state policy (Minnesota Statutes 89A), the SFRMP process pursues the sustainable management, use, and protection of the state's forest resources to achieve the state's economic, environmental, and social goals.

The SFRMP planning process is divided into four steps. In Steps 1 and 2, the subsection Planning Team prepares information to assess the current forest resource conditions in the subsection and identify forest resource management issues that will be addressed in the subsection plan. In Step 3 (preparation of the Draft AP SFRMP), the subsection Planning Team finalizes the issues and develops general directions and strategies to address these issues. The strategies will help in developing cover type management recommendations, stand selection criteria, stand treatment levels, 10-year stand exam, and new access needs lists. The Planning Team also prepares the 10-Year Stand Exam List and New Access Needs List.

Step 4 (Final AP SFRMP) is preparation of the final plan following public review of the draft plan, and incorporating changes resulting from comments received.

There are two opportunities for public input during the SFRMP process. First, in review of the *Preliminary Issues and Assessment document*⁷; and second, review and comment on the Draft AP SFRMP which includes vegetation management strategies, desired future forest composition, and the 10-year stand exam and new access needs lists.

ECS subsections

The DNR has developed an ECS as a tool to help identify, describe, map, and manage ecosystems (see *Appendix A: Ecological Classification System*). ECS units are defined by climatic, geologic, hydrologic, topographic, soil, and vegetation data. The DNR ECS divides the state into six levels of ecological units, each level nested together within the next higher

⁷ Minnesota DNR, September 2009, *Preliminary Issues and Assessment*, Subsection Forest Resource Management Plan. A copy can be found at:

http://files.dnr.state.mn.us/forestry/subsection/aspenparklands/prelim_issues_assess.pdf

level. Subsections are the third level down in the ECS hierarchy in Minnesota. There are 17 forested subsections in the state, ranging in size from 339,285 to 3,657,011 acres.

Goals for the planning effort

While the planning process will produce many tangible “products,” such as assessment information, issues, and strategies, the end result of the planning process will be two key products:

- **Desired Future Forest Composition (DFFC) goals:** The goals include long-term (50 years or more) and short-term (10-years) desired changes in the structure and composition of DNR forestlands in the Subsection. Composition goals include the amount of various cover- types, age-class distribution of cover types, and their geographic distribution across the Subsection. DFFC goals for state forestlands are developed from assessment information, issues, the general direction identified in response to the issues, and strategies to implement the desired management direction.
- **List of DNR forest stands to be examined for treatment over the next 10-year period.** SFRMPs identify forest stands on lands administered DNR Divisions of Forestry and Fish and Wildlife administered lands that are proposed for treatment (e.g., harvest, thinning, regeneration, and re-inventory) over the 10-year planning period. Forest stands are selected using criteria developed to begin moving DNR forest lands toward the long-term DFFCs. Examples of possible criteria include stand age and location; soils; site productivity; and size, number, and species composition. Many decisions and considerations go into developing these criteria and the list of stands proposed for treatment. Examples include:
 - 1) Identifying areas to be managed as older forest or ERF;
 - 2) Identifying areas to be managed at normal rotation age (NRA);
 - 3) Identifying areas for various sizes of patch management;
 - 4) Management of riparian areas and visually sensitive travel corridors;
 - 5) Age and cover type distributions; and,
 - 6) Regeneration, thinning, and prescribed burning needs.

Decisions will be made based upon the management activities (including no action) that will best move the forest landscape toward the DFFC goals for state forest lands.

Who develops SFRMPs?

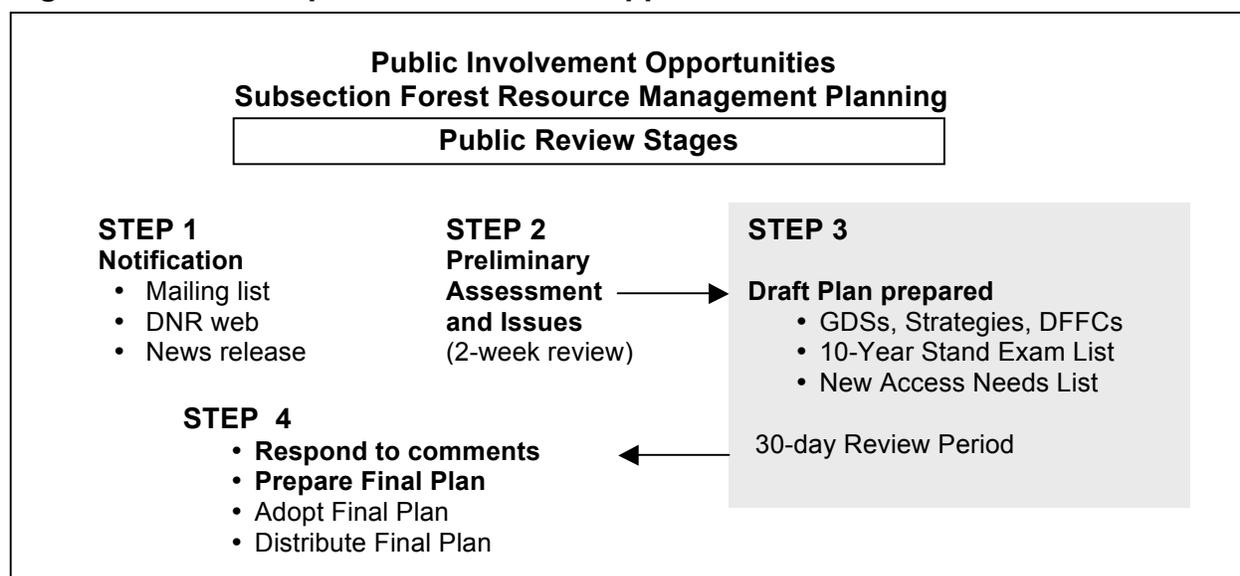
SFRMP Planning Team members include staff from the DNR Divisions of Forestry, Fish and Wildlife, Ecological and Water Resources. A list of team members who were involved with drafting of the SFRMP is included at the end of this chapter. These Planning Teams have primary responsibility for the work and decision making involved in developing the subsection plans. Decision-making by the team is through an informed consent process. Managers of adjacent county, federal, tribal, and industrial forestlands may be invited to provide information about the condition of their forest lands and future management directions. As much as possible data relating to all ownerships are used in the planning process.

1.3 SFRMP Process Overview

Table 1.2 outlines the steps in the DNR SFRMP process. This SFRMP is currently finishing step 3. Figure 1.2 shows the opportunities for public involvement during the SFRMP planning process.

Table 1.2. SFRMP process overview.

Step 1	Initiating the Planning Process <ul style="list-style-type: none"> • DNR forms interdisciplinary team for the subsection(s). • DNR staff assembles base assessment information. • Web page is established for the subsection on the DNR Web site. • DNR develops mailing list of public/stakeholders. • Public is informed that the planning process is beginning in the subsection, the estimated schedule for the planning process, and how and when they can be involved.
Step 2	Preliminary Assessment and Issue Identification <ul style="list-style-type: none"> • Subsection team adjusts and supplements the base resource assessment information for the subsection. • Team identifies the preliminary issues to be addressed in the plan. • DNR distributes assessment information and the preliminary issues for public review and input.
Step 3	SFRMP Draft Plan Including: Strategies, Desired Future Forest Composition, and Stand Selection Criteria <ul style="list-style-type: none"> • DNR finalizes the list of Issues to be addressed in the plan based on public input from Step 2. • Subsection Team develops General Direction Statements (GDSs) in response to the final list of Issues. • Subsection Team and work groups develop Strategies and Desired Future Forest Composition (DFFC) goals consistent with the general direction. • Team develops stand selection criteria to help identify DNR forest stands for treatment over the 10-year planning period to move toward the DFFC goals. Draft List of Stands to be Treated and New Access Needs <ul style="list-style-type: none"> • DNR staff identifies state forest land stands to be considered for treatment over the 10-year planning period. • DNR staff identifies road access needs associated with the list of stands proposed to be treated. • Draft AP SFRMP and draft list of stands to be treated and road access needs are distributed for public review and comment.
Step 4	Final Plan <ul style="list-style-type: none"> * Subsection Team summarizes public comments and develops DNR responses. * A summary of comments, responses, and plan revisions are presented to the department for commissioner’s approval. * Commissioner approves final plan. * Final Plan is distributed, including summary of public comments and DNR responses.

Figure 1.2. SFRMP public involvement opportunities.

1.4 Contents of the Aspen Parklands SFRMP

This plan contains products developed by the AP SFRMP Team for public review as part of Step 3 in the planning process. These products include the final list of issues addressed, general direction statements (GDSs) and strategies to address the issues, desired future forest composition (DFFC) goals, stand selection criteria, cover type management recommendations, responses to public comments received from the *Preliminary Issues and Assessment* document, and the 10-year stand exam lists and new access needs lists.

In Step 2 of the process, the AP Team identified a preliminary list of Issues to be addressed in the plan. These Issues were developed based on the general field knowledge of department staff and forest resource information assembled by the team in the *Preliminary Issues and Assessment* document. The preliminary list of issues was distributed for public review and comment in September 2009. The preliminary list of issues was revised based on input from DNR staff and the public. This revised list of issues is presented in Chapter 2 of this plan as the final list of issues that have been addressed in the AP plan.

In Step 3, the AP Team, working with technical work groups, developed GDSs and strategies and DFFCs to address the final list of Issues. DFFC goals are most commonly expressed in terms of desired changes in the age-class structure, the amount of various forest types within the Subsection, and the geographic distribution of forest types and age-classes across the Subsection. The GDSs, strategies and DFFCs developed by the work groups are based on existing DNR policies/mandates, technical expertise from within and outside the Planning Team, forest resource information from the *Preliminary Issues and Assessment* document and other sources, and public input from Step 2 of the process. Strategies developed to address the various Issues were then examined to identify and group similar strategies, and to resolve strategies that might be contradictory. A list of the GDSs and DFFCs that were developed for the AP SFRMP is presented in Chapter 3 of this plan.

GDSs, strategies, and DFFC goals were used to develop cover type management recommendations as presented in Chapter 4 of this plan. These cover type management recommendations define proposed criteria to select a pool of forest stands for treatment over the 10-year planning period as identified in Step 3. Stand selection criteria can include: normal rotation ages (NRA) (i.e. ages at which most forest stands will be harvested); extended rotation forest rotation ages (i.e. ages at which stands designated for older forest management will be harvested); potential productivity of the site for timber (i.e., site index); soil types; stand density, or stocking measures (e.g., basal area); tree species composition; brush and ground cover; stand size; stand location; insect and disease occurrence; and other specific criteria needed to address issues. Stand selection criteria presented in the AP Plan are those identified by the AP Team as best moving DNR forest lands toward the identified DFFC goals for the AP.

The AP Team summarized and developed responses to public comments received during Step 2 of the overall SFRMP planning process. These responses are included in Chapter 5 of this plan.

1.5 Monitoring of SFRMPs

As this Subsection plan is implemented, monitoring of forest management activities is critical to achieve the goals of the AP SFRMP Plan. Many DNR forest management activities are currently tracked, such as cover type acres treated; treatment methods and acres; timber volumes sold and harvested; and regeneration methods, species, and success. However, some management activities and objectives are not readily tracked, such as stand composition changes. Monitoring of forest activities includes both site-level monitoring ((*MFRC Voluntary Site-Level Forest Management Guidelines*⁸) (*MFRC Site-Level Guidelines*)) and landscape-level monitoring (forest management consistent with the goals of the AP SFRMP Plan).

Each year as Annual Stand Exam Plans are developed from the Subsection plan, the Divisions of Fish and Wildlife and Ecological and Water Resources will provide input to The Division of Forestry regarding selection of stands and stand treatments. The Annual Stand Exam Plans developed by each Forestry Area are based on the state's fiscal year, July 1 – June 30. These annual harvest plans are typically prepared and cruised during the fall and winter months leading up to the start of the fiscal year. During development of the AP SFRMP Stand Exam List and also during each Forestry Area's identification of their Annual Stand Exam Lists other Divisions are provided an opportunity to identify stands where they would like to participate in a joint field visit/stand evaluation. These joint visits allow all Divisions to affect the stand prescriptions applied and stand management objectives. These review opportunities are also provided for annual plan additions (i.e., stands added during the year due to windthrow salvage, new information about a stand, etc.). A public review process is included for both the annual plans and additions.

Approximately one-tenth of the stands selected for treatment, as identified in the AP SFRMP, will be field visited each year during the 10-year plan period. Final stand treatment prescriptions will be determined after the field visit/stand examinations are completed. Prescriptions and objectives assigned to stands during the AP SFRMP planning process are

⁸ Minnesota Forest Resources Council. 2005. *Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines for Landowners, Loggers and Resource Managers*. St. Paul, MN. 615pp.

preliminary and may be adjusted based on current stand conditions and other information and input at the time of the stand examination.

Following timber sales or after forest development projects are contracted, Forestry staff administer timber harvest permits, forest development projects (e.g., site preparation and tree planting), and road projects as the work is completed. Forestry staff regularly monitors these activities to ensure that permit regulations and contract specifications are being met. In addition, standardized timber sales inspections are completed on at least 10 percent of active timber sales each year. The application of *MFRC Site-Level Guidelines* (e.g., riparian management zone guidelines) is monitored during permit and contract supervision and inspections. Wildlife habitat projects that are conducted on state lands will also contribute to plan goals. These projects will be administered, recorded, and monitored by Section of Wildlife staff.

In addition to Division of Forestry monitoring, the MFRC site-level monitoring program will also periodically sample sites in this Subsection as part of its overall statewide monitoring program. The objective of this statewide monitoring program is to evaluate the implementation of the *MFRC Site-Level Guidelines* through field visits to randomly selected, recently harvested sites across the various forest land ownerships (state, county, national forest, tribal, forest industry, non-industrial private lands, etc.). The monitoring results from sites on state lands in this Subsection will be used to determine implementation of the *MFRC Site-Level Guidelines*.

To monitor landscape-level forest management by DNR against the goals of the AP SFRMP, two types of monitoring questions will be addressed:

1. Implementation Monitoring, which determines whether the management actions are being implemented as written in the AP SFRMP, meaning:

Are management actions being carried out in a manner that is consistent with the AP SFRMP? and,

2. Effectiveness Monitoring, which determines the appropriateness or effectiveness of specific management actions designed and implemented to accomplish specific objectives identified in the AP SFRMP, meaning:

Are management actions having the desired on-the-ground effect?

It is often not possible to see the results of prescriptions and objectives assigned to stands, for many years. Many of the treatments assigned to stands in this plan may not be accomplished until after the 10-year plan is over. Some reasons are:

- 1) A portion of the stands identified for treatment won't be field -examined (and for many, offered for sale) until late in the 10-year planning period;
- 2) The harvest of timber sales occurs up to five years after the sale date;
- 3) Forest development activities may be needed to regenerate the site to the desired species after the timber sale harvest is completed;
- 4) Desired structural changes in stands may take many years or decades to occur;
- 5) Forest inventory data may not capture the forest stand composition components or changes for many years or capture it at all; and,
- 6) Desired conversions may take multiple treatments to complete.

Because of this, preliminary stand-management objectives (see *Appendix G: SFRMP Additional Field Names and Codes*) have been developed to record the intent or objectives of stand treatments. Preliminary objectives may be assigned to some stands during the SFRMP process to provide preliminary guidance for the appraiser to consider during the on-site stand evaluation. Final objectives will be assigned after the stand examination/appraisal for a timber sale or other treatment is completed. The assignment of objectives to stands allows recording of the various stand treatments on an annual basis to assist in monitoring the implementation of the AP SFRMP. This will help determine if strategies are being applied and if management objectives and goals are being met.

A significant portion of the data needed to monitor plan implementation and effectiveness will be collected from existing databases. Other data, especially those relating to effectiveness of management actions, are more difficult to obtain.

The following data sources and existing forestry management tools will be used to implement AP monitoring:

1. Forest Inventory Module (FIM):

The primary source of information about the current condition of DNR forest lands is the Forest Inventory Module. FIM is a stand-level forest inventory. A stand is a contiguous group of trees similar in age, species composition, and structure; and growing on a site of similar quality, to be declared a distinguishable forest unit. A forest is comprised of many stands. FIM captures essential information about every forest stand on more than four million acres of DNR forest land. It is the basic data set from which decisions are made about if, when, where, and in what manner DNR forest stands will be treated. Information gathered includes overstory and understory tree species, stand age, timber volumes, site productivity, shrub and ground species, insects and diseases, and other specific site conditions. Native plant community (NPC) classification will be captured on stands for which evaluations have been completed.

2. Silvicultural and Roads Module (SRM):

The Silviculture and Roads Module enables foresters to plan and record management objectives and actions on state lands. An SRM site is the piece of land for which the manager has developed a prescription (i.e., a series of actions). The site may be a FIM stand, part of a stand, or more than one stand. SRM allows for multi-year prescriptions for sites to manage the site for a specified objective. The site prescription consists of all the actions prescribed for a site to obtain a desired future condition. Actions include all the timber harvesting, site prep, planting, and seeding, timber stand improvement (TSI), and regeneration survey work needed to manage a stand for a specified objective. This long-range schedule and record of completed work helps track management activities, obligations, and management objectives. It is the foundation for budget requests and work plans.

3. Timber Sales Module (TSM):

The Timber Sales Module includes the following functions: timber sales reporting, supports the appraisal and sale of timber harvest permits, tracking security provided by permit holders, accounting for harvested timber, and collecting revenue.

4. AP Stand Exam List Shapefile:

The SFRMP shapefile includes FIM stand data for all state-administered forest lands in the subsection plans. Subsection boundaries may have been slightly adjusted to avoid splitting of stands for consideration of access, etc. Therefore, the SFRMP subsection shapefile boundaries may be somewhat different than the original ECS subsection shapefile.

In addition to the standard FIM data fields, the SFRMP shapefile includes fields added during the planning process to identify stands for specific purposes (e.g., ERF, ecologically important lowland conifer (EILC), patches, preliminary objectives, new access data, and stand-selection fields). This will make it possible to create a statewide shapefile and provide a uniform set of fields for importing into SRM, posting on the DNR data resource site (DRS), reporting, and monitoring purposes.

5. Annual Harvest List and Annual Plan Additions Shapefiles:

Annual Harvest Lists and Plan Additions are drawn from SFRMP shapefiles and include additional information (including prescription, treatment acres, etc.). Adjustments can be made to add or remove stands, revise comment fields, or change joint visits (etc.).

6. DNR Data Resource Site (DRS):

The Data Resource Site (DRS) is a standardized collection of GIS data, metadata and programs. A DRS is a place where geographic information system (GIS) resources are stored and made available to the users. The layers available on the DRS are designed such that use by DNR staff is intuitive and efficient. Many layers have been converted to shapefiles that are statewide in extent and targeted to a specific piece of information.

7. Internal Assessments and Inventories:

Data from existing and pending assessments and inventories conducted by the Divisions of Ecological and Water Resources and Fish and Wildlife will be used. Examples of possible data sources include: wildlife population surveys (ruffed grouse, deer, goshawk, red-shouldered hawk, etc.); harvest reports; and water sampling results (impaired waters).

8. External Assessments and Inventories including resource management information, studies, and surveys conducted by other stakeholders.

9. Imagery available through the Division of Forestry, Resource Assessment Center.

Sampling of sites:

Because so much of the monitoring data comes from the SRM database, it is important to attempt to validate the accuracy of SRM data entry and consistency between the site objective and vegetation conditions (incorporating both implementation and effectiveness monitoring). The SFRMP Process Work Group will develop a method of site sampling (number of sites, site selection, techniques, etc.), emphasizing the application of existing survey tools/efforts such as timber sale inspections and regeneration surveys to gather validation data.

Baseline data:

Every effort will be made to identify baseline data for each indicator. The subsection assessments done at the beginning of the planning process contain all or most of the necessary data. Some indicators are tracked as a frequency or occurrence, for which there was not prior record keeping (e.g., the number of treatment deferrals). Although most pre-plan implementation data is lacking, data will be recorded annually so trend information during the plan's time frame will be available.

Data collection, analysis and interpretation:

Data from the SRM and FIM databases, and GIS shape files (primarily for implementation monitoring) will be collected periodically during the life of the plan. Effectiveness monitoring data will be collected and compiled at a mid point and at the end of a plan's time frame. This information will be provided to the subsection team for interpretation and analysis as the basis for preparing the landscape level monitoring of implementation of the AP Plan.

Data is entered into the FIM, SRM, and TSM continually. Fiscal year entries must be completed by September 1 of the following year. Data for the previous fiscal year can be extracted anytime after September. Plan shape files and DRS files are continually available.

For more information on monitoring of SFRMPs, please visit the DNR's SFRMP web page at:

<http://www.dnr.state.mn.us/forestry/subsection/index.html>

1.6 DNR staff involved in developing the AP SFRMP

AP SFRMP team members:

Doug Franke (AP Team leader), Area Wildlife Supervisor, Thief River Falls
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Joel Huener, Assistant Area Wildlife Supervisor, Thief Lake WMA
Dawn Torrison, Assistant Area Wildlife Supervisor, Roseau River WMA
Terry Wolfe, Area Wildlife Supervisor, Crookston
Ross Hier, Assistant Area Wildlife Supervisor, Crookston
Jon Drimmel, Timber Program Forester, Bemidji
Jana Albers, Forest Health Specialist, Northwest Region