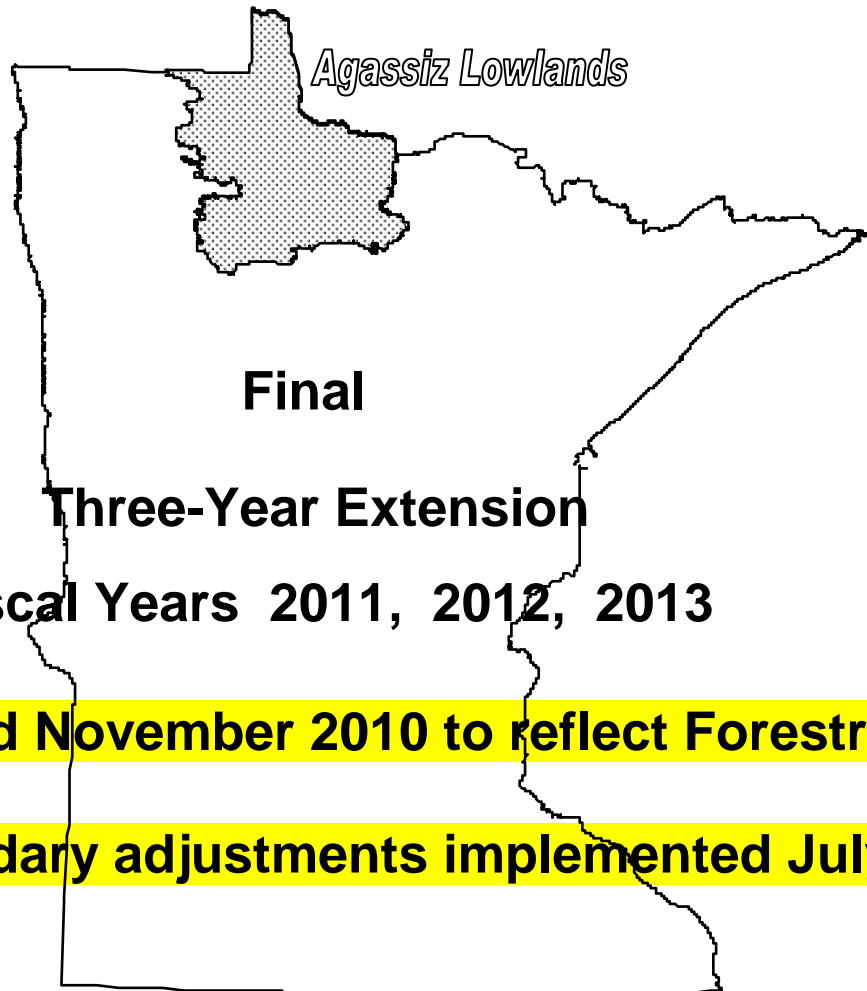


Agassiz Lowlands Subsection Forest Resource Management Plan



Minnesota Department of Natural Resources
June 2010

Division of Forestry Planning Document

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This document is on the Department of Natural Resources web page at:

http://files.dnr.state.mn.us/forestry/subsection/agassiz/sfrmp_agassizLowlands_3yrExtensionFinal.pdf

Information about the Division of Forestry Subsection Forest Resource Management Plan (SFRMP) process can be found at www.dnr.state.mn.us/forestry/subsection.

Agassiz Lowlands

Subsection Forest Resource Management Plan

Three-Year Extension

Final Extension Document

Abstract

This document summarizes the results of an extension of the Agassiz Lowlands SFRMP (formally adopted February 2008). This Extension continues all significant management objectives identified in the Agassiz Lowlands SFRMP and outlines the process used to identify Forestry Area Stand Exam Lists for Fiscal Years 2011, 2012 and 2013. To develop this Extension, updated treatment models were applied to an updated forest inventory. This document identifies the process used to select stands and identifies the complete list of stands selected to be examined for treatment over the three-year extension period.

This Agassiz Lowlands Subsection Forest Resource Management Plan Three-Year Extension document and the Three-Year Stand Exam List can be viewed:

http://files.dnr.state.mn.us/forestry/subsection/agassiz/sfrmp_agassizLowlands_3yrExtensionFinal.pdf

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Chapter 1 Introduction

1.1 Scope of Subsection Forest Resource Management Plan (SFRMP)

A SFRMP is a DNR plan for vegetation management on forestlands administered by the Minnesota Department of Natural Resources (DNR) Divisions of Forestry, and Fish and Wildlife. Vegetation management includes actions that affect the composition and structure of forestlands, such as timber harvesting, thinning, prescribed burning, and reforestation. In response to growing public interest in DNR timber management, the DNR SFRMP planning process was developed to provide a more standardized, formal process with opportunities for increased public involvement. The geographic area covered by this plan extension is defined by Ecological Classification System (ECS) subsections, rather than DNR Forestry Area boundaries. The SFRMPs do consider the condition and management of forest lands not owned by the DNR, but proposes forest management direction and actions for DNR managed lands only.

1.2 What Is an ECS Subsection?

The DNR has developed ECS as a tool to help identify, describe, and map ecosystems. ECS units are defined by climatic, geologic, hydrologic, topographic, soil, and vegetation data. The ECS divides the state into six levels of ecological units, each level nested together within the next higher level. In Minnesota, subsections are the third level in the ECS hierarchy. There are 17 forested subsections in the state, ranging in size from 1 to 3 million acres. The working boundaries used to prepare SFRMPs vary slightly from the boundaries of ECS subsections to be consistent with actual Forestry Area administrative boundaries.

1.3 Background: Agassiz Lowlands SFRMP and Three-Year Extension

On February 25, 2008 the DNR Commissioner approved the Agassiz Lowlands Subsection Forest Resource Management Plan (AL SFRMP). This officially completed the planning process that began in 2002. Although formally adopted in 2008, actual completion of the AL SFRMP Strategic Directions and Seven-Year Stand Exam List occurred in 2004 following two public and stakeholder review opportunities. Based on these reviews, the AL SFRMP was completed with implementation of the plan's strategic direction beginning in FY2004 (i.e., July 1, 2003 – June 30, 2004).

The February 2008 approved AL SFRMP identifies:

- Long-term strategic goals, strategies, and desired future forest conditions (as revised based on previous public review)
- Summaries of the 7-year stand selection process, the results of which have been used to implement the long-term strategic direction (i.e., stands selected to be field reviewed, and potentially treated, based on criteria consistent with the long-term strategic goals).
- The complete 7-year list of stands selected for field review and potential treatment.
- DNR responses to comments received during public review opportunities.

The Agassiz Lowlands SFRMP was among the first of the subsection planning efforts to be undertaken by the Department. This planning process began in 2002. At that time the standard was to prepare a 7-year stand examination list (vs. the current ten-year list). Understanding that Forestry Area Annual Plans prepared for FY2010 represented the last year of the original 7-year stand examination list and that Department SFRMP resources were fully committed to completing the first round of SFRMPs in other subsections of the state, DNR leadership directed staff to select an additional three years of stands for examination using the plan assumptions, criteria, and desired future forest conditions taken from the original Agassiz Lowlands SFRMP. This document is an extension of the DFFCs, policies and objectives of February 2008 AL SFRMP, with some modifications as identified -in this Extension Document.

The original Agassiz Lowlands SFRMP and this Agassiz Lowlands Extension were developed by an interdisciplinary DNR team (i.e., including staff from DNR Divisions of Forestry, Fish and Wildlife, and Ecological Resources), made available for public review and comment, and approved by Division and

Department leadership. The original AL SFRMP and this Extension directs vegetation management on approximately 1,769,908 acres of forestlands administered by the DNR Divisions of Forestry, and Management Section of Wildlife (see Figure 1.1). DNR forestlands in this Extension represent about 43% of the total land area in the Agassiz Lowlands subsection.

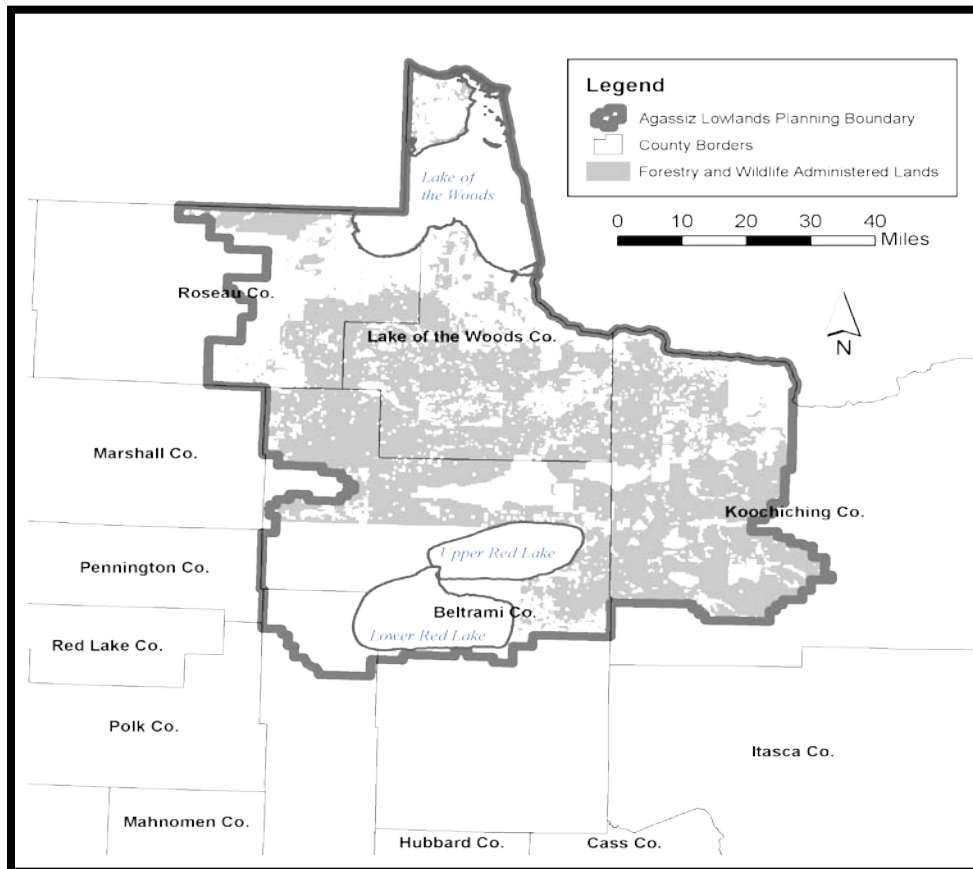
From all forestlands, stands identified as old growth, stands within state parks and Scientific and Natural Areas were removed to identify the potential management pool. From this management pool, stand selection criteria was applied to identify the AL SFRMP Three-Year Stand Exam List (See Appendix E Glossary).

The AL SFRMP and this Three-Year Extension identify forestry management objectives and the stand exam lists for that portion of the following Forestry Areas located within the Agassiz Lowlands subsection (see Figure 3.1):

- Baudette
- Blackduck
- Littlefork
- Warroad.
- Deer River

Three-year stand selection was completed in August 2009. Effective July 1, 2010 Forestry Area boundaries were adjusted to coincide with DNR Regional boundaries. The three-year stand exam list was then adjusted in November 2010 consistent with the post July 1, 2010 forestry area boundaries.

Figure 1.1 DNR Administered Lands Considered in the Agassiz Lowlands SFRMP



Chapter 2 Agassiz Lowlands SFRMP Three-Year Extension

2.1 Process Used to Establish the Three-Year Extension

Purpose for the AL SFRMP Three-Year Extension

The Agassiz Lowlands SFRMP was among the first SFRMPs to be prepared by the Department. The planning effort concluded in 2004 having established the then standard 7-year stand exam list. Subsequent SFRMPs have developed a 10-year stand exam list. To get the AL subsection into a 10-year stand exam cycle, a three-year extension to AL SFRMP has been prepared. This effort is defined as an extension; as the overall goals, strategies, DFFCs and stand selection criteria as identified in the AL SFRMP have been carried forward. This Three-Year Extension implemented no significant changes to the policies and directions contained in the AL SFRMP.

The AL SFRMP Three-Year Extension will cover Area annual plans for FY 2011, 2012 and 2013. A revised AL SFRMP will be prepared to cover FYs 2014 thru 2023.

AL SFRMP Three-Year Extension Planning Process

The basic sequence to prepare the extension included the following:

1. An extension planning team was formed made up of the following:
 - 3 representatives from the Division of Forestry;
 - 3 representatives from the Division of Fish and Wildlife, Wildlife Management Section;
 - 1 representative from the Division of Ecological Resources; and,
 - 1 GIS Specialist.
2. The AL Extension Planning Team requested the four Forestry Areas update their FIM dataset to establish the most accurate forest inventory reasonable.
3. As background information to prepare the three-year extension, the Agassiz Lowlands CORE comprised of Regional staff team members from Forestry, Management Section of Wildlife, and Ecological Resources Divisions reviewed monitoring information prepared by the Division of Forestry Central Office to:
 - determine status of the 7-year stand exam list for each Forestry Area (meaning have Areas exhausted their inventory of stands as identified on the 7-year list);
 - Identify any trends discernable from the monitoring information provided; and,
 - Compare identified trends with the goals and DFFCs as identified in the AL SFRMP

Based on the analysis of monitoring information (*See Appendix C*) the AL Team determined to:

- prepare updated treatment models for even-aged cover types;
 - add an additional treatment model for white spruce – balsam fir;
 - advise Areas to extend past treatment levels for uneven aged managed cover types; and,
 - eliminate the HRLV management pool, and to treat these acres within the normal management pool.
4. Using the updated FIM inventory dataset, treatment models were prepared for even aged managed cover types. The treatment models identified treatment levels using the following basic guidelines:
 - the overall goal remains to achieve a balanced age class distribution (as outlined in the AL SFRMP);
 - maintain adequate minimum old forest percent through time for even aged managed cover types;

- minimize vegetation harvest fluctuations; and,
 - identify additional EILC, to bring this inventory within the range as established in the original AL 7-Year SFRMP.
5. Conversion targets were established for each Forestry Area using the updated FIM inventory by identifying potential conversion opportunities and prorating, down to three-years, the 50-year conversion goals identified in the original 7-Year AL SFRMP.
 6. Stand Selection Instructions were prepared for each Forestry Area reflecting age class targets by cover type, and conversion targets (*See Appendix D*).
 7. Stand selection meetings were held in each of the four Forestry Areas. A three-year list of stands was selected by an interdisciplinary team including Forestry, Management Section of Wildlife and Ecological Resources. (*See Appendix A*). The SFRMP process relies on significant involvement by field staff from all Divisions. Field staff involvement with the stand selection process brings on-site experience and past stand management strategies to bear on the Three-Year extension process.
 8. After comparing the three-year stand exam lists submitted by the Areas to the planned treatment level targets, the AL Team requested adjustments to the Area stand exam lists.
 9. Forestry Areas made adjustment to their stand exam lists.
 10. Following adoption by the AL Team, the Draft Three-Year Extension Stand Exam List was published for public review consistent with the SFRMP Public Review Process.
 11. Public and stakeholder comments were received, reviewed by the AL Team with appropriate revisions to the Three-Year Extension, and adopted by the Department.

2.2 FIM Updates by Forestry Areas

Each Forestry Area was requested to update their FIM inventory to ensure that the most accurate inventory would serve as the basis upon which the Three-Year Extension stand selection criteria would be applied. An updated inventory was also deemed necessary to reflect the results of temporary accelerated harvests in the Agassiz Lowlands subsection. These accelerated harvests addressed an age-class imbalance. Taking into consideration these recent accelerated harvests ensures that cover types would not be overly treated during the three-year extension.

Each Area's updated FIM becomes the dataset against which stand selection criteria was applied to develop the Three-Year Extension Stand Exam Lists by each Forestry Area. The following information was requested from each Area:

	PROCEDURE STEPS
Area Forestry Pre-Work	<p>Before starting the FIM build process have these items addressed by the field staff:</p> <ul style="list-style-type: none">• Catch up with Alterations• Code Underdevelopment stands• Code Inoperable stands• Code "Leave tree patches"• Check Old Growth stands for proper coding• Check Old Growth SMZ for proper coding• Find and correct Unknowns (CTYPE = 90) and COAs (CTYPE= 82)• Establish download date with Areas to give them a chance to address these issues.

2.3 Additions to Ecologically Important Lowland Conifer Inventory

Cover types for which Ecologically Important Lowland Conifers (EILC) acres are identified include: tamarack, black spruce lowland and northern white cedar. Stands selected as EILC are examples of high-quality native plant communities, they represent the range of lowland conifer native plant communities found in the subsection, and are distributed in a representative fashion across the LTAs in the subsection (e.g., if a particular lowland conifer community type is found mostly in certain LTAs, then most of the acres of that type chosen as EILC should be in those LTAs). In designating specific stands as EILC, examples of wildlife species that will benefit include great gray owl, hawk owl, Connecticut Warbler, spruce grouse, northern bog lemming, and wintering yards for white-tailed deer.

The purpose of identifying EILC is to identify specific stands as EILC and reserve them from treatment until old growth standards for these cover types can be developed. Once these standards are developed and applied to the inventory, non-old growth EILC stands will be released back to the management pool and considered in future planning efforts. Acres of EILC are not removed from the commercial timberland base for the purposes of identifying desired treatment levels. Stands within EILC sites are reserved from harvest for the SFRMP plan implementation period, thus shifting the desired level of harvesting during the plan implementation period to other lowland conifer stands outside these identified EILC stands

The original AL SFRMP indicated that EILC should be tagged in the FIM inventory and range from 4% to 8% of those covers types. The result from the original AL SFRMP EILC process was that less than 4% of these cover types was tagged in the FIM dataset. For purposes of the Three-Year Extension, the AL Team determined that additional EILC acres should be identified, tagged and reserved from

treatment during implementation of the three-year extension. The results of applying the EILC criteria are identified on Figure 2.1. This Figure identifies only those additional EILC stands added to complete the three-year extension. EILC previously designated during the original AL SFRMP process is included in all lands subject to the SFRMP process and is shown on Figure 1.1

Process used to Identify additional EILC

Identified below is the criteria and process used to identify additional EILC for purposes of completing the Three-Year extension.

Selection Process 1

Four sets of data from the original EILC designation process were combined to define the area of potential existing EILC within the existing forest inventory data.

The list of sources includes:

1. Stands flagged as "Eco Imp Lowland Conifers" within the management fields within the current FIM forest inventory.
2. Eilc_stands_fim8_04.shp - List of EILC stands compiled for the original AL SFRMP.
3. Eilcfin.shp - EILC designation shapefile identified from stands within the CSA data of the original Agassiz Lowlands plan.
4. Alstandselfinal.shp - Stands flagged in the EILC field from the official stand selection shapefile from the original 7-year AL SFRMP.

Once combined, any stand from the current forest inventory data that had 50% or more of its stand area that overlaid the combined original EILC was initially flagged as EILC. The final EILC designation is tagged in the Three-Year extension dataset in the "EILCFinal" field as "Original Plan EILC Lo Conifer". Two and ½ percent of the EILC added during the Three-Year Extension was designated with this process.

Selection Process 2

Any lowland conifer stand from the Three-Year Extension dataset that was currently not designated as EILC from the first process and had an age of 85 years or older which was within or adjacent to a SNA boundary was tagged as EILC. The stand was tagged as EILC in the extension dataset in the "EILCFinal" field as "3 yr Ext SNA Int 85yr LC". A total of 3.6 % of the EILC in the Three-Year Extension was designated with this process.

Selection Process 3

Any lowland conifer stand from the Three-Year Extension dataset that was currently not designated as EILC from process 1 or 2 and had an age of 85 years or older which was within or adjacent to an area of Outstanding Biodiversity Significance within Roseau County were tagged. These stands were tagged as EILC in the extension dataset in the "EILCFinal" field as "3 yr Ext OstD Bio Int 85 yr LC". A total of 0.2 % of the EILC in the three-year extension was designated with this process.

Selection Process 4

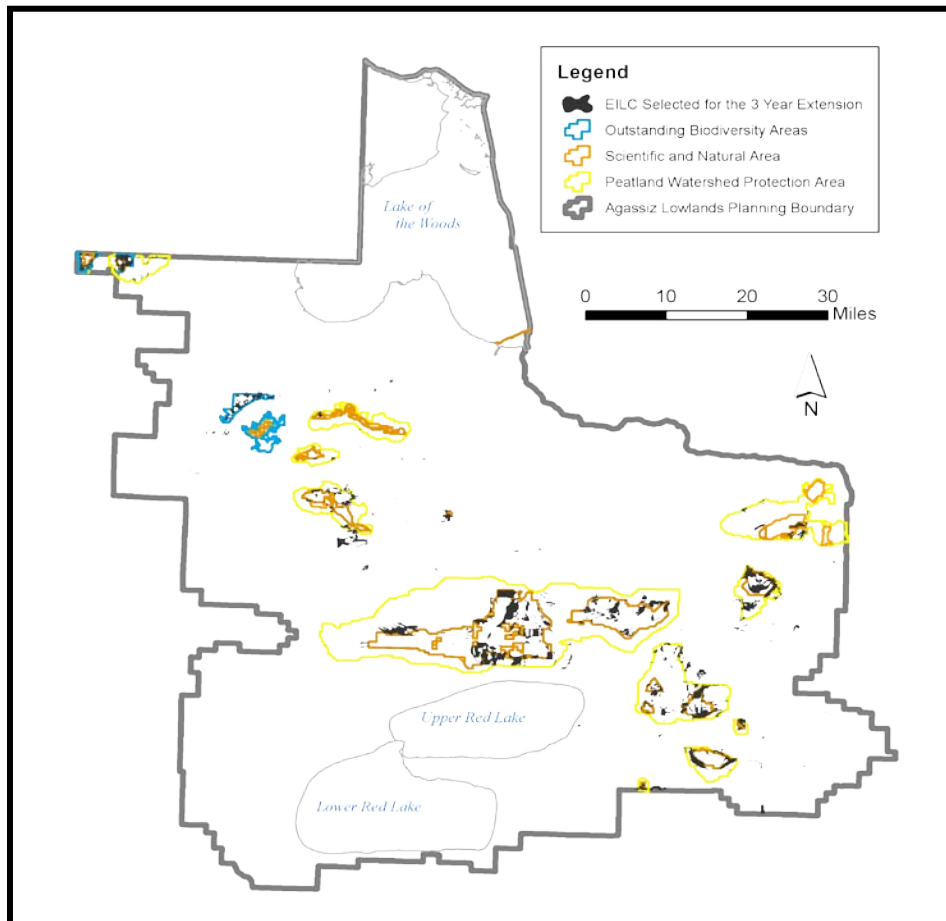
Any lowland conifer stand from the Three-Year Extension dataset that was currently not designated as EILC from process 1, 2 or 3 and was overlaid by stands in the original EILC stands from the original 7-year AL SFRMP, were reviewed to determine if they should be added based on their ability to connect a patch of EILC, protect an old growth stand, or protect significant features within an SNA Watershed Protection area. Stands that met these criteria in the extension dataset were tagged EILC in the "EILCFinal" field as "3 yr

Ext missed 50% add". A total of 0.43 % of the EILC in the three-year extension was designated with this process.

Following application of these four selection processes a total of 6.7 % of the lowland conifer in the Three-Year Extension dataset was identified as EILC. In terms of age from the current FIM inventory, EILC ranges from 4.5% using 100 yrs + to 5.9% 85 yrs +.

These additional EILC stands were tagged in the AL Extension SFRMP Dataset and reserved from treatment during the Three-Year Extension implementation period.

Figure 2.1 Additional Ecologically Important Lowland Conifers Selected for the Three-Year Extension



2.4 Summary: Agassiz Lowlands SFRMP Monitoring Report

Background

Monitoring of SFRMP implementation is vital to determine if SFRMP planned actions are implemented and if those actions are effective. Through the SFRMP process, plan goals and desired future forest conditions (DFFCs) are defined with short term and long-term measures. Periodically during plan implementation, monitoring occurs to evaluate the effectiveness of management activities in meeting the stated goals and DFFCs. The Agassiz Lowlands Monitoring Report (Appendix C) is intended to compare SFRMP DFFCs and objectives with actual on the ground actions as reported over the plan implementation period.

The Monitoring Report evaluates: background information prepared by the Division of Forestry Central Office; trends identified following comparison of 2003 FIM and 2009 FIM updates; and, observations of the AL SFRMP Planning Team from field and working experience. Based on this monitoring evaluation, the Agassiz Lowlands Planning Team developed procedures to guide the three-year stand exam list extension process. The three-year stand selection process was developed to reflect these monitoring observations and to maintain consistency with the DFFCs and forest management objectives adopted in the original Agassiz Lowlands SFRMP Seven-Year Plan (formally adopted in February 2008).

The Agassiz Lowlands Monitoring Report concentrates on those DFFCs for which measurable monitoring information is available, and based on that information, suggest a mid-plan correction to remain consistent with the primary DFFCs from the original 7-Year AL SFRMP.

The primary product of the original SFRMP planning process that implements the plan's goals and DFFCs is the 7-Year AL SFRMP Stand Exam List. The 7-Year Stand Exam List was used by all Forestry Areas (Baudette, Blackduck, Littlefork, and Warroad) to prepare Area Annual Plans from FY 2004 through Fiscal Year 2010. The primary monitoring data available is comparisons of past forest conditions with present conditions through evaluation of FIM inventories and information from the Silvicultural and Roads Module (SRM). SRM is software, used by the Department, to track plans and actions at the stand level and is critical for monitoring efforts.

Throughout the past 7-year implementation period (FY 2004 to 2010), the Department has been improving methods for recording actions taken on specific stands. However, since these improvements were not in place at the beginning of the AL SFRMP plan implementation (2004), baseline information and measurements are not complete. Due to this lack of comprehensive baseline information, not all elements of the original plan goals and DFFCs can be evaluated. In addition, other limitations of monitoring forest management activities include the very nature of monitoring changes in a forest environment, meaning it takes significant time for a forest to develop, with results not visible or measureable during the implementation period of a plan.

The Agassiz Lowlands Monitoring Report (Appendix C) focuses on the goals and DFFCs for which useable information was available from the earlier years of the 7-year plan implementation period and comparing this information with the desired directions identified in the original AL SFRMP. The results of these comparisons were then applied to develop the three-year extension stand exam list. For the formal revision to the AL SFRMP (2014-2023), as additional and improved information is incorporated into the forest planning modules (such as SRM and FIM), monitoring reports will be able to more effectively guide management and field activities to reflect the SFRMP goals and DFFCs .

The Agassiz Lowlands CORE group (comprised of Regional staff team members from Forestry, Management Section of Wildlife and Ecological Resources divisions) reviewed monitoring information prepared by the Division of Forestry Central Office and 2009 FIM updates as prepared by each Forestry Area to determine:

- the status of the 7-year stand exam list for each Forestry Area (meaning have Areas exhausted their inventory of stands as identified on the original 7-year list); and,

- Identify any trends discernable from all information compared with the goals and DFFCs as identified in the original AL SFRMP.

Following CORE completion of the draft monitoring report, recommendations were made to the Agassiz Lowlands SFRMP Planning Team concerning adjustments to stand selection criteria and stand selection process to be used to select stands for the three-year extension. Identified below is a summary of the key findings of the AL SFRMP Planning Team and guidance then applied to prepare the stand exam list for the Three-Year Extension. The complete discussion of these findings is included in Appendix C.

Summary of Monitoring Results

The following chart outlines the key monitoring observations and trends noted and show the guidance applied to prepare the stand selection criteria and process for the Three-Year Stand Exam List.

Monitoring showed:	Guidance applied to three-year Extension:
Less than comprehensive data due to reporting, definitions, evolving data tracking systems, difficult to compare over years.	FIM updated. New treatment models applied. Consistent definitions emphasized at stand selection meetings.
Accelerated harvests seen in some even aged cover types.	Using updated FIM, new treatment models applied to even aged cover types to ensure appropriate treatment levels.
Decrease in WS / BF acres. AL SFRMP called for increase.	Additional treatment model prepared to ensure no over-treatment of WS / BF during three-year period.
Need to continue conversions out of A/B/B cover types.	A/B/B treatment model accounted for conversions to priority conifers.
Need to continue conversions into priority conifers: WP, WS, JP, T, BF, C.	Conversion targets into priority conifers recommended to Areas.
EILC was less than the 4% – 8% target from AL SFRMP	Additional EILC acres tagged to achieve 7% of EILC cover types
No additional ERF tagged from AL SFRMP.	Treatment models maintained a minimum of 10% Old Forest until ERF formally re-visited in the revised AL SFRMP.
One Forestry Area showed backlog of stands from the 7-year AL SFRMP.	These stands removed from models but will be treated during three-year extension timeframe (FY 2011-2013).
Possible over and under treatments for some cover types and for some age-classes had occurred during past 7 years.	New treatment models applied to updated FIM to ensure no over or under treatments. Cover type and age-class targets then recommended to each Area.

Following adoption of the Agassiz Lowlands SFRMP Three-Year Extension specific, focused information will be reiterated to all forestry field staff, Wildlife and Ecological Resources stressing key issues from the original AL SFRMP and key points identified in the Three-Year Extension. This message will take the form of a more focused *Agassiz Lowlands SFRMP Field Guide* re-emphasizing the primary directions from the original AL SFRMP and those emphasized during development of the AL SFRMP Three-Year Extension. An updated monitoring analysis will be implemented prior to starting the revised AL SFRMP (2014 - 2023).

2.5 Status of Original Seven-Year Stand Exam List

In preparation for the Three-Year Extension effort, DNR staff reviewed the entire original 7-year stand exam list to identify any stands which had not yet been field visited. This review occurred as the FIM datasets were updated and showed that one Forestry Area had not field visited all stands as identified on the original 7-year stand exam list. These remaining stands were identified as a “backlog” from the original 7-year list and kept separate from the additional three years of stands generated from the Three-Year Stand List Extension process. Forestry Area staff will field visit the stands from the backlog plus the stands included on the Three-Year Extension Stand Exam List.

2.6 Treatment Models for Even Aged Managed Cover Types for the Three-Year Extension

Following completion of FIM updates and tagging additional EILC stands, the AL SFRMP Planning Team proceeded to develop data inputs into the treatment models. Treatment models were prepared for the following cover types:

- Aspen /balm/birch. These three cover types were modeled together, consistent with the original AL SFRMP. In the Agassiz Lowlands subsection, these cover types have similar rotation ages.
- Tamarack
- Jack Pine
- Black Spruce Lowland
- White spruce / balsam fir. A white spruce / balsam fir treatment model was developed for the Three-Year Extension based on monitoring information that indicated that spruce / fir acres were declining during the 7-year period, whereas the original Plan's strategy for these cover types was to increase acres for these cover types.

Table 2.6 summarizes the resulting primary treatment model data inputs used to develop the optimum treatment levels for the even-aged managed cover types for the Three-Year Extension. These data inputs reflect the primary guiding factors that, over time:

- achieve a balanced age class distribution;
- maintain adequate old forest by cover type (recognizing the Department target to maintain at least 10% old forest on landscape);
- implement conversion goals; and,
- minimize harvest fluctuations.

**Table 2.6 Agassiz Lowlands Three-Year Extension:
Treatment Model Data Inputs for Even Aged Managed Cover Types**

Cover Type	Treatment Model Inputs					Three-Year Extension Total CT Treatment Target
	Total CT Acres in AL subsection	Weighted Rotation Age	Maximum Rotation Age	50-Year Cover Type Change DFFC %	Minimum Old Forest % Goal for Three-Year Extension	
Aspen/Balm/Birch	254,052	47	70	-5	13	12,481
Tamarack	207,927	87	140	maintain	15	6,031
Black Spruce LL	176,319	105	150	maintain	14	4,285
White Spruce - Balsam Fir	25,912	51	105	+10	10	1,329
Jack Pine	38,383	50	70	+13	10	1,186

Summaries of these treatment models for the even-aged managed cover types are identified below (Figures 2.6.1 through 2.6.5). Data inputs used in developing these treatment models include:

- total cover type acres;
- rotation ages for each cover types;
- weighted rotation ages when two or more cover types were modeled together;
- maximum rotation ages;
- conversions out of particular cover types; and,
- old forest percent to be maintained for each cover type.

After applying the above data inputs, the treatment models identify the Total Annual Treatment Level for the AL subsection for a 10-year period. Essentially these models identify the optimum treatment levels given the data inputs which reflect the long term desired objectives for each cover type. Although these treatment models project treatment levels out six decades, they were prepared to model the appropriate treatment level for the three-year extension using the updated FIM inventory. As the revised Agassiz Lowlands SFRMP is prepared for the next ten-year plan (FY 2014-FY 2023), the then current Department adopted modeling software will be used.

Figures 2.6.1 through 2.6.5 summarize the treatment models and include the following information:

1. Total Cover Type Acres – total acres of this cover type potentially available for management.
2. Total AL Annual Treatment Level – represents total annual acres to be treated resulting from the model data inputs applied to the total cover type acres.
3. Decades – the treatment model identifies treatment out over six decades to show the impact on the cover type of the data inputs applied over a relatively long term. As stated above, although the models extend over six decades, this Extension is in place to identify treatment levels over only the next three years. As the formal revision to the Agassiz Lowlands SFRMP is prepared for FY 2014 through 2023, revised cover type modeling will be prepared.
4. Total Treatment – means the total acres requiring treatment based on the data inputs into the model for the entire 10 year decade.
5. Conversion - means acres modeled to be reduced out of the particular cover type. The DFFC conversion goals of the original 7- Year AL SFRMP identified that conversions should come out of the aspen/ balm/ birch cover types predominately. The aspen/balm/birch treatment model is the only model showing conversion (reduction) acres.
6. Old Forest Percent – is the amount of old forest percent (beyond maximum rotation age) that results based on applying the old forest goals for each cover type to the treatment model to the current age class distribution of the cover type.
7. Normal Avg Treatment Age – shows the average treatment age for each cover type resulting from application of the treatment model data inputs.
8. Ave Age- shows the average treatment age for that cover type for each decade.

In addition, Tables 2.6.1 through 2.6.5 identify, as bar charts:

1. The 2010 age class distribution (i.e. the current distribution in acres of the cover type; and,
2. The 2060 age class distribution resulting from implementation of the management identified in the models.

As stated above, one of the guiding factors in preparing these models is to move toward an even age class distribution of these cover types and to minimize fluctuations in harvest levels. The 2060 bar charts show the projected condition of the cover type, assuming the treatment levels as modeled are implemented. These models were prepared to identify the appropriate treatment levels for the Three-Year Extension and will be revised as the 10-year revision to the Agassiz Lowlands SFRMP is prepared.

These summaries model treatment levels for the AL subsection as a whole, over 10 year periods. The Total Annual Treatment Levels as identified was prorated for the Three-Year Extension (3 years of 10) and further allocated to treatment level targets for each Forestry Area.

Figure 2.6.1 Treatment Model Summary for Aspen / Balm / Birch

Total Cover Type Acres: 254,052 acres

Total AL annual Treatment Level: 4,160 acres

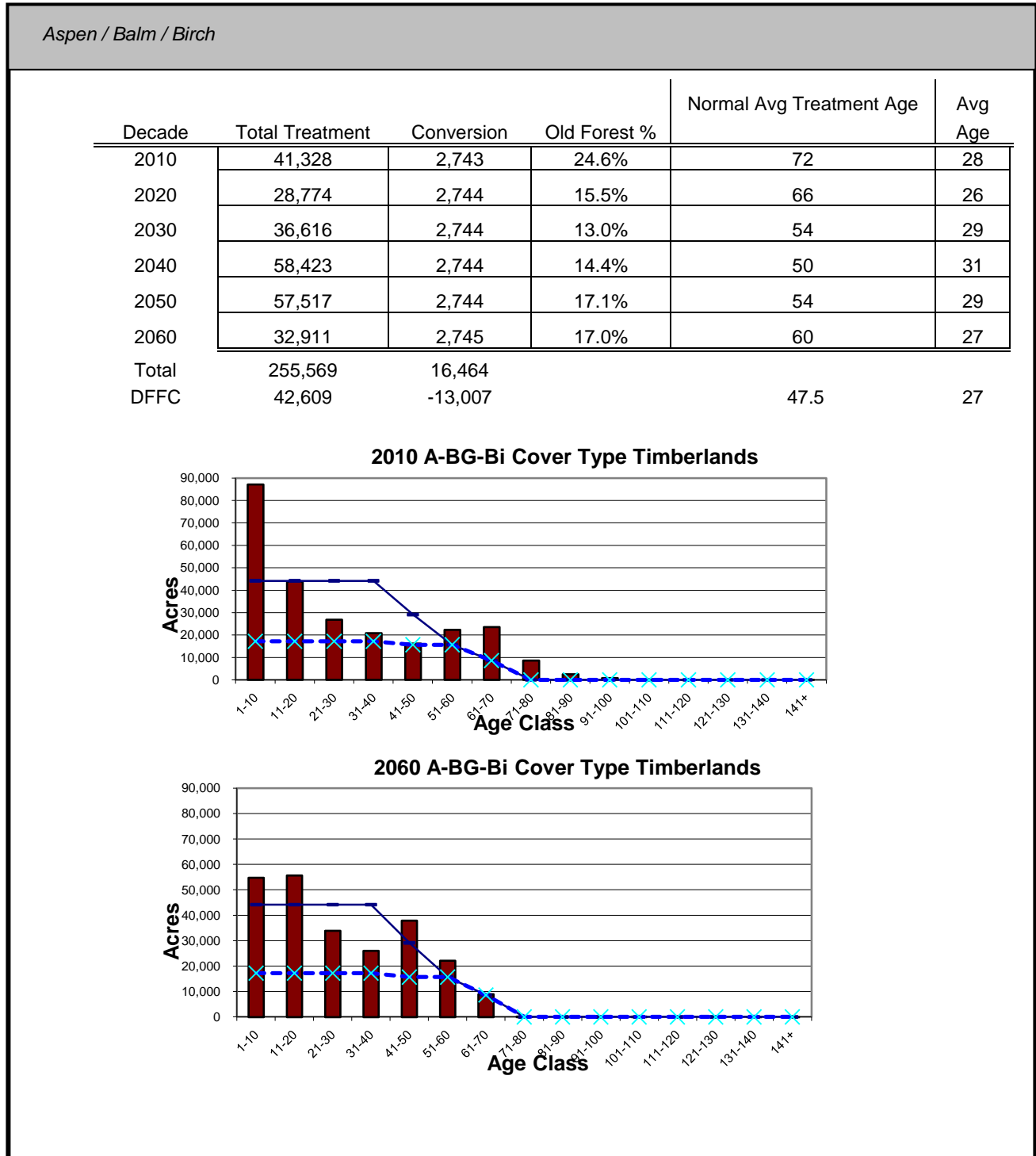


Figure 2.6.2 Treatment Model Summary for Tamarack

Total Cover Type Acres 207,927

Annual Treatment 2,010

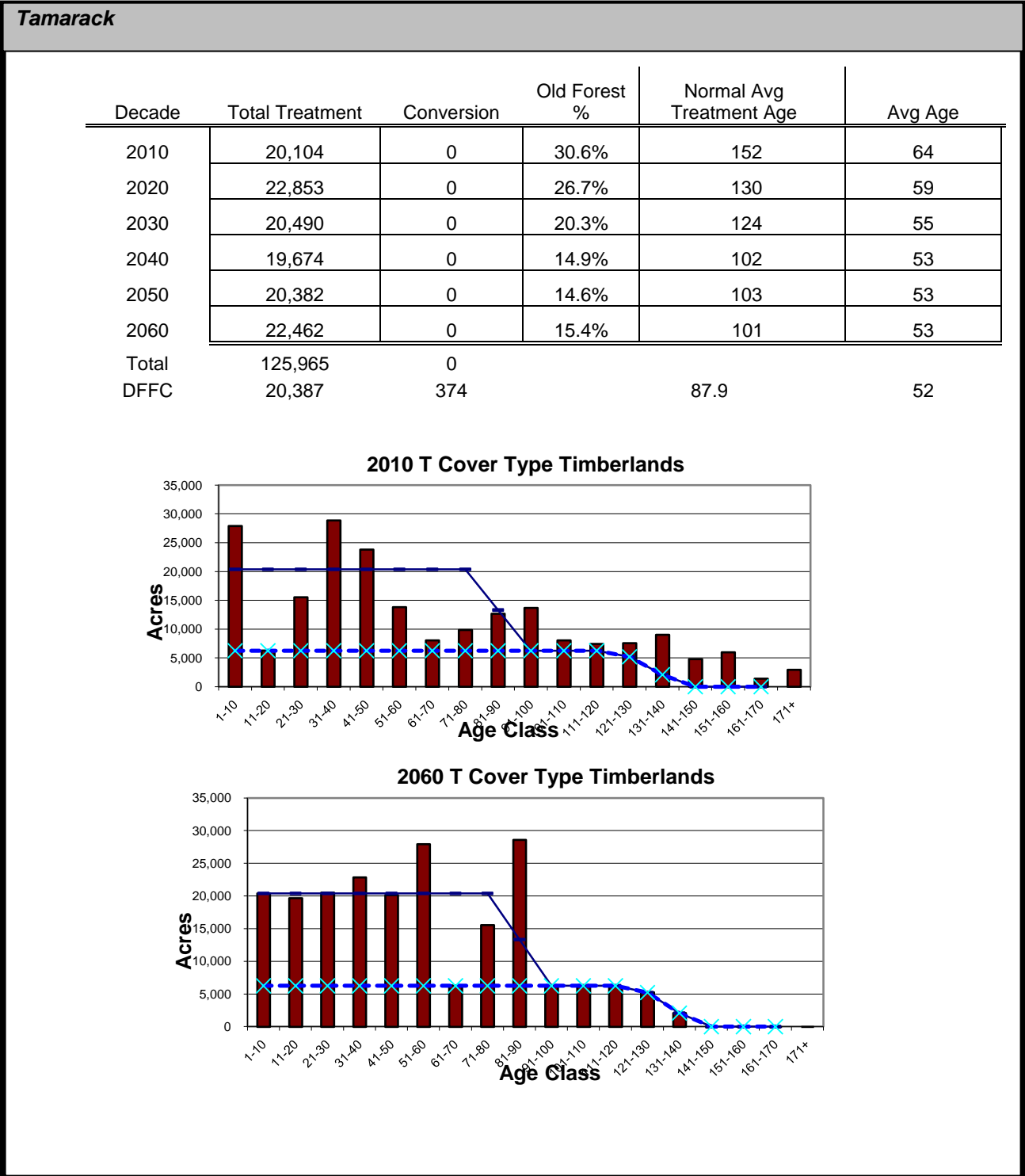


Figure 2.6.3 Treatment Model Summary for Jack Pine

Total Cover Type Acres: 38,383 acres

Total Annual Treatment Level: 395 acres

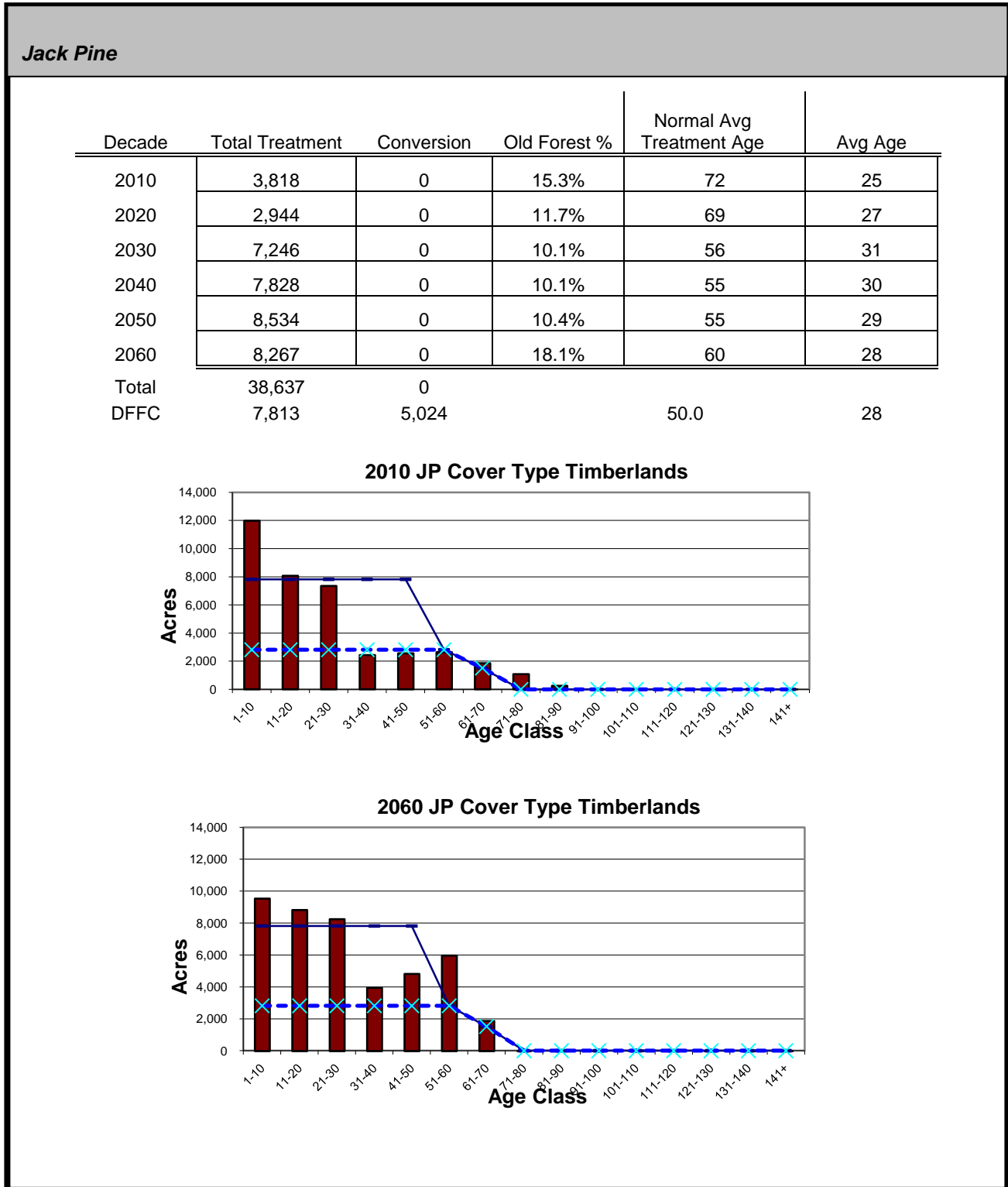


Figure 2.6.4 Treatment Model Summary for Black Spruce Lowland

Total Cover Type Acres: 176,319 acres

Total Annual Treatment Level: 1,428 acres

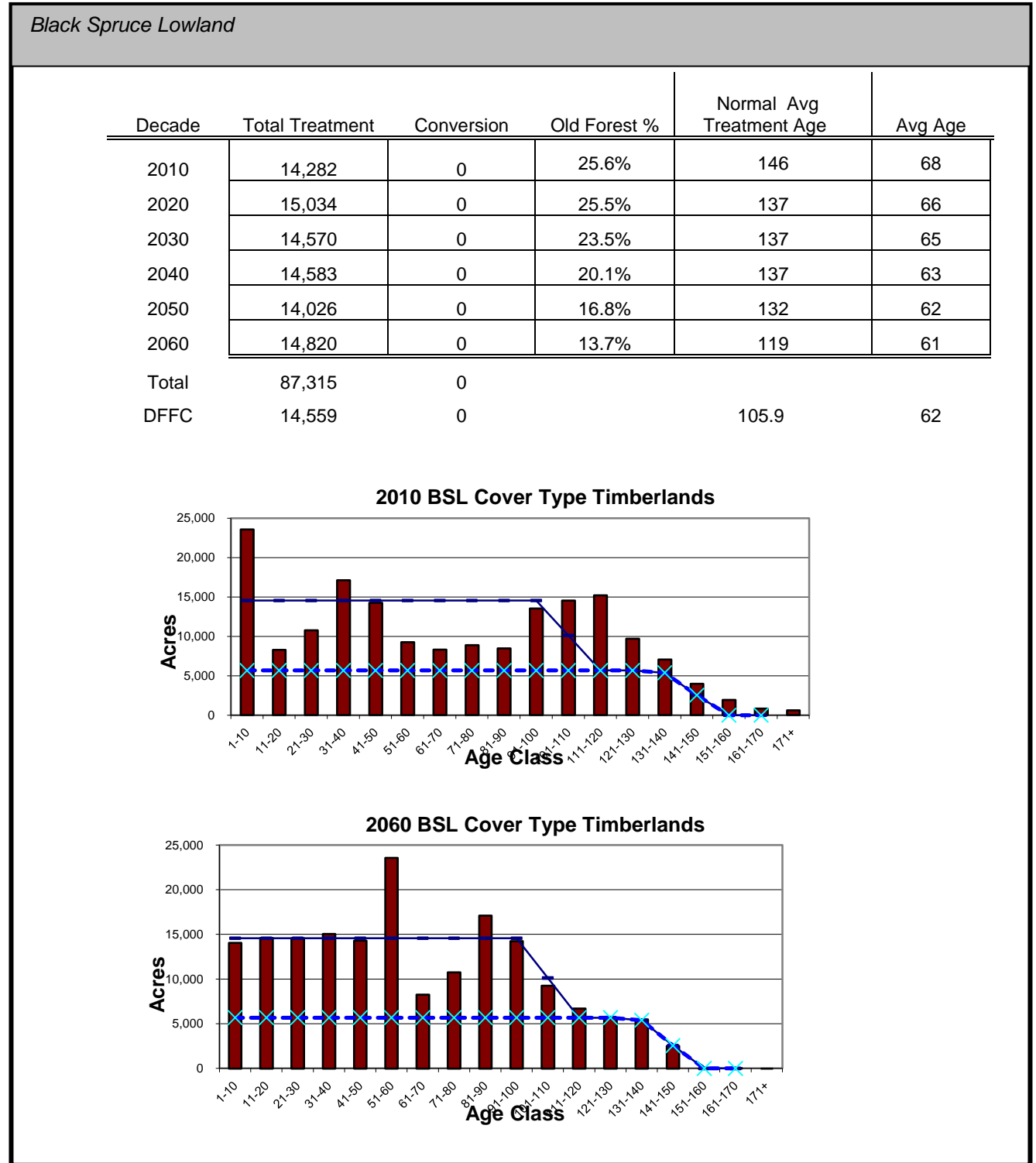
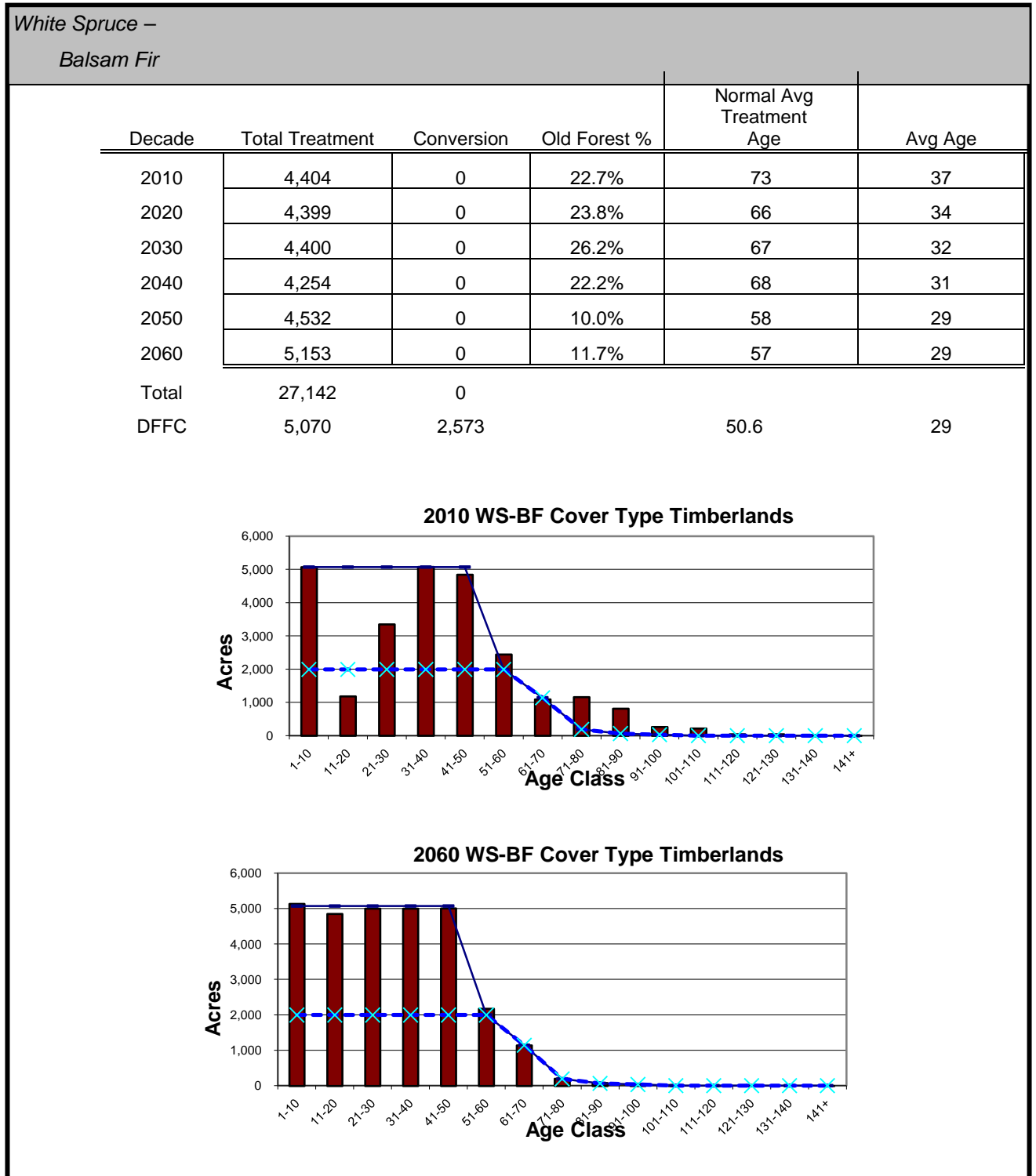


Figure 2.6.5 Treatment Model Summary for White Spruce – Balsam Fir

Total Cover Type Acres: 25,912 acres

Total Annual Treatment Level: 443 acres



2.7 Treatment Levels for Other Cover Types

For Other Cover Types, the AL SFRMP Planning Team advised the Forestry Areas to use historical treatment levels as guides to select stands for the Three-Year Extension. This Extension recommends that for Other Cover Types, Forestry Areas “extend” or continue their past treatment levels consistent with the original 7-Year AL SFRMP. These Other Cover Types result in relatively minor acres in this subsection.

Other Cover Types includes the following:

- ash/ willow / lowland hardwoods
- northern hardwoods / oak
- white pine
- red pine
- black spruce, upland
- northern white cedar
- stagnant lowland conifers
- grass / brush.

The Three-Year Extension Stand Exam List identifies total acres for these Other Cover Types based on past Area treatment levels which have reflected markets, preferred silvicultural practices, Division of Forestry directives and interdisciplinary review. In addition, some acres from these Other Cover Types will be added to the Annual Stand Exam Lists or as Annual Plan Additions by Forestry Areas. These cover types will be managed as markets provide and be consistent with Department recommendations. Given developments related to emerald ash borer, management of ash consistent with the recently developed strategies to address emerald ash borer will continue to be emphasized to field staff.

2.8 Conversion Targets for Agassiz Lowlands SFRMP

The original Agassiz Lowlands SFRMP identified long term DFFC conversions, primarily from aspen /balm/ birch, into other cover types to move the landscape toward a natural landscape composition. Table 2.8.1 identifies the 50-year conversion goal and three-year conversion targets prorated from the 50-year goal. The majority of conversions will come from the aspen/ balm/ birch cover types into jack pine, Norway pine, spruce-fir, white cedar, upland tamarack, white pine and northern hardwoods. The prorated conversion acres for the Three-Year Extension total 823 acres. The 823 target conversion acres were then allocated to each Forestry Area based on the potential for conversion among the Areas as shown in Table 2.8.2.

Table 2.8.1 Agassiz Lowlands SFRMP Conversion Goals and Three-Year Conversion Targets

Cover Type	50-year Goal from AL SFRMP (acres)	Three-Year Conversion Target (acres)
Jack Pine	5,000	300
Norway Pine	2,000	120
Spruce – Fir	3,000	180
Upland White Cedar	1,500	90
Upland Tamarack	600	36
Northern Hardwoods	617	37
White Pine	1,000	60
Total		823

Table 2.8.2 identifies the allocation of the Three-Year Extension Conversion Acres by Forestry Area.

Table 2.8.2 Agassiz Lowlands Three-Year Extension: Conversion Targets by Area

Forestry Area	Three-Year Extension Target (reduction target from Aspen / Balm / Birch)
Blackduck	53
Warroad	273
Baudette	257
Littlefork	215
Deer River	25
Total	823

Chapter 3 Three-Year Stand Selection Results

3.1 Three-Year Extension Stand Exam List

The Three-Year Stand Exam List has been selected by applying the treatment level targets, and conversion recommendations to the updated FIM inventory. This resulted in a potential management pool of stands which were then scored to identify the highest priority stands to meet the stand selection criteria. From this scored management pool, field staff then selected stands to be placed on the Three-Year Extension Stand Exam List considering specific knowledge of individual stands. Over the next three years each stand on the list will be field visited. Following the on-site visit, appraisers will determine the most appropriate management for each stand.

The range of decisions about each stand's possible management includes:

- Update the inventory database to reflect current field conditions but propose no active management.
- Harvest and convert to new cover type.
- Harvest and regenerate into existing cover type.
- Conduct various timber stand improvements to enhance stand vigor, diversity, ecological characteristics and functions, or productivity.

The following tables provide summaries of the Three-Year Extension Stand Exam List.

Table 3.1 shows the distribution of the selected stands by cover type by DNR Forestry Area within the Agassiz Lowland Subsection.

Table 3.1 Agassiz Lowlands Three-Year Extension: Selected Three-Year Stand Acres by Cover Type by Forestry Area⁴ (timberland¹)

Cover Type	Baudette ²	Blackduck ²	Deer River ²	Littlefork ²	Warroad ³	Total
Agriculture ⁴	68	0	0	0	0	68
Ash	371	302	423	878	69	2043
Aspen	5738	579	258	2,755	4,821	14,151
Balm of Gilead	637	40	9	55	547	1,288
Balsam Fir	340	11	109	509	429	1,398
Birch	131	14	8	328	64	544
Black Spruce, Lo	1364	226	226	2,318	518	4,652
Cutover Area ⁴	84	0	0	0	0	84
Jack Pine	443	57	0	69	743	1,312
Lowland Brush ⁴	26	0	0	0	0	26
Marsh ⁴	16	0	0	0	0	16
Norway Pine	382	171	148	30	0	731
Stag. Spruce ⁴	0	0	0	14	0	14
Tamarack	503	1,151	29	1,918	2,124	5,726
Unknown ⁴	163	0	0	0	0	163
Upland Grass ⁴	9	0	0	0	0	9
White Spruce	104	25	0	44	29	201
Total Selected⁵ Acres	10,378	2,577	1,209	8,917	9,344	32,425
Total DNR Timberland Acres in Subsection	201,052	63,323	55,151	232,838	234,939	787,303
% Selected Acres of Subsection Acres	5.2	4.1	2.2	3.8	4.0	4.1

¹ Timberland does not include DNR reserved (e.g., designated old-growth forest, and state parks) or nonproductive forest lands (e.g., stagnant spruce, tamarack, and cedar; or non-forest lands).

² Although agriculture, cutover area, lowland brush, marsh, stagnant spruce, unknown and upland grass are not included as timberland, the Agassiz plan identifies a limited number of stands in these types for management (e.g., stand evaluation, clearing of brush for habitat, and harvest with intent to gain reinvigorated regeneration). Some acres in these cover types could be selected due to inventory errors.

³ During the Warroad stand selection, the stand selection team agreed to select ash, Norway pine and upland black spruce mostly through the annual stand exam review process.

⁴ Reflects Forestry Area boundaries that were adjusted after stand selection.

Table 3.2 summarizes the generalized annual treatments for each forest cover type under the proposed Three-Year Extension Stand Exam List.

**Table 3.2 Agassiz Lowlands Three-Year Extension:
Summary of Annual Treatments by Cover Type in Acres**

Cover Type	Even Aged	Manage for Understory*	Seed Tree	Shelter-wood	Thin	Uneven Aged	On Site Visit	Alteration - Update Type*	Alteration - Update Age	Total Acres
Agriculture	0	0	0	0	0	0	0	23	0	23
Ash	21	28	0	73	2	395	79	6	77	681
Aspen	3,166	263	0	0	0	1	343	612	333	4,717
Balm of Gilead	260	38	0	0	0	14	26	66	26	429
Balsam Fir	342	9	0	0	0	0	33	59	24	466
Birch	40	9	0	0	0	4	29	88	11	181
Black Spruce, Lo	1,347	0	0	0	0	0	68	58	78	1,551
Cutover Area	0	0	0	0	0	0	0	0	28	28
Jack Pine	418	0	0	0	0	0	10	8	3	438
Lowland Brush	0	0	0	0	0	0	0	9	0	9
Marsh	0	0	0	0	0	0	0	5	0	5
Norway Pine	0	0	0	0	27	0	216	0	0	244
Stag. Spruce	5	0	0	0	0	0	0	0	0	5
Tamarack	1,696	3	143	0	0	0	0	45	22	1,909
Unknown	0	0	0	0	0	0	0	51	3	54
Upland Grass	0	0	0	0	0	0	0	3	0	3
White Spruce	8	0	0	0	19	16	20	5	0	67
Total	7,301	350	143	73	48	429	824	1,037	603	10,808

* Acres selected with the preliminary prescription of *Manage for Understory* and *Alteration-Update Type* did not count toward Subsection or Forestry Area treatment level targets for the even age managed cover types.

Table 3.3 identifies the acres selected for conversion by each Forestry Area for the Three-Year Stand Exam List Extension. The three-year conversion target for the Agassiz Lowlands subsection was identified at 823 acres with 779 acres selected (703 from aspen/ balm/ birch). The majority of conversions will be from the aspen/ balm/ birch cover type to spruce-fir, red pine, jack pine and northern white cedar. Although conversions were allocated by Forestry Area, the more important conversion indicator is total acre conversions across the entire Agassiz Lowlands subsection.

Table 3.3 Agassiz Lowlands Three-Year Extension: Conversions by Forestry Area¹ out of aspen/balm/birch

Forestry Area	Stands	Total Acres
Littlefork	2	32.3
Warroad	24	601
Blackduck ²	0	0
Deer River	1	6
Baudette	1	63.5
Total	28	703

¹ Reflects Forestry Area boundaries that were adjusted after stand selection.

² Conversions from Blackduck during stand selection are now in Deer River Area.

3.2 New Access Needs

In addition to identifying a three-year stand exam list, the SFRMP process identifies the new access needed to manage the stands placed on the Three-Year Extension Stand Exam List. Of the 1,249 total stands on the Three-Year Stand Exam List, 205 stands, or 16 percent required some type of new access designation, permit or construction. The New Access Needs List process identified a need for 36.7 miles of new access in the Agassiz Lowlands subsection to implement the three-year stand exam list. These access routes have been classified as 33.3 miles of Resource Management Access Routes and 3.4 miles of Temporary Access Routes. The road classification, mileage, and closure method will be finalized when field staff completes the actual on-the-ground road layout. Interdisciplinary review will be followed if significant changes or alterations are made to the planned access following the stand site visits. Table 3.4 identifies additional new access required to manage stands on the three-year stand exam list.

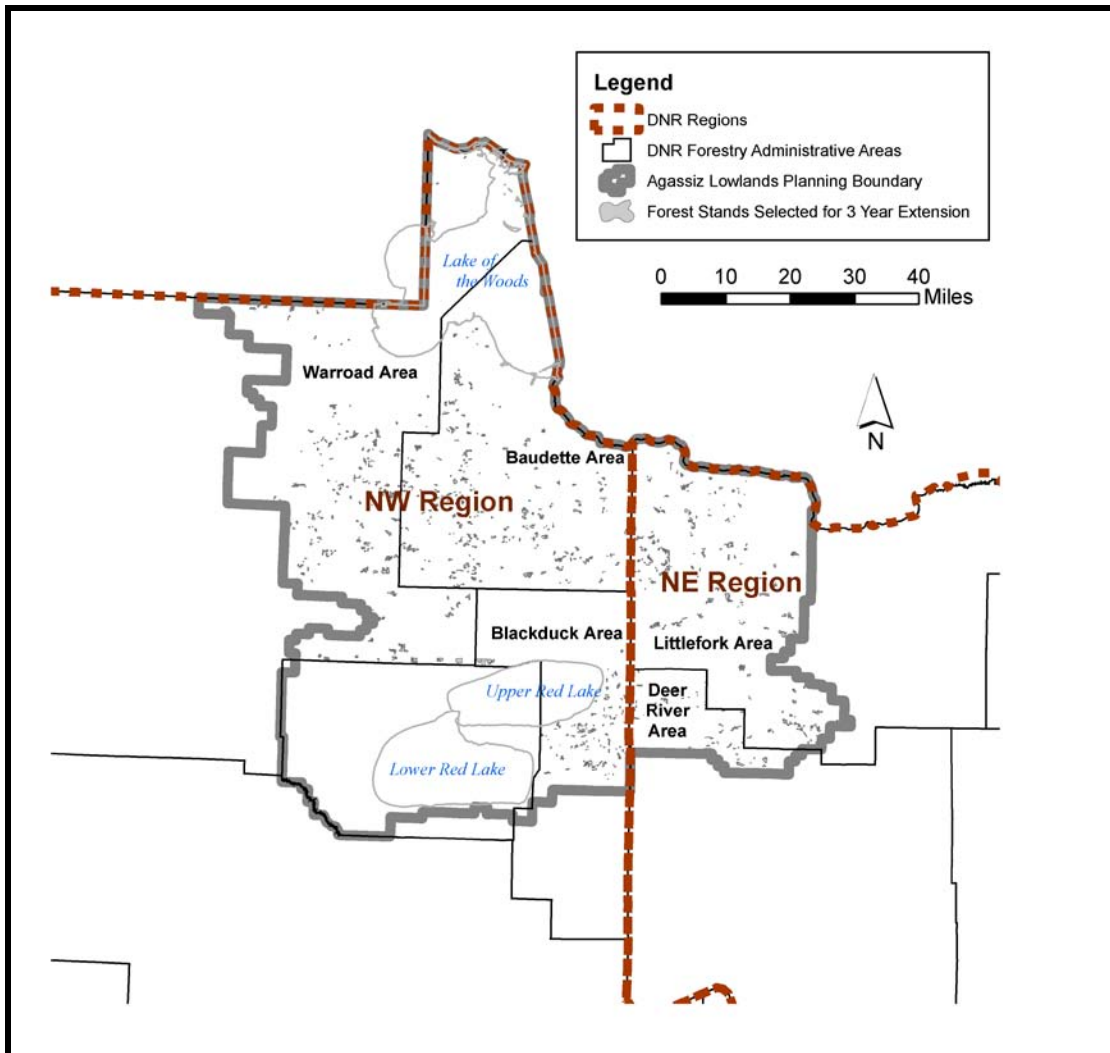
Table 3.4 Agassiz Lowlands Three-Year Extension: New Access Needs by Forestry Area¹

Forestry Area	Season of Use	Miles of Resource Management Access Route	Miles of Temporary Access Route	Total Miles
Baudette	Summer	0.1	0	0.1
	Winter	1.3	1.5	2.8
Blackduck	Summer	0	0	0
	Winter	13.3	0.1	13.4
Deer River	Summer	0	0	0
	Winter	6.6	0	6.6
Littlefork	Summer	0.1	0	0.1
	Winter	12.1	0.2	12.3
Warroad	Summer	0	0	0
	Winter	9.4	0	9.4
AL Totals	Summer	.2	0	.2
	Winter	42.7	1.8	44.5

¹ Reflects Forestry Area boundaries that were adjusted after stand selection.

Figure 3.1 identifies the four Forestry Areas included within the Agassiz Lowlands ECS subsection, identifies the stands selected and placed on the Three-Year Stand Exam List. This Figure also identifies the Northwest and Northeast DNR administrative Regional boundaries.

Figure 3.1 Agassiz Lowlands Three-Year Extension
Selected Stands within each Forestry Area¹



¹ Reflects Forestry Area boundaries that were adjusted after stand selection.

3.3 Comparison of Agassiz Lowlands Three-Year Extension to past efforts by Forestry Areas within the subsection

To address Department and stakeholder interests, comparisons between SFRMP stand exam lists and past harvests are made and included in this Three-Year Extension. The following evaluations are addressed:

- Comparison between the treatment level acres identified in the original Agassiz Lowlands 7-Year SFRMP to the treatment level acres identified in the Three-Year Extension Stand Exam List; and,
- Comparisons of past harvest volume by Forestry Areas compared to volumes as projected from treatment of stands on the Three-Year Extension Stand Exam List.

3.3.1 Comparison between the treatment levels identified in the original Agassiz Lowlands 7-Year SFRMP to the treatment levels identified in the AL Three-Year Extension

Table 3.5 compares the average annual acres by prescription from the original AL 7-Year SFRMP stand exam list to the AL Extension Three-year Stand Exam List. As noted in this document, data management improvements have been made over recent years. With these improvements, comparisons back to earlier data is not always consistent and in some cases not possible. In comparing Annual Average Acres between the 7-Year SFRMP and Three-Year Extension, several clarifications are necessary and stated in footnotes for this table.

Table 3.5 shows that some reduction in three-year Average Annual Acres will occur from the treatment levels identified in the 7-year stand exam list. This reduction is consistent with observations made in the original AL SFRMP which recognized that, due to several factors, an accelerated harvest of the aspen/balm/birch and jack pine cover types was implemented and that this accelerated harvest would not continue past the 7-year plan. With the end of the accelerated harvest and a return to a more normal harvest level, aspen/balm/birch stand exam acres will decrease by about 1/3 for the three-year extension and jack pine stand exam acres will decrease by about 2/3.

In addition, it is noted that on the 7-year stand exam list, lowland conifer stand exams were intentionally identified at a lower treatment level than what could have been sustained during the seven years. As the 7-year plan was prepared, weak markets resulted in fewer acres of tamarack and black spruce placed on the 7-year stand exam list than could have been harvested sustainably. Reflecting this in the Three-Year Extension, tamarack stand exam acres will increase by about 1/3, and black spruce stand exam acres will increase by about 40%.

Table 3.5 Agassiz Lowlands Three-Year Extension: Comparison of Acres from 7-Year Stand Exam List to the Three-Year Extension

Forestry Area	AL SFRMP (7-year plan) (2004-2010) Annual Avg. Acres			AL Three-Year Extension (2011-2013) Annual Avg. Acres	AL Three-Year Extension (2011-2013) Annual Avg. Acres (2010 Forestry Areas) ⁵
	Manage Prescription ¹	On-site Visit ²	Total	Manage Prescription ^{1,2}	Manage Prescription ^{1,2}
Baudette	4,640	9,567	14,207	4,948	3,459
Blackduck	1,508	1,627	3,136	1,491	859
Deer River				0	403
Littlefork	2,433	3,701	6,131	1,255	2,972
Warroad	4,531	982	5,514	3,115	3,115
Total	13,112	15,877	28,988	10,808 ⁴	10,808 ⁴

Footnotes:

- ¹ *Manage Prescription* field includes multiple preliminary prescriptions (even aged/clearcut, thinning, seed tree, shelterwood, uneven aged harvest and on-site visit).
- ² These *On-site Visit* stands were primarily High Risk/Low Volume stands with the site visit intended to result in either an update of the inventory and/or manage as appropriate. The identification of HRLV stands in the original seven- year plan was viewed as being a “one-time” effort to address all stands meeting the HRLV criteria. During the 7-year implementation period, only a portion of the HRLV stands were actually field visited, and of those visited, relatively few stands resulted in an active management prescription (e.g., harvest). The cords they produced were inconsequential.
- ³ The Three-Year Extension did not include a separate pool of High Risk/Low Volume stands (see footnote 1 above). Stands were selected if they needed to be managed. A small portion of those selected are considered low volume stands. Stands with the prescriptions *Manage for Understory* (352 acres) and *Field Inventory* (3112) are removed from these figures because the Agassiz Lowlands 7-year plan did not use the preliminary prescriptions of *Manage for Understory* or *Field Inventory*.
- ⁴ Some cover types (predominantly Norway pine thinnings) will be mostly selected annually and are not reflected here. It is anticipated that an additional 589 acres of NP thinning will be planned annually, for an annual average total of 11,427 acres. Other species not reflected here (ash/lowland hardwoods and upland black spruce) will deliver an insignificant number of acres. Because this three-year stand exam list is an extension of the original AL SFRMP, stand selection criteria for these cover types is the same as identified in the original AL SFRMP. Forestry Areas were requested to continue their past efforts for these cover types and to select these stands and place them on annual plan additions in the course of their normal management activities. These stands will be selected on an annual basis depending on basal area, markets proximity to other stands being managed, and insect and disease guidelines.
- ⁵ Reflects Forestry Area boundaries that were adjusted after stand selection.

3.3.2 Comparisons of past harvest volume to volumes as projected from treatment of stands on the Three-Year Extension Stand Exam List.

The DNR develops annual planned treatment levels on a cover type acreage basis. Converting cover type acres on the stand exam lists to estimates of timber volumes (in cords) that may be produced is a necessary step in comparing past timber volumes produced to what is estimated from implementation of this AL Three-Year Extension. In comparing past volumes with volumes projected from the Agassiz Lowlands subsection over the next three years, the following must be considered:

- Volumes (cords) that are projected to result from treatment of stands identified on the Three-Year Extension Stand Exam List.
- Volumes (cords) projected from treatment of stands that may be added to Area Annual Stand Exam Lists (ASEL) or added as Annual Plan Additions (APAs) by Forestry Areas.
In preparing the Three-Year Extension Stand Exam List, staff determined that Forestry Areas would primarily identify opportunities for ash and lowland hardwood harvests and Norway pine thinnings on a year-to-year basis as additions to Area ASELs or as APAs. As a result, such stands were not included on the Three-Year Extension Stand Exam List. These acres will be selected based on stand selection criteria; proximity to other stands scheduled for treatment; insect, disease and blowdown occurrences; EAB management strategy; and, markets. The intent of identifying these additional stands is to maintain flexibility in harvests to react to natural and economic factors.
- Volumes (cords) projected to result from treatment of a backlog of stands in the Blackduck Forestry Area.
This backlog was identified through the monitoring analysis prepared for the 7-year plan and consists of stands included on the original AL SFRMP 7-year Stand Exam List that have not yet been site visited. As discussed earlier in this Extension because these stands were on the original 7-year Stand Exam List, they were considered “treated” during the development of the AL Three-Year Stand List Extension to make sure that they were not re-selected as

part of the three-year list. The Blackduck Forestry Area will site visit all stands on this backlog over the years of the three-year extension period (FY2011, FY2012 and FY2013, plus visit all stands identified on the AL Extension Three-Year Stand Exam List.

Table 3.6 identifies the estimated volume in cords resulting from implementation of this Three-Year Extension using the Department FIM based volume estimating method. Figure 3.2 identifies the calculations used for estimating cover type and species volumes (from acres to cords) by the Department. The harvest volume estimate (FY2011, FY2012, FY2013) provided in Table 3.6 is based on treatment acres, treatment method, and average cords per acre based on forest inventory data and preliminary prescriptions (cords estimated to result from even-aged harvests, partial cut acres and on-site visit cords). The cords estimated represents a culmination of past Division experience as to the volume that can be reasonably anticipated from the various treatment methods cited.

Table 3.6 does not include acres and volumes that may result from red pine thinning and ash/lowland hardwood stands added to ASELS or as APAs; and from the Blackduck Area backlog remaining from the 7-year list (see Table 3.7 for an estimate of potential volumes from these sources).

The amount of timber actually offered for sale will differ from these projected acres and volumes for the following reasons:

1. Forest inventory volumes will differ from timber appraisal volumes. Inventory data is not designed to provide information accurate or specific enough for timber sale purposes, more specific/precise information and evaluation is gained through site visits;
2. Stands may have changed since the stand was last on-site visited for inventory (old stands that are falling apart and/or converting to other types due to storm, fire, I&D, flooding damage). These observations are made and recorded under the "on site visit" prescription;
3. Refinement of stand boundaries. On-site visits result in stand boundary adjustments that frequently result in fewer acres in the stand;
4. Errors in the inventory;
5. Complexity of management decisions go beyond the criteria that are used to identify stands for inclusion in the Three-Year Extension Stand Exam List. This is particularly true for northern hardwoods and other uneven-aged types where age and basal area criteria do not capture considerations for quality; and,
6. Management plan (i.e., stand exam) acres represent acres to be treated (not necessarily harvested). Treatment can include harvest, partial harvest; manage for understory, inventory alteration, and even a decision to do nothing. Not all management plan (i.e., stand exam) acres result in timber sales.

**Table 3.6 Agassiz Lowlands Three-Year Extension:
Average Annual Volume Projections by Cover Type Resulting from the Three-Year Stand Exam List**

MANAGEMENT PLAN	Ash/LH	Aspen/BG	Birch	Norway Pine*	Jack Pine	White Spruce	Balsam Fir	LL Black Spruce	Tam-arack	Misc	Total
1. Plan Total Acres	681	5,146	181	244	438	67	466	1,551	1,909	127	10,810
2. Even-age Acres	21	3,426	40		418	8	342	1,347	1,839	5	7,446
3. Cords/Acre	15	17	15	25	22	15	15	12	12	5	
4. Even-age Cords		58,242	600	0	9,196	120	4,959	16,164	22,068	25	111,374
5. Partial cut Acres	470	15	4	27		35					551
6. Cords/Acre	4	5	5	8	7	5	4	4	4	0	
7. Partial Cut Cords	2,073	77	18	203	0	158	0	0	0	0	2,527
8. Subtotal Cords	2,073	58,319	618	203	9,196	278	4,959	16,164	22,068	25	113,901
9. OSV Acres	79	369	29	216	10	20	33	68			824
10. Cords/Acre	7	9	8	13	11	8	7	6	6	0	
11. OSV Cords	290	1,568	109	1,350	55	75	120	204	0	0	3,771
12. Annual Ave Plan Cords	2,363	59,887	727	1,553	9,251	353	5,079	16,368	22,068	25	117,672

* An estimated additional 500 -600 acres of Norway pine thinnings to be included as Annual Plan Additions over the three year period based on field staff determinations and markets.

Figure 3.2 identifies the definitions and methods used to estimate the volumes identified in Table 3.6

**Figure 3.2 Agassiz Lowlands Three-Year Extension:
DNR FIM-based Method for Estimating Cover Type and Species Volumes**

1. Management Plan Total Acres: The total cover type acres selected for harvest or stand examination in the management plan. These stand examination acres are determined for the subsection by cover type considering existing acreage, age-class distribution, rotation age, reserve areas, ERF, and application of other various forest management guidelines. <i>Note: Not all management plan acres result in timber sale acres.</i>
2. Even-age Acres: Acres from Step 1. <i>Management Plan Total Acres</i> that have even-aged management prescriptions. Even-aged practices include prescription codes 1100 - 1299.
3. Cords/Acre: Average cord/acre figures for each cover type are obtained from reports based on forest inventory. Volume tables are based on subsection data and are gross volume figures.
4. Even-Age Cords: This is a gross volume estimate of even-age harvest cords determined by multiplying <i>2.Even-age Acres X 3.Cords/Acre</i> .
5. Partial Cut Acres: Acres from Step 1. <i>Management Plan Total Acres</i> that have uneven-aged and thinning management prescriptions. Partial-cut practices include prescription codes 1300 - 1850.
6. Partial Cut Cords/Acre: Cords per Acre in 3. <i>Cords/Acre</i> multiplied by 0.3. Assumes on the average, 30% of the volume is removed in a partial cut.
7. Partial cut Cords: This is a gross volume estimate of partial cut harvest cords determined by multiplying <i>5.Partial cut Acres X 6.Cords/Acre</i> .
8. Subtotal Cords of Even-Age Acres and Partial Cut Acres
9. On-site Visit (OSV) Acres: This applies to acres with an "on site visit" prescription (9100).
10. OSV Cords/Acre: Cords per Acre in 3. <i>Cords/Acre</i> multiplied by 0.5. Assumes on the average, volume in OSV stands is 50% of the average cords per acre for the cover type.
11. OSV Cords: This is a gross volume estimate of FV harvest cords determined by multiplying <i>9. FV Acres X 10. OSV Cords/Acre./2</i> OSV cords were divided by 2 since it is estimated that approximately one-half of these stands will result in a timber sale (other 50% would be alterations and/or succession to other cover types, etc.).
12. Annual Ave Plan Cords: This is an annual average of cords available for timber harvest in the subsection based on the three year SFRMP extension plan. Determined by adding <i>4. Even-age Cords, 7. Partial cut Cords, and 11. OSV Cords</i> . These are gross volume figures that include acres that may not result in timber sales and volumes that will be reserved to meet site-level forest management guidelines or other guidelines and policies.

In addition to the Department FIM-Based Volume projection method, potential timber volumes were also projected using Walters-Ek yield equations. The Walters-Ek yield equations are frequently used in current forest management modeling software and were applied to the Three-Year Stand Exam List to provide a range of volume estimates.

Table 3.7 identifies Historical Cords Sold from the Agassiz Lowlands subsection for years 1995 through 2009. This table identifies that annual average of cords sold from 1995 through 2002 was 157,600 cords. The Agassiz Lowlands SFRMP (7-year plan) was implemented between FY2004 and FY2010 and shows an increase of the annual average cords sold to 205,500 cords. The annual average increase between these two implementation periods can be attributed primarily to a planned accelerated harvest in the aspen/balm/birch and jack pine cover types. The Agassiz Lowlands SFRMP (7-year plan) recognized that a return to more normal harvests in these cover types was likely following implementation of the planned accelerated harvest.

This table provides a projection of the cords that may be produced from the Three-Year Stand Exam List; from stands added to the ASELS (stands in addition to those taken from the Extension Three-Year Stand Exam List); stands added as APAs; and, from the Blackduck Area backlog, using both the Department FIM-based method and Walters-Ek yield equations.

Table 3.7 shows that harvests are comparable with the pre-accelerated harvest volumes sold. The Department FIM-Based Method projects that the Three-Year Extension Stand Exam List may produce approximately 117,700 cords, while the Walters-Ek Method estimates a total harvest of approximately 146,300 cords. Considering additional volumes from stands added to ASELS, and APAs; and, from the Blackduck backlog, the total annual projection of timber volume ranges from 132,700; cords (FIM-based) to 164,300 cords (Walters-Ek). Although historical volumes in cords sold are higher than volumes projected solely from the Three-Year Extension Stand Exam List, this reduction was anticipated when the original AL SFRMP 7-year plan was developed (i.e., a return to more normal harvest levels was expected). The total projection of cords that may be available from the Agassiz Lowlands subsection over the three-year extension period (i.e., potential cords from the Three-Year Stand Exam List plus cords that may be available from additions to ASELS, APAs, and the Blackduck Area backlog) is projected to be roughly the same as in the pre-accelerated harvests years (i.e., an projected 133,000 - 164,000 cords per year compared to an average cords sold of 157,600 from FY1995 – FY2002).

**Table 3.7 Agassiz Lowlands Three-Year Extension:
Volume Comparison of Historical Cords Sold with Projected Cords**

Historical Cords Sold		Agassiz Lowlands Annual Volume Estimate FY2011-FY2013	
		Department FIM Based Volume Projection Method	Walters –Ek Volume Projection Method
Annual Average Sold FY'95 –FY'02	157,600	NA	NA
Annual Average Sold FY'03 – FY'09	205,500*	NA	NA
Annual Average Three-Year Extension FY'11 – FY'13	NA	117,672	146,306
Potential Add'l Volume from RP Thinning, Ash/LH & Backlog		15,000	18,000
Totals		132,672	164,306

*Reflects accelerated harvests in aspen/balm/birch and jack pine, as planned in the AL SFRMP 7-year plan.

As stated above, during the accelerated harvest years (FY2003 – FY2009) total cords sold was approximately 205,500 cords. The original 7-year AL SFRMP anticipated that future harvests (FY2011 and beyond) could not maintain this level of harvest and still achieve a balanced age class distribution in the future in certain forest types. As support, Figures 3.3 and 3.4 identify two of the significant cover types in the Agassiz Lowlands subsection and show actual acres by age class from the DNR forest inventory at three points in time, plus one projection:

- 1989;
- 2003 (start of accelerated harvest period);
- 2009 (end of the accelerated harvest period); and,
- 2010 (a projection made based on the original 7-year SFRMP stand list).

Figure 3.3 Agassiz Lowlands SFRMP Aspen-Bi-BG Cover Type Acres by Age Class

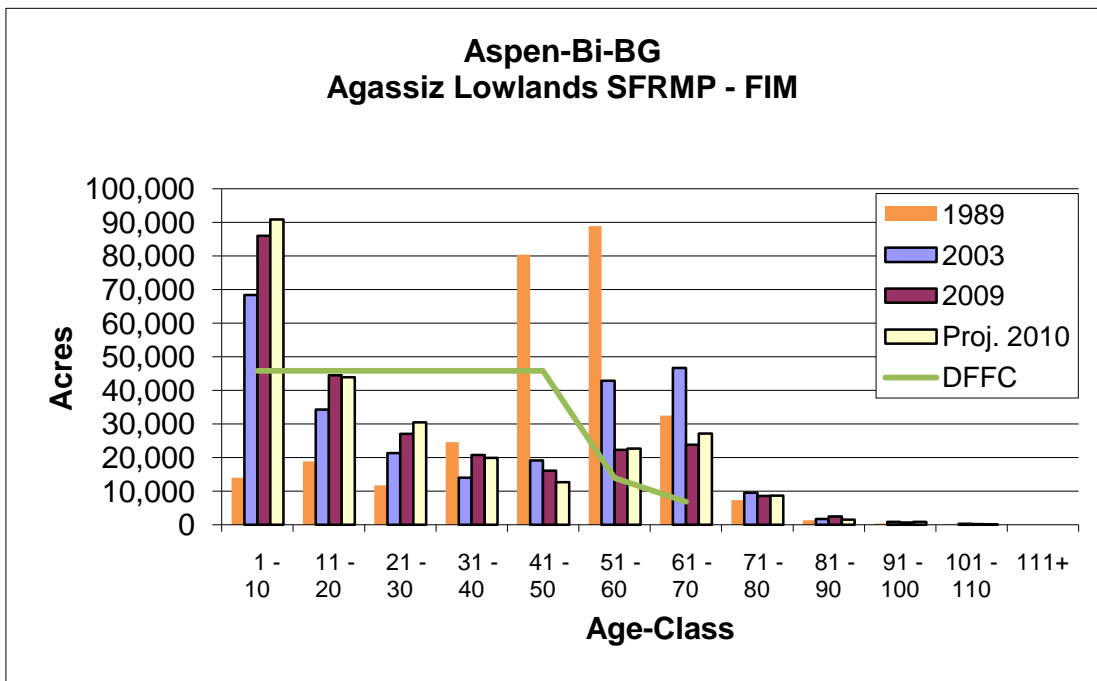
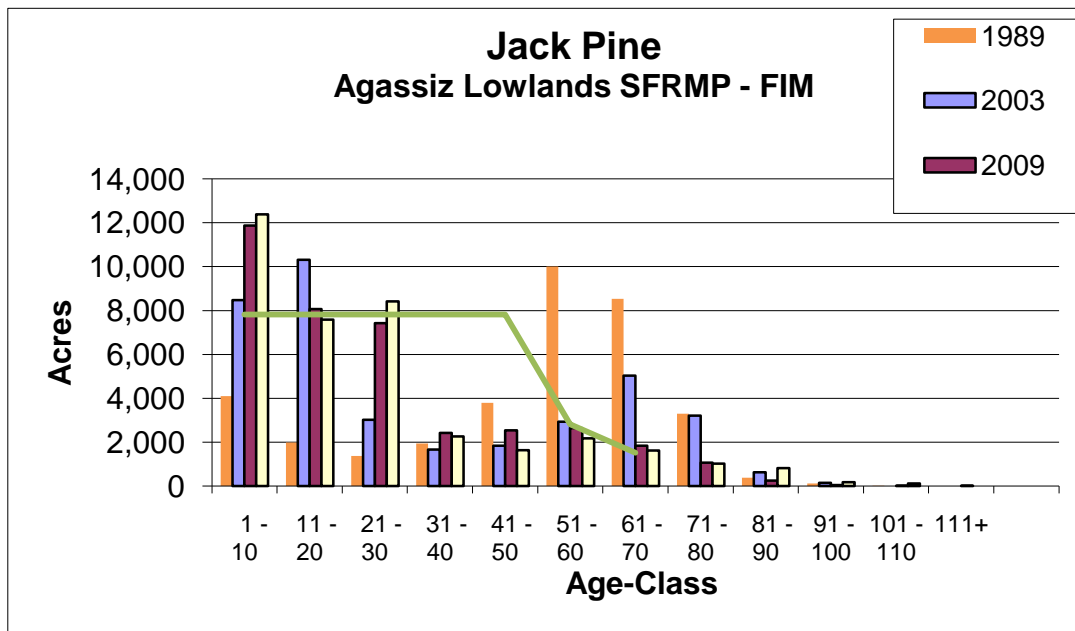


Figure 3.4 Agassiz Lowlands SFRMP –Jack Pine Cover Type Acres by Age Class



Essentially these two Figures identify that for these cover types:

- There was a large age-class imbalance in these types in the late 1980's that the DNR has been working to address over the past two decades. The desired future forest condition (DFFC) is to have a more balanced age-class distribution to minimize fluctuations in available timber volumes and habitat.
- In 2003 (beginning of the accelerated harvest years) significant acres existed beyond normal rotation ages;
- In 2009, (toward the end of the accelerated harvest years), the total acres for these two cover types were reasonably consistent with the 2010 projected acres.
- The accelerated harvest succeeded in reducing the acres of these cover types in mature age classes and that continuing accelerated harvests could worsen the existing age class imbalances, and lead to a greater decline in available mature acres over the next two to three decades,

Appendices to the Agassiz Lowlands SFRMP Three-Year Extension:

- Appendix A** Agassiz Lowlands SFRMP Three-Year Extension Stand Exam List
- Appendix B** Three-year Stand List with White Pine
- Appendix C** Agassiz Lowlands SFRMP Monitoring Report
- Appendix D** Stand Selection Instructions used to prepare the Agassiz Lowlands Three- Year Stand Exam List Extension
- Appendix E** Glossary
- Appendix F** Responses to Comments received on the Draft AL SFRMP Three-Year Extension document

Appendix A. Agassiz Lowlands SFRMP Three-Year Extension Stand Exam List

The following table identifies the stands selected for the Agassiz Lowlands SFRMP three-year stand selection list extension. The data fields are as follows:

1. Forestry Area: The subsection has five DNR Forestry Area offices – Baudette, Blackduck, Littlefork, Warroad and Deer River.
2. Twp; Rg; S: Township number; Range number; Section number.
3. Stand No.: Unique stand number assigned in the township.
4. Cover type: The forest cover type classification of the stand. Typically, the predominant tree species or tree species group in the stand.
5. Age: Age of the stand in 2009.
6. Acres: Stand acres identified to be reviewed for potential treatment (may not include entire stand)
7. Preliminary Prescription: The proposed general action to be taken to achieve a desired management objective based on information available at the time of stand selection. This will be verified or revised based on a subsequent on-site visit. See Appendix E Glossary for definitions.
8. Stand Exam Year: Fiscal Year (FY = July 1 through June 30). The FY when the stand examination is planned. Following the stand evaluation, if the stand conditions are suitable for timber harvest then a timber appraisal is completed.
9. New Access: Estimated miles of new road/route needed to access the stand. Mileage is assigned to the stand at the end of the new access route.

Table A.1 Agassiz Lowlands Three-Year Extension Stand Exam List by Forestry Area¹

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Baudette	Lake of the Woods	157	30	3	20	Aspen	67	7.6	2013	Even Aged	
Baudette	Lake of the Woods	157	30	3	506	Aspen	66	6.7	2013	Even Aged	
Baudette	Lake of the Woods	157	30	4	16	Aspen	65	25.1	2013	Even Aged	
Baudette	Lake of the Woods	157	30	4	264	Aspen	52	6.6	2013	Even Aged	
Baudette	Lake of the Woods	157	30	10	342	Aspen	79	14.5	2011	Manage for Understory	
Baudette	Lake of the Woods	157	30	11	323	Aspen	68	35.3	2011	Alteration - Update Type	
Baudette	Lake of the Woods	157	30	17	102	Aspen	48	2.7	2011	Even Aged	Y
Baudette	Lake of the Woods	157	30	20	105	Aspen	61	9.1	2011	Even Aged	Y
Baudette	Lake of the Woods	157	30	24	133	Tamarack	127	7.7	2011	Manage for Understory	
Baudette	Lake of the Woods	157	30	29	410	Aspen	68	83.4	2013	Even Aged	
Baudette	Lake of the Woods	157	31	1	90	Balm of Gilead	56	41.4	2013	Uneven Aged	
Baudette	Lake of the Woods	157	31	1	143	Aspen	57	4.3	2013	Even Aged	
Baudette	Lake of the Woods	157	31	2	104	Aspen	66	21.3	2011	Even Aged	
Baudette	Lake of the Woods	157	31	4	29	Ash	96	57.2	2011	Uneven Aged	
Baudette	Lake of the Woods	157	31	4	38	Aspen	70	38.3	2011	Even Aged	
Baudette	Lake of the Woods	157	31	4	116	Aspen	55	5.6	2011	Even Aged	
Baudette	Lake of the Woods	157	31	5	89	Birch	60	31.7	2011	Alteration - Update Type	
Baudette	Lake of the Woods	157	31	6	49	Aspen	75	45.6	2012	Even Aged	
Baudette	Lake of the Woods	157	31	7	667	Aspen	61	125.8	2012	Even Aged	
Baudette	Lake of the Woods	157	31	7	672	Balm of Gilead	71	4.3	2011	Even Aged	
Baudette	Lake of the Woods	157	31	8	660	Aspen	58	15	2011	Even Aged	
Baudette	Lake of the Woods	157	31	9	134	Aspen	65	27.9	2011	Even Aged	
Baudette	Lake of the Woods	157	31	9	162	Aspen	68	5.1	2011	Even Aged	
Baudette	Lake of the Woods	157	31	10	139	Balm of Gilead	80	13.4	2011	Even Aged	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Baudette	Lake of the Woods	157	31	10	141	Aspen	60	10.9	2011	Even Aged	
Baudette	Lake of the Woods	157	31	11	195	Aspen	65	48	2013	Even Aged	
Baudette	Lake of the Woods	157	31	12	156	Aspen	61	89.8	2013	Even Aged	
Baudette	Lake of the Woods	157	31	12	158	Balm of Gilead	50	29	2013	Even Aged	
Baudette	Lake of the Woods	157	31	17	282	Aspen	85	7.9	2011	Even Aged	
Baudette	Lake of the Woods	157	31	17	318	Black Spruce, Lo	88	6.5	2011	Even Aged	
Baudette	Lake of the Woods	157	31	17	324	Black Spruce, Lo	91	18.8	2011	Even Aged	
Baudette	Lake of the Woods	157	31	18	619	Balm of Gilead	99	6.4	2011	Alteration - Update Age	
Baudette	Lake of the Woods	157	31	18	677	Ash	101	42.5	2011	Alteration - Update Age	
Baudette	Lake of the Woods	157	31	18	679	Ash	91	39.1	2011	Uneven Aged	
Baudette	Lake of the Woods	157	31	28	493	Balm of Gilead	53	12	2013	Even Aged	
Baudette	Lake of the Woods	157	31	28	516	Aspen	54	3.6	2013	Even Aged	
Baudette	Lake of the Woods	157	31	28	530	Aspen	62	4.8	2013	Even Aged	
Baudette	Lake of the Woods	157	31	29	524	Balm of Gilead	58	6.3	2013	Even Aged	
Baudette	Lake of the Woods	157	32	20	443	Black Spruce, Lo	135	181.9	2012	Even Aged	
Baudette	Lake of the Woods	157	32	21	438	Black Spruce, Lo	79	25	2012	Even Aged	
Baudette	Lake of the Woods	157	32	21	440	Black Spruce, Lo	135	130.7	2012	Even Aged	
Baudette	Lake of the Woods	157	32	23	444	Black Spruce, Lo	129	12.9	2012	Even Aged	
Baudette	Lake of the Woods	157	32	23	670	Black Spruce, Lo	129	81.8	2012	Even Aged	
Baudette	Lake of the Woods	157	32	28	479	Black Spruce, Lo	70	6.9	2011	Even Aged	
Baudette	Lake of the Woods	157	33	14	504	Black Spruce, Lo	105	15.4	2011	Even Aged	
Baudette	Lake of the Woods	157	33	15	502	Aspen	62	21.9	2011	Even Aged	
Baudette	Lake of the Woods	157	33	15	508	Balsam Fir	82	5.6	2011	Even Aged	
Baudette	Lake of the Woods	157	33	18	147	Aspen	75	17	2011	Alteration - Update Type	
Baudette	Lake of the Woods	157	33	18	148	Aspen	75	11.5	2011	Alteration - Update Type	
Baudette	Lake of the Woods	157	33	18	158	Aspen	57	23.3	2011	Even Aged	
Baudette	Lake of the Woods	157	33	18	185	Aspen	54	6.2	2011	Alteration - Update Type	
Baudette	Lake of the Woods	157	33	30	399	Aspen	69	24.9	2011	Alteration - Update Age	
Baudette	Lake of the Woods	157	34	2	33	Aspen	89	9.4	2011	Even Aged	
Baudette	Lake of the Woods	157	34	8	385	Black Spruce, Lo	154	61	2011	Even Aged	
Baudette	Lake of the Woods	157	34	12	88	Ash	4	7.9	2011	Alteration - Update Type	
Baudette	Lake of the Woods	157	34	13	180	Black Spruce, Lo	154	32.9	2013	Even Aged	
Baudette	Lake of the Woods	157	34	13	518	Black Spruce, Lo	155	22.2	2013	Even Aged	
Baudette	Lake of the Woods	157	34	14	163	Black Spruce, Lo	146	47.4	2013	Even Aged	
Baudette	Lake of the Woods	157	34	14	188	Tamarack	146	16.6	2013	Even Aged	
Baudette	Lake of the Woods	157	34	14	402	Black Spruce, Lo	142	109.3	2013	Even Aged	
Baudette	Lake of the Woods	157	34	21	238	Ash	88	24.3	2013	Uneven Aged	
Baudette	Lake of the Woods	157	34	21	455	Aspen	64	23.2	2013	On Site Visit	
Baudette	Lake of the Woods	157	34	21	542	Balsam Fir	59	5.9	2013	Even Aged	
Baudette	Lake of the Woods	157	34	22	219	Aspen	75	35.7	2013	On Site Visit	Y
Baudette	Lake of the Woods	157	34	23	229	Aspen	66	10.4	2013	On Site Visit	
Baudette	Lake of the Woods	157	34	24	215	Aspen	77	9.1	2013	Even Aged	
Baudette	Lake of the Woods	157	34	24	223	Balsam Fir	75	10.2	2013	Even Aged	
Baudette	Lake of the Woods	157	34	24	498	Aspen	57	3.6	2013	On Site Visit	
Baudette	Lake of the Woods	157	34	24	500	Aspen	138	64.6	2013	On Site Visit	
Baudette	Lake of the Woods	157	34	25	262	Aspen	45	30.2	2011	Alteration - Update Type	
Baudette	Lake of the Woods	157	34	25	277	Birch	66	4.3	2012	On Site Visit	
Baudette	Lake of the Woods	157	34	25	279	Aspen	75	62.2	2012	On Site Visit	
Baudette	Lake of the Woods	157	34	25	532	Aspen	52	32.3	2012	On Site Visit	
Baudette	Lake of the Woods	157	34	25	558	Aspen	55	5.5	2012	On Site Visit	
Baudette	Lake of the Woods	157	34	28	272	Aspen	68	6.1	2011	Even Aged	Y
Baudette	Lake of the Woods	157	34	28	462	Aspen	75	60.9	2011	Even Aged	
Baudette	Lake of the Woods	157	34	28	560	Aspen	77	27.3	2011	Even Aged	Y
Baudette	Lake of the Woods	157	34	33	360	Aspen	83	103.4	2011	Even Aged	
Baudette	Lake of the Woods	157	34	34	355	Aspen	68	12.6	2011	Even Aged	
Baudette	Lake of the Woods	157	34	34	578	Aspen	56	4.7	2011	Even Aged	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Baudette	Lake of the Woods	157	34	34	581	Aspen	70	15.2	2011	Even Aged	
Baudette	Lake of the Woods	157	34	35	334	Aspen	67	22.2	2011	Even Aged	
Baudette	Lake of the Woods	157	35	4	6	Aspen	69	83.4	2013	On Site Visit	
Baudette	Lake of the Woods	157	35	4	7	Ash	80	7.9	2011	Uneven Aged	
Baudette	Lake of the Woods	157	35	4	15	Ash	75	5.9	2011	Uneven Aged	
Baudette	Lake of the Woods	157	35	4	20	Balm of Gilead	53	11.1	2011	On Site Visit	
Baudette	Lake of the Woods	157	35	5	244	Aspen	57	75.8	2013	Even Aged	
Baudette	Lake of the Woods	157	35	5	246	Ash	70	35.4	2013	On Site Visit	
Baudette	Lake of the Woods	157	35	6	2	Aspen	58	14.3	2013	Even Aged	
Baudette	Lake of the Woods	157	35	11	89	Balm of Gilead	64	5.5	2011	Alteration - Update Type	
Baudette	Lake of the Woods	157	35	11	96	Balsam Fir	50	11.8	2011	Alteration - Update Type	
Baudette	Lake of the Woods	157	35	22	159	Aspen	77	39.2	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	30	13	417	Black Spruce, Lo	121	20.9	2013	Even Aged	
Baudette	Lake of the Woods	158	30	13	418	Cutover Area	0	69.8	2011	Alteration - Update Age	
Baudette	Lake of the Woods	158	30	13	419	Black Spruce, Lo	129	59.4	2013	Even Aged	
Baudette	Lake of the Woods	158	30	13	420	Black Spruce, Lo	131	139.6	2013	Even Aged	
Baudette	Lake of the Woods	158	30	13	569	Black Spruce, Lo	141	17.6	2013	Even Aged	
Baudette	Lake of the Woods	158	31	34	178	Black Spruce, Lo	130	73.3	2012	Even Aged	
Baudette	Lake of the Woods	158	32	2	11	Aspen	66	6	2012	Even Aged	
Baudette	Lake of the Woods	158	32	2	328	Balm of Gilead	53	7.5	2012	Even Aged	
Baudette	Lake of the Woods	158	32	2	843	Marsh	0	15.6	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	32	2	849	Unknown	0	3.7	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	32	3	330	Balm of Gilead	56	43.5	2012	Even Aged	
Baudette	Lake of the Woods	158	32	3	820	Balm of Gilead	49	21.4	2012	Even Aged	
Baudette	Lake of the Woods	158	32	4	845	Unknown	0	33.2	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	32	4	847	Unknown	0	10.3	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	32	5	315	Tamarack	40	74.3	2011	Even Aged	
Baudette	Lake of the Woods	158	32	5	331	Tamarack	77	95.8	2011	Even Aged	Y
Baudette	Lake of the Woods	158	32	9	368	Aspen	66	33	2011	Even Aged	
Baudette	Lake of the Woods	158	32	12	95	Aspen	72	3.7	2013	Even Aged	
Baudette	Lake of the Woods	158	32	12	129	Aspen	66	3.6	2013	Even Aged	
Baudette	Lake of the Woods	158	32	13	138	Aspen	66	22.1	2013	Even Aged	
Baudette	Lake of the Woods	158	32	13	598	Aspen	53	21.2	2013	Even Aged	Y
Baudette	Lake of the Woods	158	32	14	135	Upland Grass	0	8.3	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	32	14	151	Aspen	64	6.2	2013	Even Aged	
Baudette	Lake of the Woods	158	32	16	384	Aspen	67	100.1	2011	Even Aged	
Baudette	Lake of the Woods	158	32	17	132	White Spruce	53	4.7	2011	Thinning	
Baudette	Lake of the Woods	158	32	17	425	Jack Pine	55	3	2011	Even Aged	
Baudette	Lake of the Woods	158	32	17	595	Aspen	53	10.1	2011	Even Aged	
Baudette	Lake of the Woods	158	32	17	831	Aspen	58	19.5	2011	Even Aged	
Baudette	Lake of the Woods	158	32	22	479	Aspen	64	88.6	2011	Even Aged	
Baudette	Lake of the Woods	158	32	23	766	Balsam Fir	44	82.7	2012	Even Aged	
Baudette	Lake of the Woods	158	32	23	767	Aspen	7	24.8	2011	Alteration - Update Age	
Baudette	Lake of the Woods	158	32	23	768	Balsam Fir	44	14.3	2012	Even Aged	
Baudette	Lake of the Woods	158	32	23	769	Balsam Fir	44	23.5	2012	Even Aged	
Baudette	Lake of the Woods	158	32	28	780	Aspen	62	60.2	2012	Even Aged	
Baudette	Lake of the Woods	158	32	30	511	Ash	118	31.7	2013	Uneven Aged	
Baudette	Lake of the Woods	158	32	30	512	Aspen	77	1.5	2013	Uneven Aged	
Baudette	Lake of the Woods	158	32	34	550	Aspen	63	17.6	2011	Even Aged	
Baudette	Lake of the Woods	158	32	34	839	Aspen	12	11.7	2011	Alteration - Update Age	
Baudette	Lake of the Woods	158	33	4	68	Aspen	83	24.3	2011	Manage for Understory	
Baudette	Lake of the Woods	158	33	6	5	Black Spruce, Lo	181	27.9	2011	Even Aged	
Baudette	Lake of the Woods	158	33	6	13	Jack Pine	75	4.2	2011	Even Aged	
Baudette	Lake of the Woods	158	33	6	17	Aspen	41	4	2011	Even Aged	
Baudette	Lake of the Woods	158	33	6	49	Aspen	61	6.3	2011	Even Aged	
Baudette	Lake of the Woods	158	33	6	792	Aspen	54	4.8	2011	Even Aged	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Baudette	Lake of the Woods	158	33	14	263	White Spruce	101	19.2	2011	Uneven Aged	
Baudette	Lake of the Woods	158	33	14	287	Aspen	73	46.3	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	33	21	432	Aspen	75	7	2012	Even Aged	
Baudette	Lake of the Woods	158	33	21	436	Aspen	67	52.4	2012	Even Aged	
Baudette	Lake of the Woods	158	33	23	441	Aspen	73	16	2011	Alteration - Update Age	
Baudette	Lake of the Woods	158	33	23	463	Aspen	77	11.7	2013	Even Aged	
Baudette	Lake of the Woods	158	33	23	834	Ash	70	7.5	2011	Alteration - Update Age	
Baudette	Lake of the Woods	158	33	24	708	Aspen	74	6.9	2013	Even Aged	
Baudette	Lake of the Woods	158	33	24	836	Balsam Fir	48	10.4	2013	Even Aged	
Baudette	Lake of the Woods	158	33	25	527	Aspen	62	7.3	2013	Even Aged	
Baudette	Lake of the Woods	158	33	25	846	Aspen	57	3.4	2013	Even Aged	
Baudette	Lake of the Woods	158	33	26	569	White Spruce	99	21.5	2013	Uneven Aged	
Baudette	Lake of the Woods	158	33	26	592	Aspen	67	5.5	2013	Even Aged	
Baudette	Lake of the Woods	158	33	26	722	Balsam Fir	66	7.6	2013	Even Aged	Y
Baudette	Lake of the Woods	158	33	26	842	Aspen	62	3.8	2013	Even Aged	
Baudette	Lake of the Woods	158	33	26	848	Aspen	64	4.7	2013	Even Aged	
Baudette	Lake of the Woods	158	33	28	498	Birch	82	5.2	2012	Even Aged	
Baudette	Lake of the Woods	158	33	29	585	Aspen	82	10.3	2011	On Site Visit	
Baudette	Lake of the Woods	158	33	30	494	Aspen	64	18.8	2011	Even Aged	
Baudette	Lake of the Woods	158	33	30	574	Aspen	71	35.7	2011	On Site Visit	
Baudette	Lake of the Woods	158	34	1	99	Aspen	60	7.4	2011	Manage for Understory	
Baudette	Lake of the Woods	158	34	2	96	Balsam Fir	74	21.1	2011	Even Aged	
Baudette	Lake of the Woods	158	34	2	111	Balsam Fir	79	13.1	2011	Even Aged	
Baudette	Lake of the Woods	158	34	4	83	Aspen	48	32.9	2013	On Site Visit	
Baudette	Lake of the Woods	158	34	4	115	Aspen	67	9.2	2013	On Site Visit	
Baudette	Lake of the Woods	158	34	4	721	Unknown	0	9.8	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	9	205	Aspen	72	9.7	2011	Manage for Understory	
Baudette	Lake of the Woods	158	34	9	220	Aspen	84	2.9	2011	Manage for Understory	
Baudette	Lake of the Woods	158	34	10	213	White Spruce	108	14.1	2012	On Site Visit	
Baudette	Lake of the Woods	158	34	10	228	Aspen	85	8.3	2011	Manage for Understory	
Baudette	Lake of the Woods	158	34	11	178	Black Spruce, Lo	129	33.6	2013	Even Aged	
Baudette	Lake of the Woods	158	34	11	191	Black Spruce, Lo	129	13	2013	Even Aged	
Baudette	Lake of the Woods	158	34	12	236	Black Spruce, Lo	148	13.2	2013	Even Aged	
Baudette	Lake of the Woods	158	34	15	268	White Spruce	95	7.8	2012	On Site Visit	
Baudette	Lake of the Woods	158	34	15	289	Aspen	114	52.8	2012	On Site Visit	
Baudette	Lake of the Woods	158	34	15	317	Ash	78	34	2012	Uneven Aged	
Baudette	Lake of the Woods	158	34	20	751	Unknown	0	3.8	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	20	752	Unknown	0	3.9	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	21	753	Unknown	0	4.6	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	23	423	Aspen	46	10.1	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	23	430	Aspen	75	4.4	2011	Alteration - Update Age	
Baudette	Lake of the Woods	158	34	23	432	Birch	80	14.4	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	23	438	Aspen	50	12.9	2011	Even Aged	
Baudette	Lake of the Woods	158	34	24	425	Aspen	45	40.2	2012	Even Aged	
Baudette	Lake of the Woods	158	34	24	426	Aspen	68	54.4	2012	Even Aged	
Baudette	Lake of the Woods	158	34	24	754	Unknown	0	4.2	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	25	455	Jack Pine	85	7.9	2011	Even Aged	
Baudette	Lake of the Woods	158	34	26	630	Aspen	51	26.6	2011	Manage for Understory	
Baudette	Lake of the Woods	158	34	26	653	Aspen	68	26	2011	Manage for Understory	
Baudette	Lake of the Woods	158	34	26	686	Aspen	61	15.9	2011	Alteration - Update Age	
Baudette	Lake of the Woods	158	34	27	639	Aspen	71	53.4	2011	Manage for Understory	
Baudette	Lake of the Woods	158	34	27	656	Aspen	82	27.7	2011	Manage for Understory	
Baudette	Lake of the Woods	158	34	27	755	Unknown	0	3.2	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	28	756	Unknown	0	3.7	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	33	757	Unknown	0	4.9	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	35	508	Ash	77	6.2	2012	On Site Visit	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Baudette	Lake of the Woods	158	34	35	517	Balm of Gilead	57	18.8	2012	On Site Visit	
Baudette	Lake of the Woods	158	34	35	541	Balsam Fir	62	27.9	2012	On Site Visit	
Baudette	Lake of the Woods	158	34	35	679	Ash	101	32.6	2012	On Site Visit	
Baudette	Lake of the Woods	158	34	36	566	Aspen	63	7.6	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	36	758	Unknown	0	13.9	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	36	759	Unknown	0	5	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	34	36	760	Unknown	0	19.4	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	35	2	19	Birch	76	25.9	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	35	3	520	Tamarack	141	25.3	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	35	11	515	Balm of Gilead	74	15	2013	On Site Visit	
Baudette	Lake of the Woods	158	35	11	521	Aspen	51	5.1	2013	On Site Visit	Y
Baudette	Lake of the Woods	158	35	11	522	Aspen	43	4	2013	On Site Visit	Y
Baudette	Lake of the Woods	158	35	14	512	Aspen	69	6.1	2013	On Site Visit	Y
Baudette	Lake of the Woods	158	35	14	530	Aspen	77	4	2013	On Site Visit	Y
Baudette	Lake of the Woods	158	35	17	537	Unknown	0	26.7	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	35	18	541	Aspen	68	12.8	2011	Even Aged	
Baudette	Lake of the Woods	158	35	20	538	Unknown	0	3.7	2011	Alteration - Update Type	
Baudette	Lake of the Woods	158	35	31	430	Aspen	52	26.4	2013	On Site Visit	
Baudette	Lake of the Woods	158	35	31	444	Aspen	51	17.3	2013	On Site Visit	
Baudette	Lake of the Woods	158	35	31	474	Aspen	54	9.5	2013	On Site Visit	
Baudette	Lake of the Woods	158	35	31	492	Aspen	44	12.8	2013	Even Aged	
Baudette	Lake of the Woods	158	35	32	453	Aspen	56	88.3	2013	Even Aged	
Baudette	Lake of the Woods	159	30	5	27	Balm of Gilead	50	6.9	2012	Even Aged	
Baudette	Lake of the Woods	159	30	5	559	Aspen	52	39.7	2012	Even Aged	
Baudette	Lake of the Woods	159	30	7	64	Aspen	57	9.2	2012	Even Aged	
Baudette	Lake of the Woods	159	30	7	71	Aspen	55	5.8	2012	Even Aged	
Baudette	Lake of the Woods	159	30	8	73	Balm of Gilead	44	4.8	2012	Even Aged	
Baudette	Lake of the Woods	159	30	8	98	Balm of Gilead	41	10.9	2012	Even Aged	
Baudette	Lake of the Woods	159	30	8	109	Balm of Gilead	68	12.1	2012	Even Aged	
Baudette	Lake of the Woods	159	30	17	176	Aspen	59	36.7	2011	Manage for Understory	
Baudette	Lake of the Woods	159	30	17	210	Aspen	71	32.5	2011	Manage for Understory	
Baudette	Lake of the Woods	159	30	17	222	Balm of Gilead	44	24.8	2011	Manage for Understory	
Baudette	Lake of the Woods	159	30	20	358	Aspen	59	40.8	2012	Even Aged	
Baudette	Lake of the Woods	159	30	20	389	Aspen	52	8.4	2012	Even Aged	
Baudette	Lake of the Woods	159	30	32	540	Aspen	72	35.6	2012	Even Aged	
Baudette	Lake of the Woods	159	30	32	545	Aspen	66	17.7	2012	Even Aged	
Baudette	Lake of the Woods	159	30	33	517	Aspen	78	4.8	2012	Even Aged	
Baudette	Lake of the Woods	159	31	7	465	Aspen	82	58.9	2012	Alteration - Update Type	
Baudette	Lake of the Woods	159	31	9	52	Aspen	53	16.3	2013	Even Aged	
Baudette	Lake of the Woods	159	31	10	207	Aspen	56	17.1	2013	Even Aged	
Baudette	Lake of the Woods	159	31	26	336	Aspen	63	4.4	2012	Even Aged	
Baudette	Lake of the Woods	159	31	26	355	Aspen	68	17.3	2012	Even Aged	
Baudette	Lake of the Woods	159	31	26	377	Aspen	64	2.6	2012	Even Aged	
Baudette	Lake of the Woods	159	31	27	125	Aspen	63	7.9	2012	Even Aged	
Baudette	Lake of the Woods	159	31	27	326	Aspen	63	62.2	2012	Even Aged	
Baudette	Lake of the Woods	159	31	27	335	Aspen	65	2.8	2012	Even Aged	
Baudette	Lake of the Woods	159	31	27	353	Aspen	68	14.7	2012	Even Aged	
Baudette	Lake of the Woods	159	31	35	428	Aspen	65	149.5	2012	Even Aged	
Baudette	Lake of the Woods	159	32	10	658	Balm of Gilead	52	10.5	2013	Even Aged	
Baudette	Lake of the Woods	159	32	15	664	Balm of Gilead	50	35.6	2013	Even Aged	
Baudette	Lake of the Woods	159	32	25	179	Aspen	65	10.3	2013	Even Aged	
Baudette	Lake of the Woods	159	32	25	474	Aspen	69	7.6	2013	Even Aged	
Baudette	Lake of the Woods	159	32	28	158	Black Spruce, Lo	126	20.2	2011	Even Aged	
Baudette	Lake of the Woods	159	32	32	510	Tamarack	39	261.9	2012	Even Aged	
Baudette	Lake of the Woods	159	32	34	524	Aspen	63	13.3	2011	Manage for Understory	
Baudette	Lake of the Woods	159	32	36	324	Aspen	67	15.8	2013	Even Aged	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Baudette	Lake of the Woods	159	33	2	107	Aspen	78	14	2011	Manage for Understory	
Baudette	Lake of the Woods	159	33	2	851	Jack Pine	64	19.9	2011	Even Aged	
Baudette	Lake of the Woods	159	33	6	3	Balm of Gilead	68	8.9	2011	Even Aged	
Baudette	Lake of the Woods	159	33	35	845	Aspen	79	1	2011	Even Aged	
Baudette	Lake of the Woods	159	33	36	798	Aspen	52	36.6	2011	Even Aged	
Baudette	Lake of the Woods	159	33	36	840	Aspen	42	6.8	2011	Even Aged	
Baudette	Lake of the Woods	159	34	2	98	Norway Pine	41	2.3	2012	On Site Visit	
Baudette	Lake of the Woods	159	34	2	896	Norway Pine	27	2.8	2012	On Site Visit	
Baudette	Lake of the Woods	159	34	3	85	Norway Pine	27	18.1	2012	On Site Visit	
Baudette	Lake of the Woods	159	34	3	848	Norway Pine	40	30	2012	On Site Visit	
Baudette	Lake of the Woods	159	34	5	55	Birch	89	12.1	2012	Uneven Aged	
Baudette	Lake of the Woods	159	34	9	112	Black Spruce, Lo	160	173.2	2011	Alteration - Update Type	
Baudette	Lake of the Woods	159	34	10	129	Tamarack	126	5.3	2011	Even Aged	Y
Baudette	Lake of the Woods	159	34	10	672	Norway Pine	81	12.8	2012	On Site Visit	
Baudette	Lake of the Woods	159	34	10	1028	Norway Pine	37	44.7	2012	On Site Visit	
Baudette	Lake of the Woods	159	34	10	1030	Jack Pine	69	5.7	2011	Even Aged	
Baudette	Lake of the Woods	159	34	11	150	Balsam Fir	51	8.7	2012	Even Aged	
Baudette	Lake of the Woods	159	34	11	156	Norway Pine	65	6.4	2012	On Site Visit	
Baudette	Lake of the Woods	159	34	11	191	Jack Pine	52	9.1	2011	Even Aged	
Baudette	Lake of the Woods	159	34	11	673	Norway Pine	84	4.5	2012	On Site Visit	
Baudette	Lake of the Woods	159	34	11	897	Norway Pine	27	28.5	2012	On Site Visit	
Baudette	Lake of the Woods	159	34	11	898	Norway Pine	43	11.1	2012	On Site Visit	
Baudette	Lake of the Woods	159	34	13	890	Balm of Gilead	64	6	2011	Alteration - Update Type	
Baudette	Lake of the Woods	159	34	14	934	Aspen	62	20.3	2011	Even Aged	Y
Baudette	Lake of the Woods	159	34	19	420	Aspen	75	6.6	2011	Alteration - Update Type	
Baudette	Lake of the Woods	159	34	20	378	Aspen	77	23.8	2011	Even Aged	
Baudette	Lake of the Woods	159	34	20	381	Norway Pine	41	25.7	2011	Thinning	
Baudette	Lake of the Woods	159	34	20	383	Balsam Fir	77	11	2011	Even Aged	
Baudette	Lake of the Woods	159	34	20	401	Balsam Fir	46	9	2011	Even Aged	
Baudette	Lake of the Woods	159	34	20	407	Aspen	43	4	2011	Even Aged	
Baudette	Lake of the Woods	159	34	21	350	Aspen	74	7.2	2011	Alteration - Update Age	
Baudette	Lake of the Woods	159	34	21	371	Upland Grass	0	0.8	2011	Alteration - Update Type	
Baudette	Lake of the Woods	159	34	21	403	Tamarack	143	16.5	2011	Even Aged	Y
Baudette	Lake of the Woods	159	34	22	361	Jack Pine	57	6.6	2011	Even Aged	
Baudette	Lake of the Woods	159	34	22	1082	Balsam Fir	70	4.9	2011	Even Aged	
Baudette	Lake of the Woods	159	34	22	1085	Balsam Fir	74	16.2	2011	Even Aged	
Baudette	Lake of the Woods	159	34	27	794	Aspen	90	21.4	2011	Alteration - Update Age	
Baudette	Lake of the Woods	159	34	27	796	Aspen	96	27.9	2012	Alteration - Update Age	
Baudette	Lake of the Woods	159	34	27	803	Jack Pine	79	40.8	2012	Even Aged	
Baudette	Lake of the Woods	159	34	28	530	Aspen	94	28.8	2011	Alteration - Update Age	
Baudette	Lake of the Woods	159	34	28	536	Aspen	89	17.8	2011	Alteration - Update Age	
Baudette	Lake of the Woods	159	34	29	1121	Aspen	69	9.1	2011	Even Aged	
Baudette	Lake of the Woods	159	34	30	456	Norway Pine	32	6	2011	On Site Visit	
Baudette	Lake of the Woods	159	35	4	137	Aspen	79	35.9	2011	On Site Visit	
Baudette	Lake of the Woods	159	35	4	150	Birch	82	2.9	2011	On Site Visit	
Baudette	Lake of the Woods	159	35	4	152	White Spruce	76	8.8	2011	On Site Visit	
Baudette	Lake of the Woods	159	35	4	162	White Spruce	76	4.1	2011	On Site Visit	
Baudette	Lake of the Woods	159	35	4	172	Aspen	76	5.1	2011	On Site Visit	
Baudette	Lake of the Woods	159	35	5	19	Aspen	73	10.9	2011	Even Aged	
Baudette	Lake of the Woods	159	35	7	276	Jack Pine	80	47.3	2011	Even Aged	
Baudette	Lake of the Woods	159	35	7	296	Jack Pine	80	44.1	2013	Even Aged	
Baudette	Lake of the Woods	159	35	13	356	Birch	59	6.9	2011	Alteration - Update Type	
Baudette	Lake of the Woods	159	35	13	359	Aspen	75	18	2012	Even Aged	
Baudette	Lake of the Woods	159	35	13	473	Aspen	78	14.4	2012	On Site Visit	Y
Baudette	Lake of the Woods	159	35	13	518	Norway Pine	25	4.1	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	15	471	Cutover Area	0	14.2	2011	Alteration - Update Age	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Baudette	Lake of the Woods	159	35	17	383	Aspen	78	22	2011	Alteration - Update Type	
Baudette	Lake of the Woods	159	35	17	409	Aspen	76	7.8	2011	Alteration - Update Type	
Baudette	Lake of the Woods	159	35	17	411	Aspen	88	4.9	2011	Alteration - Update Type	
Baudette	Lake of the Woods	159	35	17	451	Norway Pine	62	6.5	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	18	357	Balm of Gilead	64	13.4	2011	Alteration - Update Type	
Baudette	Lake of the Woods	159	35	18	393	Aspen	84	8.9	2011	Alteration - Update Type	
Baudette	Lake of the Woods	159	35	18	442	Balm of Gilead	84	13.9	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	19	480	Aspen	51	3.6	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	19	481	Aspen	77	11.4	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	19	485	Balm of Gilead	60	10.8	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	19	489	Aspen	86	13.1	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	20	526	Aspen	79	14.8	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	20	864	Norway Pine	61	4.6	2012	Thinning	
Baudette	Lake of the Woods	159	35	21	639	White Spruce	83	23.5	2011	Even Aged	
Baudette	Lake of the Woods	159	35	22	574	Norway Pine	14	25.9	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	23	571	Norway Pine	16	19.3	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	24	528	Aspen	48	12.6	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	24	529	Norway Pine	25	12.5	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	24	530	Norway Pine	90	7.3	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	24	531	Norway Pine	19	10	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	24	616	Norway Pine	26	58.4	2012	On Site Visit	
Baudette	Lake of the Woods	159	35	25	695	Aspen	89	17.6	2011	Alteration - Update Type	
Baudette	Lake of the Woods	159	35	36	791	Aspen	68	37.7	2013	Even Aged	
Baudette	Lake of the Woods	159	35	36	798	Aspen	95	14.7	2011	On Site Visit	
Baudette	Lake of the Woods	160	30	31	180	Black Spruce, Lo	135	14.4	2011	Even Aged	
Baudette	Lake of the Woods	160	31	13	135	Black Spruce, Lo	92	5.4	2011	Even Aged	
Baudette	Lake of the Woods	160	32	5	13	Aspen	39	14.1	2011	Even Aged	
Baudette	Lake of the Woods	160	32	5	197	Aspen	43	24.4	2011	Even Aged	
Baudette	Lake of the Woods	160	32	5	201	Aspen	65	31.4	2011	Even Aged	
Baudette	Lake of the Woods	160	32	8	39	Aspen	52	19.9	2011	Even Aged	
Baudette	Lake of the Woods	160	32	8	426	Aspen	55	35.9	2011	Even Aged	
Baudette	Lake of the Woods	160	32	27	348	Aspen	60	4.2	2013	Even Aged	
Baudette	Lake of the Woods	160	32	33	149	Aspen	60	9	2013	Even Aged	
Baudette	Lake of the Woods	160	32	34	364	Aspen	60	24.3	2013	Even Aged	
Baudette	Lake of the Woods	160	33	6	5	Aspen	52	63.5	2011	Even Aged	
Baudette	Lake of the Woods	160	33	8	66	Lowland Brush	0	13.7	2011	Alteration - Update Type	
Baudette	Lake of the Woods	160	33	14	116	Aspen	72	105.6	2011	Alteration - Update Type	
Baudette	Lake of the Woods	160	33	15	115	Aspen	53	24.8	2011	Alteration - Update Type	
Baudette	Lake of the Woods	160	34	9	226	Balm of Gilead	58	22	2011	Alteration - Update Type	
Baudette	Lake of the Woods	160	34	14	557	Aspen	68	9.1	2013	Even Aged	
Baudette	Lake of the Woods	160	34	14	674	Aspen	68	25.9	2013	Even Aged	Y
Baudette	Lake of the Woods	160	34	14	675	Birch	57	7.4	2013	Even Aged	
Baudette	Lake of the Woods	160	34	14	676	Ash	89	17.4	2013	Uneven Aged	
Baudette	Lake of the Woods	160	34	14	677	Jack Pine	54	7.4	2013	Even Aged	
Baudette	Lake of the Woods	160	34	14	681	Jack Pine	60	3	2011	Alteration - Update Age	
Baudette	Lake of the Woods	160	34	14	689	Jack Pine	53	4.9	2013	Even Aged	
Baudette	Lake of the Woods	160	34	14	1172	Aspen	69	12.7	2013	Even Aged	
Baudette	Lake of the Woods	160	34	22	719	Aspen	69	35.7	2013	Even Aged	
Baudette	Lake of the Woods	160	34	23	727	Aspen	69	30.9	2013	Even Aged	
Baudette	Lake of the Woods	160	34	26	772	Aspen	69	25.7	2013	Even Aged	
Baudette	Lake of the Woods	160	34	26	812	Jack Pine	52	8.6	2013	Even Aged	
Baudette	Lake of the Woods	160	34	26	816	Aspen	70	8.6	2013	Even Aged	
Baudette	Lake of the Woods	160	34	27	444	Norway Pine	68	5.1	2013	On Site Visit	
Baudette	Lake of the Woods	160	34	27	764	Jack Pine	67	26.5	2013	Even Aged	
Baudette	Lake of the Woods	160	34	30	405	Balsam Fir	85	8.3	2011	Alteration - Update Type	
Baudette	Lake of the Woods	160	34	34	458	Norway Pine	74	5.5	2013	On Site Visit	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Baudette	Lake of the Woods	160	34	34	502	Norway Pine	66	29.6	2011	On Site Visit	
Baudette	Lake of the Woods	160	34	34	648	Birch	55	8.2	2011	Even Aged	
Baudette	Lake of the Woods	160	34	35	1158	Jack Pine	67	2.2	2013	Even Aged	
Baudette	Lake of the Woods	160	35	1	42	Jack Pine	71	1.8	2012	Even Aged	
Baudette	Lake of the Woods	160	35	2	50	Jack Pine	69	7.1	2012	Even Aged	
Baudette	Lake of the Woods	160	35	2	606	Jack Pine	71	27.5	2012	Even Aged	
Baudette	Lake of the Woods	160	35	4	7	Lowland Brush	0	8.2	2011	Alteration - Update Type	
Baudette	Lake of the Woods	160	35	16	167	Aspen	59	181.4	2011	Alteration - Update Type	
Baudette	Lake of the Woods	160	35	16	179	Aspen	67	14.3	2011	Even Aged	
Baudette	Lake of the Woods	160	35	16	189	Aspen	73	50.5	2011	Even Aged	
Baudette	Lake of the Woods	160	35	24	326	Balsam Fir	80	8.9	2011	Alteration - Update Type	
Baudette	Lake of the Woods	160	35	25	352	Balsam Fir	73	6.7	2011	Alteration - Update Type	
Baudette	Lake of the Woods	160	35	29	328	Aspen	70	8	2013	On Site Visit	
Baudette	Lake of the Woods	160	35	29	360	Aspen	68	6.8	2013	Even Aged	
Baudette	Lake of the Woods	160	35	29	362	Jack Pine	70	42.6	2013	Even Aged	
Baudette	Lake of the Woods	160	35	29	377	Aspen	70	9.4	2013	Even Aged	
Baudette	Lake of the Woods	160	35	31	484	Aspen	61	24	2011	Alteration - Update Type	
Baudette	Lake of the Woods	160	35	31	535	Aspen	66	21.3	2011	Alteration - Update Type	
Baudette	Lake of the Woods	160	35	32	445	Jack Pine	74	19.4	2013	Even Aged	
Baudette	Lake of the Woods	160	35	32	462	Aspen	68	18.4	2011	Manage for Understory	
Baudette	Lake of the Woods	160	35	32	506	Aspen	69	11	2011	Manage for Understory	
Baudette	Lake of the Woods	160	35	32	508	Aspen	69	14	2011	Manage for Understory	
Baudette	Lake of the Woods	160	35	32	551	Aspen	69	13	2011	Manage for Understory	
Baudette	Lake of the Woods	160	35	32	554	Aspen	69	32.1	2011	Manage for Understory	
Baudette	Lake of the Woods	160	35	32	585	Aspen	63	16.2	2011	Alteration - Update Type	
Baudette	Lake of the Woods	161	32	35	57	Aspen	62	11.4	2011	Even Aged	
Baudette	Lake of the Woods	161	32	35	58	Aspen	51	11.9	2011	Even Aged	
Baudette	Lake of the Woods	161	32	35	221	Aspen	56	26	2011	Even Aged	
Baudette	Lake of the Woods	161	32	35	242	Aspen	55	20.9	2011	Even Aged	
Baudette	Lake of the Woods	161	32	35	243	Aspen	49	19.1	2011	Even Aged	
Baudette	Lake of the Woods	161	32	35	244	Lowland Brush	0	3.8	2011	Alteration - Update Type	
Baudette	Lake of the Woods	161	32	35	266	Aspen	49	14.9	2011	Even Aged	
Baudette	Lake of the Woods	161	33	9	30	Balm of Gilead	57	8.8	2011	Even Aged	
Baudette	Lake of the Woods	161	33	10	59	Ash	125	7.6	2011	Alteration - Update Age	
Baudette	Lake of the Woods	161	33	10	63	Ash	125	6	2011	Alteration - Update Age	
Baudette	Lake of the Woods	161	33	31	299	Aspen	57	2.7	2011	Alteration - Update Type	
Baudette	Lake of the Woods	161	34	4	83	Birch	74	11.7	2011	Alteration - Update Type	
Baudette	Lake of the Woods	161	34	7	117	Ash	102	3.6	2011	Thinning	
Baudette	Lake of the Woods	161	34	7	121	Ash	72	3.8	2011	Thinning	
Baudette	Lake of the Woods	161	34	7	554	Balm of Gilead	43	16.5	2011	Even Aged	
Baudette	Lake of the Woods	161	34	7	565	Jack Pine	55	7	2011	Even Aged	
Baudette	Lake of the Woods	161	34	8	95	Jack Pine	75	11.7	2012	Even Aged	
Baudette	Lake of the Woods	161	34	8	109	Aspen	57	20.1	2011	Even Aged	
Baudette	Lake of the Woods	161	34	8	122	Aspen	80	51.8	2012	Even Aged	
Baudette	Lake of the Woods	161	34	8	156	Aspen	70	8.2	2011	Even Aged	
Baudette	Lake of the Woods	161	34	9	0	Unknown	0	9	2011	Alteration - Update Age	
Baudette	Lake of the Woods	161	34	9	98	Jack Pine	67	29.9	2012	Even Aged	
Baudette	Lake of the Woods	161	34	9	134	Aspen	80	12.3	2012	Even Aged	
Baudette	Lake of the Woods	161	34	16	228	Aspen	64	17.4	2012	Even Aged	
Baudette	Lake of the Woods	161	34	16	237	Aspen	59	27.5	2012	Even Aged	
Baudette	Lake of the Woods	161	34	17	272	Balsam Fir	104	12.4	2013	Even Aged	
Baudette	Lake of the Woods	161	34	17	837	Aspen	74	16.9	2013	Even Aged	
Baudette	Lake of the Woods	161	34	18	268	Aspen	46	6	2013	Even Aged	
Baudette	Lake of the Woods	161	34	18	890	Jack Pine	71	22.5	2013	On Site Visit	
Baudette	Lake of the Woods	161	34	22	624	Balm of Gilead	73	67.5	2011	Alteration - Update Type	
Baudette	Lake of the Woods	161	34	26	688	Aspen	79	67.3	2013	Even Aged	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Baudette	Lake of the Woods	161	34	32	723	Aspen	79	29.8	2012	Even Aged	
Baudette	Lake of the Woods	161	34	32	967	Jack Pine	67	4.5	2012	Even Aged	
Baudette	Lake of the Woods	161	34	32	981	Aspen	52	11.6	2012	Even Aged	
Baudette	Lake of the Woods	161	34	33	487	Jack Pine	58	12.8	2012	Even Aged	
Baudette	Lake of the Woods	161	34	33	528	Aspen	61	5.5	2012	Even Aged	
Baudette	Lake of the Woods	161	34	33	729	Aspen	83	24.9	2013	Even Aged	
Baudette	Lake of the Woods	161	34	33	733	Balm of Gilead	81	10.7	2013	Even Aged	
Baudette	Lake of the Woods	161	34	33	746	Aspen	76	5.1	2012	Even Aged	
Baudette	Lake of the Woods	161	34	33	759	Jack Pine	58	12.4	2012	Even Aged	
Baudette	Lake of the Woods	161	34	33	761	Jack Pine	58	2.9	2012	Even Aged	
Baudette	Lake of the Woods	161	34	33	783	Aspen	63	15.8	2012	Even Aged	
Baudette	Lake of the Woods	161	34	35	994	Aspen	100	79.3	2011	Alteration - Update Type	
Baudette	Lake of the Woods	162	33	14	138	Aspen	92	0.2	2011	Alteration - Update Type	
Baudette	Lake of the Woods	162	34	16	103	Balsam Fir	34	20.1	2011	Alteration - Update Type	
Baudette	Lake of the Woods	162	34	16	149	Balm of Gilead	64	12.4	2011	Alteration - Update Type	
Baudette	Lake of the Woods	162	34	16	157	Aspen	61	52.4	2011	Even Aged	
Baudette	Lake of the Woods	162	34	21	182	Aspen	60	40	2011	Even Aged	
Baudette	Lake of the Woods	162	34	21	242	Aspen	65	15.4	2013	Even Aged	
Baudette	Lake of the Woods	162	34	21	512	Aspen	60	10.1	2011	Even Aged	
Baudette	Lake of the Woods	162	34	22	195	Balm of Gilead	67	15.9	2013	Even Aged	
Baudette	Lake of the Woods	162	34	22	241	Aspen	65	8.7	2013	Even Aged	
Baudette	Lake of the Woods	162	34	26	443	Balm of Gilead	56	20.2	2012	Even Aged	
Baudette	Lake of the Woods	162	34	26	453	Aspen	54	38.9	2012	Even Aged	
Baudette	Lake of the Woods	162	34	26	455	Aspen	67	10.9	2012	Even Aged	
Baudette	Lake of the Woods	162	34	26	465	Aspen	67	26.3	2012	Even Aged	
Baudette	Lake of the Woods	162	34	27	271	Balm of Gilead	68	31.5	2013	Even Aged	
Baudette	Lake of the Woods	162	34	27	274	Balm of Gilead	65	25.2	2013	Even Aged	
Baudette	Lake of the Woods	162	34	28	249	Aspen	76	19.7	2011	Manage for Understory	
Baudette	Lake of the Woods	162	34	28	251	Aspen	65	36.1	2011	Alteration - Update Age	
Baudette	Lake of the Woods	163	33	29	34	Agriculture	0	67.7	2011	Alteration - Update Type	
Baudette	Lake of the Woods	163	34	12	83	Aspen	62	40	2011	Even Aged	
Baudette	Lake of the Woods	163	34	14	118	Aspen	56	5.9	2011	Even Aged	
Baudette	Lake of the Woods	163	34	16	403	Aspen	61	93.5	2012	Even Aged	Y
Baudette	Lake of the Woods	163	34	23	188	Balm of Gilead	76	11.9	2011	Manage for Understory	
Baudette	Lake of the Woods	163	34	25	279	Aspen	87	8.3	2011	Alteration - Update Type	
Blackduck	Beltrami	152	30	2	15	Tamarack	143	26.1	2011	Even Aged	
Blackduck	Beltrami	152	30	2	98	Aspen	59	34	2011	Alteration - Update Age	
Blackduck	Beltrami	152	30	11	206	Ash	93	106.9	2013	Uneven Aged	
Blackduck	Beltrami	152	30	11	336	Ash	93	11.1	2013	Uneven Aged	
Blackduck	Beltrami	152	30	19	628	White Spruce	57	24.5	2012	On Site Visit	
Blackduck	Beltrami	152	30	19	695	Balm of Gilead	67	23.8	2011	Alteration - Update Age	
Blackduck	Beltrami	152	30	19	727	Jack Pine	69	17.5	2012	Even Aged	
Blackduck	Beltrami	152	31	1	110	Balsam Fir	55	4.3	2011	Alteration - Update Age	
Blackduck	Beltrami	152	31	1	119	Balsam Fir	51	6.8	2011	Alteration - Update Age	
Blackduck	Beltrami	152	31	3	26	Aspen	61	43.7	2013	Even Aged	Y
Blackduck	Beltrami	152	31	3	77	Aspen	62	7.6	2013	Even Aged	Y
Blackduck	Beltrami	152	31	4	44	Aspen	68	15.9	2013	Even Aged	Y
Blackduck	Beltrami	152	31	6	9	Aspen	82	2.9	2011	Alteration - Update Age	
Blackduck	Beltrami	152	31	8	261	Jack Pine	62	33.7	2012	Even Aged	
Blackduck	Beltrami	152	31	17	290	Norway Pine	40	11.8	2012	On Site Visit	
Blackduck	Beltrami	152	31	17	293	Norway Pine	69	11.7	2012	On Site Visit	
Blackduck	Beltrami	152	31	17	301	Norway Pine	35	15.9	2012	On Site Visit	
Blackduck	Beltrami	152	32	1	427	Aspen	67	29.7	2011	Even Aged	
Blackduck	Beltrami	152	32	25	256	Aspen	53	17	2011	Even Aged	
Blackduck	Beltrami	152	32	26	268	Ash	117	19.5	2011	Uneven Aged	
Blackduck	Beltrami	153	30	2	494	Norway Pine	45	12.1	2011	On Site Visit	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Blackduck	Beltrami	153	30	4	11	Norway Pine	21	15.6	2011	On Site Visit	
Blackduck	Beltrami	153	30	7	86	Aspen	74	13.4	2011	Alteration - Update Age	
Blackduck	Beltrami	153	30	7	501	Ash	91	27.1	2011	Uneven Aged	
Blackduck	Beltrami	153	30	7	628	Aspen	74	19.4	2011	Alteration - Update Age	
Blackduck	Beltrami	153	30	8	612	Ash	71	11.5	2013	On Site Visit	Y
Blackduck	Beltrami	153	30	9	109	Aspen	81	4.1	2013	Even Aged	
Blackduck	Beltrami	153	30	9	127	Tamarack	184	12	2013	Even Aged	Y
Blackduck	Beltrami	153	30	10	108	Aspen	79	8.3	2012	Even Aged	Y
Blackduck	Beltrami	153	30	10	146	Aspen	80	16.4	2012	Even Aged	Y
Blackduck	Beltrami	153	30	10	160	Aspen	61	8.4	2012	Even Aged	Y
Blackduck	Beltrami	153	30	10	170	Aspen	83	5.3	2012	Even Aged	Y
Blackduck	Beltrami	153	30	12	566	Aspen	85	2.6	2013	Even Aged	
Blackduck	Beltrami	153	30	13	184	Aspen	85	9	2013	Even Aged	
Blackduck	Beltrami	153	30	13	621	Aspen	85	2.6	2013	Even Aged	
Blackduck	Beltrami	153	30	15	192	Aspen	84	15.9	2011	Even Aged	
Blackduck	Beltrami	153	30	15	233	Norway Pine	93	9.7	2011	On Site Visit	
Blackduck	Beltrami	153	30	15	241	Norway Pine	54	11.5	2011	On Site Visit	
Blackduck	Beltrami	153	30	17	255	Aspen	70	18.2	2012	Even Aged	
Blackduck	Beltrami	153	30	18	261	Aspen	65	11.6	2011	Alteration - Update Age	
Blackduck	Beltrami	153	30	19	316	Aspen	68	45.1	2011	Alteration - Update Age	
Blackduck	Beltrami	153	30	19	350	Balm of Gilead	67	11.2	2011	Alteration - Update Age	
Blackduck	Beltrami	153	30	19	521	Ash	117	34.3	2012	Even Aged	
Blackduck	Beltrami	153	30	19	593	Ash	76	28.8	2012	Even Aged	
Blackduck	Beltrami	153	30	19	610	Aspen	68	8.5	2011	Alteration - Update Age	
Blackduck	Beltrami	153	30	28	378	Tamarack	148	28.7	2013	Even Aged	
Blackduck	Beltrami	153	30	28	536	Tamarack	148	13.1	2013	Even Aged	
Blackduck	Beltrami	153	30	32	487	Tamarack	135	7.3	2012	Even Aged	
Blackduck	Beltrami	153	30	33	432	Tamarack	149	77	2011	Even Aged	Y
Blackduck	Beltrami	153	30	33	473	Tamarack	149	4.3	2011	Even Aged	
Blackduck	Beltrami	153	31	13	35	Ash	130	14.7	2013	Uneven Aged	
Blackduck	Beltrami	153	31	13	172	Aspen	85	7.6	2013	Even Aged	
Blackduck	Beltrami	153	31	14	329	Aspen	82	13	2013	Even Aged	
Blackduck	Beltrami	153	31	14	380	Ash	120	48.4	2012	Uneven Aged	
Blackduck	Beltrami	153	31	15	409	Aspen	80	11	2012	Alteration - Update Age	
Blackduck	Beltrami	153	31	19	46	Aspen	60	9.4	2012	Even Aged	
Blackduck	Beltrami	153	31	20	47	Aspen	84	5.7	2012	Even Aged	
Blackduck	Beltrami	153	31	20	50	Aspen	69	20.2	2012	Even Aged	
Blackduck	Beltrami	153	31	22	384	Aspen	88	5.6	2012	Alteration - Update Age	
Blackduck	Beltrami	153	31	23	464	Aspen	81	15.5	2011	Even Aged	
Blackduck	Beltrami	153	31	23	465	Balm of Gilead	56	5	2011	Even Aged	
Blackduck	Beltrami	153	31	24	207	Norway Pine	27	31.1	2011	On Site Visit	
Blackduck	Beltrami	153	31	25	235	Aspen	86	15.3	2012	Even Aged	Y
Blackduck	Beltrami	153	31	26	243	Aspen	61	13.5	2012	Even Aged	Y
Blackduck	Beltrami	153	31	26	245	Aspen	61	12	2012	Even Aged	Y
Blackduck	Beltrami	153	31	27	500	Aspen	66	19.3	2011	Alteration - Update Age	
Blackduck	Beltrami	153	31	28	101	Jack Pine	59	6.2	2011	On Site Visit	
Blackduck	Beltrami	153	31	34	296	Aspen	54	9	2013	Even Aged	Y
Blackduck	Beltrami	153	31	35	132	Aspen	66	6	2011	Even Aged	Y
Blackduck	Beltrami	153	31	36	269	Aspen	50	12	2011	Alteration - Update Age	Y
Blackduck	Beltrami	153	32	25	130	Norway Pine	40	3.3	2011	On Site Visit	
Blackduck	Beltrami	153	32	26	45	Aspen	61	38.5	2011	Even Aged	Y
Blackduck	Beltrami	153	32	26	58	Norway Pine	25	4.3	2011	On Site Visit	Y
Blackduck	Beltrami	153	32	26	64	Birch	61	13.6	2011	Even Aged	Y
Blackduck	Beltrami	153	32	36	140	Aspen	65	2.9	2011	Alteration - Update Type	
Blackduck	Beltrami	154	30	3	19	Black Spruce, Lo	131	5.5	2013	Even Aged	Y
Blackduck	Beltrami	154	30	3	592	Black Spruce, Lo	139	55.8	2013	Even Aged	Y

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Blackduck	Beltrami	154	30	3	600	Black Spruce, Lo	128	25.3	2013	Even Aged	Y
Blackduck	Beltrami	154	30	4	4	Black Spruce, Lo	141	9	2013	Even Aged	
Blackduck	Beltrami	154	30	9	83	Tamarack	125	43.6	2013	Even Aged	
Blackduck	Beltrami	154	30	10	62	Norway Pine	50	6	2013	On Site Visit	Y
Blackduck	Beltrami	154	30	14	662	Black Spruce, Lo	132	88.5	2012	Even Aged	
Blackduck	Beltrami	154	30	16	152	Tamarack	136	26.8	2012	Even Aged	
Blackduck	Beltrami	154	30	16	163	Tamarack	127	14.7	2012	Even Aged	
Blackduck	Beltrami	154	30	21	170	Tamarack	127	17.2	2012	Even Aged	
Blackduck	Beltrami	154	30	25	247	Tamarack	156	135.7	2011	Even Aged	Y
Blackduck	Beltrami	154	30	25	279	Tamarack	156	12.4	2011	Even Aged	Y
Blackduck	Beltrami	154	30	26	274	Black Spruce, Lo	131	11.6	2011	Even Aged	Y
Blackduck	Beltrami	154	30	28	464	Aspen	52	22.9	2013	Even Aged	
Blackduck	Beltrami	154	30	28	616	Tamarack	158	134.3	2013	Even Aged	
Blackduck	Beltrami	154	30	30	301	Tamarack	137	5.6	2013	Even Aged	Y
Blackduck	Beltrami	154	30	31	308	Tamarack	137	14.1	2013	Even Aged	Y
Blackduck	Beltrami	154	30	34	565	Norway Pine	28	38.4	2011	On Site Visit	
Blackduck	Beltrami	155	30	23	193	Black Spruce, Lo	157	19.4	2011	Even Aged	Y
Blackduck	Beltrami	155	30	23	195	Black Spruce, Lo	157	2.4	2011	Even Aged	Y
Blackduck	Beltrami	155	30	23	198	Black Spruce, Lo	157	8.9	2011	Even Aged	Y
Blackduck	Beltrami	155	33	31	114	Tamarack	123	100	2013	Even Aged	
Blackduck	Beltrami	155	33	32	116	Tamarack	123	200	2012	Even Aged	Y
Blackduck	Beltrami	155	33	33	117	Tamarack	138	45.8	2011	Alteration - Update Age	Y
Blackduck	Beltrami	155	33	33	119	Tamarack	138	19.8	2011	Alteration - Update Age	Y
Blackduck	Beltrami	155	33	33	158	Tamarack	138	170.7	2011	Even Aged	Y
Blackduck	Beltrami	155	33	33	159	Tamarack	138	42	2011	Even Aged	Y
Deer River	Koochiching	152	26	8	46	Black Spruce, Lo	142	13.3	2013	Even Aged	Y
Deer River	Koochiching	152	26	10	44	Ash	128	220	2012	Shelterwood	
Deer River	Koochiching	152	26	15	109	Aspen	53	8.7	2011	Alteration - Update Age	
Deer River	Koochiching	152	26	15	135	Balsam Fir	72	5.2	2011	Even Aged	
Deer River	Koochiching	152	26	16	436	Aspen	53	10.2	2011	Alteration - Update Age	
Deer River	Koochiching	152	26	22	187	Balsam Fir	74	4.1	2011	Even Aged	
Deer River	Koochiching	152	26	22	206	Norway Pine	26	11.6	2011	On Site Visit	
Deer River	Koochiching	152	27	5	81	Aspen	61	5.6	2012	Even Aged	
Deer River	Koochiching	152	27	6	496	Aspen	63	2.7	2011	Alteration - Update Age	
Deer River	Koochiching	152	27	8	101	Aspen	58	11.9	2012	On Site Visit	
Deer River	Koochiching	152	27	8	126	Balm of Gilead	61	8.6	2012	Even Aged	
Deer River	Koochiching	152	27	11	109	Black Spruce, Lo	146	41.2	2013	Even Aged	
Deer River	Koochiching	152	29	2	31	Ash	157	82.3	2013	On Site Visit	Y
Deer River	Koochiching	153	27	1	20	Black Spruce, Lo	150	17	2011	Even Aged	Y
Deer River	Koochiching	153	27	1	21	Black Spruce, Lo	162	100.6	2011	Even Aged	Y
Deer River	Koochiching	153	27	29	172	Norway Pine	45	20.5	2011	Thinning	
Deer River	Koochiching	153	27	30	159	Aspen	50	20.8	2011	Even Aged	
Deer River	Koochiching	153	27	30	190	Aspen	58	5.2	2011	Even Aged	
Deer River	Koochiching	153	27	31	290	Aspen	71	13	2011	Even Aged	
Deer River	Koochiching	153	27	31	294	Aspen	50	10.6	2011	Even Aged	
Deer River	Koochiching	153	27	31	297	Aspen	63	6	2011	Even Aged	
Deer River	Koochiching	153	27	32	227	Aspen	64	6.9	2013	Even Aged	
Deer River	Koochiching	153	27	32	255	Balsam Fir	92	5.6	2013	Even Aged	
Deer River	Koochiching	153	27	32	336	Aspen	66	23.9	2013	Even Aged	
Deer River	Koochiching	153	27	34	340	Ash	81	37.5	2013	Uneven Aged	
Deer River	Koochiching	153	27	34	343	Ash	81	9.8	2013	Alteration - Update Age	
Deer River	Koochiching	153	27	34	344	Aspen	89	4.8	2012	Alteration - Update Age	
Deer River	Koochiching	153	27	36	243	Black Spruce, Lo	134	20.2	2013	Even Aged	Y
Deer River	Koochiching	153	29	1	2	Balsam Fir	42	11.8	2013	Even Aged	
Deer River	Koochiching	153	29	1	59	Black Spruce, Lo	131	33.8	2013	Even Aged	
Deer River	Koochiching	153	29	1	72	Balsam Fir	56	10.8	2013	Even Aged	Y

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Deer River	Koochiching	153	29	7	144	Norway Pine	24	13.4	2012	On Site Visit	
Deer River	Koochiching	153	29	7	210	Norway Pine	26	16.6	2013	On Site Visit	
Deer River	Koochiching	153	29	7	213	Norway Pine	74	27.3	2013	On Site Visit	
Deer River	Koochiching	153	29	7	215	Norway Pine	66	3.9	2013	On Site Visit	
Deer River	Koochiching	153	29	8	214	Aspen	160	14.4	2013	Alteration - Update Age	
Deer River	Koochiching	153	29	8	227	Norway Pine	68	5.4	2013	On Site Visit	
Deer River	Koochiching	153	29	9	431	Norway Pine	103	1.9	2013	Thinning	
Deer River	Koochiching	153	29	18	264	Norway Pine	34	47.4	2013	On Site Visit	
Deer River	Koochiching	153	29	31	451	Balsam Fir	57	5.3	2012	Even Aged	Y
Deer River	Koochiching	154	28	31	443	Aspen	67	1.4	2011	Even Aged	
Deer River	Koochiching	154	29	5	51	Tamarack	131	28.5	2012	Even Aged	Y
Deer River	Koochiching	154	29	17	409	Ash	71	53.8	2011	Uneven Aged	
Deer River	Koochiching	154	29	25	702	Birch	60	7.9	2011	Even Aged	Y
Deer River	Koochiching	154	29	25	703	Aspen	56	43	2011	Even Aged	Y
Deer River	Koochiching	154	29	25	714	Aspen	62	16	2011	Even Aged	
Deer River	Koochiching	154	29	25	717	Balsam Fir	71	26.5	2011	Even Aged	Y
Deer River	Koochiching	154	29	30	670	Ash	146	19.7	2011	Manage for Understory	
Deer River	Koochiching	154	29	31	864	Aspen	9	25.2	2011	Alteration - Update Age	
Deer River	Koochiching	154	29	31	941	Balsam Fir	57	6.4	2012	Even Aged	Y
Deer River	Koochiching	154	29	32	811	Aspen	80	10.3	2011	Manage for Understory	
Deer River	Koochiching	154	29	32	913	Balsam Fir	83	14.8	2011	Alteration - Update Age	Y
Deer River	Koochiching	154	29	35	838	Balsam Fir	64	18.4	2013	Even Aged	
Deer River	Koochiching	154	29	36	784	Aspen	66	17.4	2011	Even Aged	
Littlefork	Koochiching	65	26	31	623	Black Spruce, Lo	129	35	2012	Even Aged	Y
Littlefork	Koochiching	65	26	31	653	Black Spruce, Lo	129	54.1	2012	Even Aged	Y
Littlefork	Koochiching	153	25	1	13	Black Spruce, Lo	167	21.2	2013	Alteration - Update Age	
Littlefork	Koochiching	153	25	1	153	Tamarack	152	179.8	2011	Even Aged	Y
Littlefork	Koochiching	153	25	5	162	Black Spruce, Lo	146	38.1	2012	Even Aged	
Littlefork	Koochiching	153	25	5	164	Black Spruce, Lo	155	5.2	2012	Even Aged	
Littlefork	Koochiching	153	25	5	168	Black Spruce, Lo	164	6.1	2012	Even Aged	Y
Littlefork	Koochiching	153	25	7	68	Tamarack	148	10.8	2013	Even Aged	Y
Littlefork	Koochiching	153	25	13	102	Black Spruce, Lo	134	9.6	2012	Even Aged	
Littlefork	Koochiching	153	25	15	207	Black Spruce, Lo	157	8.3	2012	Even Aged	
Littlefork	Koochiching	153	25	16	138	Balsam Fir	57	45.7	2012	Alteration - Update Age	
Littlefork	Koochiching	153	25	16	142	Tamarack	187	23.4	2012	Even Aged	
Littlefork	Koochiching	153	25	16	214	Black Spruce, Lo	144	20.9	2012	Even Aged	
Littlefork	Koochiching	153	25	16	336	Tamarack	187	12.4	2012	Even Aged	
Littlefork	Koochiching	153	25	18	79	Tamarack	181	16.7	2011	Even Aged	Y
Littlefork	Koochiching	153	25	18	193	Black Spruce, Lo	124	15.2	2011	Even Aged	Y
Littlefork	Koochiching	153	25	21	337	Black Spruce, Lo	188	12.5	2012	Even Aged	
Littlefork	Koochiching	153	25	22	240	Black Spruce, Lo	188	44	2013	Even Aged	
Littlefork	Koochiching	153	25	24	147	Black Spruce, Lo	122	11.3	2012	Even Aged	
Littlefork	Koochiching	153	25	26	122	Tamarack	207	20.5	2011	Even Aged	Y
Littlefork	Koochiching	153	25	34	270	Black Spruce, Lo	142	64.4	2011	Even Aged	
Littlefork	Koochiching	153	25	36	273	Black Spruce, Lo	152	83.1	2013	Alteration - Update Age	
Littlefork	Koochiching	153	26	30	190	Balsam Fir	56	13.4	2013	Even Aged	
Littlefork	Koochiching	153	26	30	192	Black Spruce, Lo	151	25.4	2013	Even Aged	
Littlefork	Koochiching	154	25	15	411	Tamarack	93	15.4	2013	Even Aged	Y
Littlefork	Koochiching	154	25	15	414	Black Spruce, Lo	147	15.2	2013	Even Aged	Y
Littlefork	Koochiching	154	25	17	424	Tamarack	96	31.1	2013	Even Aged	Y
Littlefork	Koochiching	154	25	20	428	Tamarack	96	41	2013	Even Aged	Y
Littlefork	Koochiching	154	25	29	637	Black Spruce, Lo	125	123.7	2013	Even Aged	Y
Littlefork	Koochiching	154	26	6	71	Black Spruce, Lo	100	78.5	2012	Even Aged	Y
Littlefork	Koochiching	154	26	30	294	Black Spruce, Lo	86	14.2	2011	Even Aged	Y
Littlefork	Koochiching	154	26	30	342	Black Spruce, Lo	101	7.2	2011	On Site Visit	Y
Littlefork	Koochiching	155	25	6	2	Black Spruce, Lo	130	32	2011	Even Aged	Y

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Littlefork	Koochiching	155	25	6	39	Black Spruce, Lo	114	104.8	2011	Even Aged	Y
Littlefork	Koochiching	155	26	1	18	Black Spruce, Lo	107	206.5	2011	Even Aged	Y
Littlefork	Koochiching	155	27	36	485	Black Spruce, Lo	66	90.2	2013	Even Aged	Y
Littlefork	Koochiching	155	27	36	494	Black Spruce, Lo	83	46	2013	Even Aged	Y
Littlefork	Koochiching	155	27	36	499	Black Spruce, Lo	117	56.7	2013	Even Aged	Y
Littlefork	Koochiching	155	27	36	504	Black Spruce, Lo	113	7.8	2013	Even Aged	Y
Littlefork	Koochiching	155	27	36	505	Black Spruce, Lo	116	115	2013	Even Aged	Y
Littlefork	Koochiching	155	27	36	514	Black Spruce, Lo	120	14.3	2013	Even Aged	Y
Littlefork	Koochiching	155	27	36	518	Black Spruce, Lo	118	21	2013	Even Aged	Y
Littlefork	Koochiching	155	27	36	533	Black Spruce, Lo	102	11.9	2013	Even Aged	Y
Littlefork	Koochiching	156	25	3	13	Black Spruce, Lo	110	20.5	2011	Even Aged	Y
Littlefork	Koochiching	156	25	19	273	Balsam Fir	57	59.7	2011	On Site Visit	Y
Littlefork	Koochiching	156	25	19	306	White Spruce	91	6.1	2011	Uneven Aged	Y
Littlefork	Koochiching	156	25	19	567	Aspen	100	132.3	2011	Even Aged	Y
Littlefork	Koochiching	156	25	19	569	Balsam Fir	80	14.8	2011	Even Aged	Y
Littlefork	Koochiching	156	25	20	325	Black Spruce, Lo	103	19.1	2011	Even Aged	Y
Littlefork	Koochiching	156	25	20	330	Tamarack	164	9	2011	Even Aged	Y
Littlefork	Koochiching	156	25	32	489	Black Spruce, Lo	95	39.6	2013	Even Aged	Y
Littlefork	Koochiching	156	25	32	518	Black Spruce, Lo	119	15.7	2013	Even Aged	Y
Littlefork	Koochiching	156	26	3	9	Tamarack	155	91.7	2011	Even Aged	Y
Littlefork	Koochiching	156	26	4	471	Tamarack	155	138.6	2011	Even Aged	Y
Littlefork	Koochiching	156	26	24	588	Balsam Fir	73	11.5	2011	On Site Visit	Y
Littlefork	Koochiching	156	26	33	563	Balsam Fir	68	4.7	2012	Even Aged	Y
Littlefork	Koochiching	156	26	33	570	Balsam Fir	71	8.9	2012	Even Aged	Y
Littlefork	Koochiching	156	26	34	428	Balsam Fir	77	24.3	2012	Even Aged	Y
Littlefork	Koochiching	156	26	34	573	Balsam Fir	65	11.5	2012	Even Aged	Y
Littlefork	Koochiching	156	26	36	458	Black Spruce, Lo	125	59.3	2011	Even Aged	Y
Littlefork	Koochiching	156	26	36	464	Black Spruce, Lo	128	23.3	2011	Even Aged	Y
Littlefork	Koochiching	156	26	36	469	Black Spruce, Lo	119	13.4	2011	Even Aged	Y
Littlefork	Koochiching	156	27	3	721	Tamarack	177	41.2	2012	Even Aged	Y
Littlefork	Koochiching	156	27	3	722	Tamarack	173	274.1	2012	Even Aged	Y
Littlefork	Koochiching	156	27	3	976	Tamarack	173	7.7	2012	Even Aged	Y
Littlefork	Koochiching	156	27	7	683	Tamarack	165	106.7	2013	Even Aged	Y
Littlefork	Koochiching	156	27	7	684	Tamarack	141	22.9	2013	Even Aged	Y
Littlefork	Koochiching	156	27	7	689	Tamarack	168	80.5	2013	Even Aged	Y
Littlefork	Koochiching	156	27	7	690	Tamarack	181	40.2	2013	Even Aged	Y
Littlefork	Koochiching	156	27	10	725	Tamarack	114	18.7	2012	Even Aged	Y
Littlefork	Koochiching	156	27	10	727	Tamarack	141	27.2	2012	Even Aged	Y
Littlefork	Koochiching	156	27	10	728	Tamarack	151	58.3	2012	Even Aged	Y
Littlefork	Koochiching	156	27	12	809	Balsam Fir	80	3.1	2011	Even Aged	Y
Littlefork	Koochiching	156	27	12	812	Birch	65	7.5	2011	Alteration - Update Type	Y
Littlefork	Koochiching	156	27	12	814	Balsam Fir	58	33.3	2011	Alteration - Update Type	Y
Littlefork	Koochiching	156	27	14	921	Balsam Fir	88	7.9	2011	Even Aged	Y
Littlefork	Koochiching	156	27	25	425	Balsam Fir	84	22.2	2011	Even Aged	Y
Littlefork	Koochiching	156	27	25	439	Aspen	57	6.2	2011	Even Aged	Y
Littlefork	Koochiching	156	27	25	1026	Aspen	59	8.2	2011	Even Aged	Y
Littlefork	Koochiching	156	27	26	1007	Balsam Fir	81	3.9	2011	Even Aged	Y
Littlefork	Koochiching	156	28	12	706	Tamarack	205	40.9	2013	Even Aged	Y
Littlefork	Koochiching	156	28	23	82	Balsam Fir	90	59.7	2012	Even Aged	Y
Littlefork	Koochiching	156	28	23	255	Tamarack	157	53.5	2012	Even Aged	Y
Littlefork	Koochiching	156	28	28	629	Jack Pine	63	28.9	2013	Even Aged	Y
Littlefork	Koochiching	156	28	28	680	Aspen	52	3.7	2013	Even Aged	Y
Littlefork	Koochiching	156	28	29	590	Aspen	46	136.8	2011	Alteration - Update Age	Y
Littlefork	Koochiching	156	28	32	597	Jack Pine	49	40	2011	Even Aged	Y
Littlefork	Koochiching	156	28	32	608	Norway Pine	31	27.6	2011	Thinning	Y
Littlefork	Koochiching	156	28	32	689	Norway Pine	53	2.1	2011	Thinning	Y

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Littlefork	Koochiching	156	29	26	178	Aspen	74	12.5	2012	Even Aged	Y
Littlefork	Koochiching	156	29	26	203	Aspen	76	7.1	2012	Even Aged	Y
Littlefork	Koochiching	156	29	26	234	Balm of Gilead	86	21.5	2012	Even Aged	Y
Littlefork	Koochiching	156	29	34	84	Aspen	67	337.9	2012	Even Aged	Y
Littlefork	Koochiching	156	29	34	101	Aspen	69	8.9	2012	Even Aged	Y
Littlefork	Koochiching	156	29	35	91	Aspen	70	13.8	2012	Even Aged	Y
Littlefork	Koochiching	156	29	36	104	Aspen	81	23.6	2011	On Site Visit	Y
Littlefork	Koochiching	156	29	36	148	Aspen	75	18.3	2011	Even Aged	Y
Littlefork	Koochiching	156	29	36	230	Tamarack	158	15.9	2011	Even Aged	Y
Littlefork	Koochiching	157	26	11	666	Balsam Fir	74	35.6	2012	Alteration - Update Type	Y
Littlefork	Koochiching	157	26	21	286	Aspen	88	17.5	2011	Alteration - Update Age	
Littlefork	Koochiching	157	26	22	304	Aspen	86	29.7	2011	Alteration - Update Age	
Littlefork	Koochiching	157	26	26	572	Black Spruce, Lo	322	89.3	2011	Alteration - Update Age	
Littlefork	Koochiching	157	27	2	30	Aspen	72	13.3	2012	On Site Visit	
Littlefork	Koochiching	157	27	2	53	Birch	62	23.5	2012	On Site Visit	
Littlefork	Koochiching	157	27	3	8	Aspen	62	67.1	2012	Even Aged	
Littlefork	Koochiching	157	27	12	122	Balm of Gilead	71	10.3	2011	Manage for Understory	
Littlefork	Koochiching	157	27	32	235	Tamarack	124	42.7	2011	Seed Tree	Y
Littlefork	Koochiching	157	27	32	469	Tamarack	209	32	2011	Seed Tree	Y
Littlefork	Koochiching	157	27	36	492	Balsam Fir	76	7	2011	Alteration - Update Type	
Littlefork	Koochiching	157	28	1	15	Black Spruce, Lo	73	30.9	2011	Even Aged	
Littlefork	Koochiching	157	28	1	25	Black Spruce, Lo	138	11.2	2011	Even Aged	
Littlefork	Koochiching	157	28	7	135	Tamarack	145	3.9	2011	Alteration - Update Type	
Littlefork	Koochiching	157	28	10	129	Birch	62	52.7	2013	Even Aged	
Littlefork	Koochiching	157	28	14	162	Balm of Gilead	74	23.6	2011	Alteration - Update Type	
Littlefork	Koochiching	157	28	23	266	Aspen	65	13.7	2013	Even Aged	
Littlefork	Koochiching	157	29	1	80	Aspen	69	88	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	4	42	Ash	97	53	2011	Uneven Aged	
Littlefork	Koochiching	157	29	4	85	Aspen	77	30.5	2011	Even Aged	
Littlefork	Koochiching	157	29	4	103	Ash	97	69.8	2011	Uneven Aged	
Littlefork	Koochiching	157	29	5	532	Ash	75	7.6	2011	Uneven Aged	
Littlefork	Koochiching	157	29	5	533	White Spruce	72	1.9	2011	Thinning	
Littlefork	Koochiching	157	29	8	134	Aspen	67	12.8	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	8	545	Aspen	64	23.4	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	9	194	Aspen	56	2.8	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	9	246	Birch	79	8.1	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	9	247	Tamarack	151	12.6	2011	Seed Tree	
Littlefork	Koochiching	157	29	9	522	Aspen	65	10.8	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	10	560	Birch	51	8.9	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	11	220	Aspen	63	30	2011	Alteration - Update Age	
Littlefork	Koochiching	157	29	12	159	Ash	109	105	2013	Uneven Aged	
Littlefork	Koochiching	157	29	13	258	Ash	85	74.4	2013	Uneven Aged	
Littlefork	Koochiching	157	29	13	311	Tamarack	147	15.4	2013	Seed Tree	
Littlefork	Koochiching	157	29	14	377	Tamarack	59	9.6	2013	Seed Tree	
Littlefork	Koochiching	157	29	14	573	Tamarack	155	21.6	2013	Seed Tree	
Littlefork	Koochiching	157	29	15	308	Birch	64	9.7	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	17	353	Aspen	49	7.2	2011	Even Aged	
Littlefork	Koochiching	157	29	17	578	Ash	96	9.8	2011	Uneven Aged	
Littlefork	Koochiching	157	29	17	579	Aspen	56	5.9	2011	Even Aged	
Littlefork	Koochiching	157	29	18	360	Aspen	57	17	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	21	431	White Spruce	85	5.8	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	22	426	White Spruce	118	5.2	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	23	383	Tamarack	128	64.4	2013	Seed Tree	
Littlefork	Koochiching	157	29	24	376	Tamarack	136	230.9	2013	Seed Tree	
Littlefork	Koochiching	157	29	27	450	Tamarack	155	106.9	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	29	436	Birch	76	16.4	2011	Alteration - Update Type	

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Littlefork	Koochiching	157	29	30	443	Aspen	85	6.6	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	31	459	Aspen	65	2.6	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	31	607	Aspen	71	13.8	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	33	473	White Spruce	75	4.6	2011	Alteration - Update Type	
Littlefork	Koochiching	157	29	36	537	Ash	87	186.3	2012	Uneven Aged	
Littlefork	Koochiching	158	25	31	352	Aspen	58	19.6	2013	Even Aged	Y
Littlefork	Koochiching	158	25	32	358	Aspen	49	6.2	2013	Even Aged	Y
Littlefork	Koochiching	158	25	32	360	Aspen	66	13.6	2013	Even Aged	Y
Littlefork	Koochiching	158	25	32	403	Aspen	51	8.7	2013	Even Aged	Y
Littlefork	Koochiching	158	25	32	405	Aspen	57	12.4	2013	Even Aged	Y
Littlefork	Koochiching	158	25	32	406	Balsam Fir	66	5.9	2013	Even Aged	Y
Littlefork	Koochiching	158	25	32	410	Aspen	49	17.3	2013	Even Aged	Y
Littlefork	Koochiching	158	25	32	414	Balsam Fir	62	9.5	2013	Even Aged	Y
Littlefork	Koochiching	158	25	32	448	Aspen	43	14.5	2013	Even Aged	Y
Littlefork	Koochiching	158	25	32	449	Aspen	61	17.7	2013	Even Aged	Y
Littlefork	Koochiching	158	25	32	457	Aspen	80	18.7	2013	Even Aged	Y
Littlefork	Koochiching	158	27	3	20	Aspen	69	5.8	2011	Alteration - Update Age	
Littlefork	Koochiching	158	27	3	66	Aspen	70	8.1	2011	Alteration - Update Age	
Littlefork	Koochiching	158	27	4	55	Birch	47	17.4	2011	Even Aged	
Littlefork	Koochiching	158	27	4	350	Aspen	69	17.8	2011	Alteration - Update Age	
Littlefork	Koochiching	158	27	25	339	Aspen	82	8.4	2013	Even Aged	
Littlefork	Koochiching	158	27	25	341	Aspen	56	4.4	2013	Even Aged	
Littlefork	Koochiching	158	27	25	366	Aspen	85	3.9	2013	Even Aged	
Littlefork	Koochiching	158	27	27	297	Aspen	65	54.1	2011	Manage for Understory	
Littlefork	Koochiching	158	27	27	313	Ash	123	64	2011	Manage for Understory	
Littlefork	Koochiching	158	27	27	367	Balsam Fir	70	14.5	2011	Manage for Understory	
Littlefork	Koochiching	158	27	27	384	Aspen	61	12.7	2011	Manage for Understory	
Littlefork	Koochiching	158	27	27	515	Aspen	65	2.1	2011	Manage for Understory	
Littlefork	Koochiching	158	27	28	336	Aspen	64	8.7	2011	Even Aged	
Littlefork	Koochiching	158	27	28	343	Aspen	68	18.4	2011	Even Aged	
Littlefork	Koochiching	158	27	28	359	White Spruce	40	20.1	2011	Thinning	
Littlefork	Koochiching	158	27	28	520	Aspen	42	5.5	2011	Even Aged	
Littlefork	Koochiching	158	27	32	407	Aspen	64	10	2011	Even Aged	
Littlefork	Koochiching	158	27	36	421	Birch	68	19.3	2013	On Site Visit	
Littlefork	Koochiching	158	27	36	422	Aspen	70	9.6	2013	On Site Visit	
Littlefork	Koochiching	158	27	36	423	Aspen	63	15.2	2013	On Site Visit	
Littlefork	Koochiching	158	28	2	53	Aspen	66	19.7	2011	Even Aged	
Littlefork	Koochiching	158	28	2	760	Aspen	68	8.1	2011	Even Aged	
Littlefork	Koochiching	158	28	3	57	Aspen	61	7.9	2011	Even Aged	
Littlefork	Koochiching	158	28	3	850	Birch	59	8.4	2011	Even Aged	
Littlefork	Koochiching	158	28	3	862	Black Spruce, Lo	139	6	2011	Even Aged	
Littlefork	Koochiching	158	28	3	864	Black Spruce, Lo	176	23.6	2011	Even Aged	
Littlefork	Koochiching	158	28	3	866	Black Spruce, Lo	139	33.6	2011	Even Aged	
Littlefork	Koochiching	158	28	4	867	Black Spruce, Lo	139	16.6	2011	Even Aged	
Littlefork	Koochiching	158	28	10	148	Black Spruce, Lo	135	25.2	2011	Even Aged	
Littlefork	Koochiching	158	28	10	172	Balsam Fir	81	9.1	2012	Even Aged	
Littlefork	Koochiching	158	28	10	194	Black Spruce, Lo	127	44	2011	Even Aged	
Littlefork	Koochiching	158	28	10	221	Black Spruce, Lo	157	33	2011	Even Aged	
Littlefork	Koochiching	158	28	10	232	Stag. Spruce	99	13.8	2011	Even Aged	
Littlefork	Koochiching	158	28	15	358	Aspen	62	7.7	2011	Even Aged	Y
Littlefork	Koochiching	158	28	22	419	Aspen	71	20.5	2011	Even Aged	
Littlefork	Koochiching	158	28	34	743	Balsam Fir	56	7.7	2011	Alteration - Update Type	
Littlefork	Koochiching	158	28	34	746	Balsam Fir	56	2.5	2011	Alteration - Update Type	
Littlefork	Koochiching	158	28	36	720	Black Spruce, Lo	77	17.4	2011	Even Aged	
Littlefork	Koochiching	158	28	36	729	Black Spruce, Lo	98	24.4	2011	Even Aged	
Littlefork	Koochiching	158	28	36	730	Black Spruce, Lo	98	5	2011	Even Aged	

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Littlefork	Koochiching	158	28	36	753	Black Spruce, Lo	77	20.9	2011	Even Aged	
Littlefork	Koochiching	158	28	36	910	Ash	125	28.4	2011	Alteration - Update Age	
Littlefork	Koochiching	158	29	15	172	Aspen	66	9	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	18	119	Black Spruce, Lo	153	86.4	2013	Even Aged	
Littlefork	Koochiching	158	29	18	124	Black Spruce, Lo	135	8.8	2013	Even Aged	
Littlefork	Koochiching	158	29	18	190	Black Spruce, Lo	141	86.5	2013	Even Aged	
Littlefork	Koochiching	158	29	19	239	Aspen	63	5.6	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	19	279	Aspen	66	117.1	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	19	505	Aspen	68	12.8	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	20	198	Aspen	71	107.9	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	21	262	Aspen	72	36.1	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	22	226	Aspen	65	7.2	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	22	230	Ash	117	9	2013	Uneven Aged	
Littlefork	Koochiching	158	29	22	235	Ash	117	39.4	2013	Uneven Aged	
Littlefork	Koochiching	158	29	22	247	Ash	106	19.3	2013	Uneven Aged	
Littlefork	Koochiching	158	29	22	253	Ash	106	6.2	2013	Uneven Aged	
Littlefork	Koochiching	158	29	22	269	Balsam Fir	58	14.8	2013	Even Aged	
Littlefork	Koochiching	158	29	22	658	Balsam Fir	52	2.3	2013	Even Aged	
Littlefork	Koochiching	158	29	22	662	Balsam Fir	58	5.6	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	23	300	Black Spruce, Lo	89	16.1	2013	Even Aged	
Littlefork	Koochiching	158	29	26	351	Black Spruce, Lo	74	23.3	2013	Even Aged	
Littlefork	Koochiching	158	29	27	344	Balsam Fir	45	38.5	2013	Even Aged	
Littlefork	Koochiching	158	29	27	382	Aspen	70	22.5	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	27	398	Balsam Fir	56	18.7	2013	Even Aged	
Littlefork	Koochiching	158	29	27	402	Balsam Fir	43	7.3	2013	Even Aged	
Littlefork	Koochiching	158	29	27	419	Balsam Fir	56	5.1	2013	Even Aged	
Littlefork	Koochiching	158	29	30	324	Aspen	52	36.6	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	30	325	Aspen	70	7.4	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	32	489	Aspen	64	14.9	2013	Even Aged	
Littlefork	Koochiching	158	29	32	558	Birch	82	24.5	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	33	682	Aspen	67	9.3	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	33	684	Aspen	72	11.3	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	33	685	Aspen	66	54.3	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	35	517	Aspen	78	23.2	2011	Alteration - Update Age	
Littlefork	Koochiching	158	29	35	544	Aspen	82	10.6	2011	Alteration - Update Age	
Littlefork	Koochiching	158	29	35	567	Aspen	52	20.1	2011	Alteration - Update Type	
Littlefork	Koochiching	158	29	36	592	Aspen	75	41.2	2011	Alteration - Update Type	
Littlefork	Koochiching	159	27	1	57	Birch	62	3.1	2011	Alteration - Update Type	
Littlefork	Koochiching	159	27	6	2	Aspen	50	26.2	2013	Even Aged	
Littlefork	Koochiching	159	27	6	4	Aspen	50	16.1	2013	Even Aged	
Littlefork	Koochiching	159	27	6	11	Black Spruce, Lo	147	36.5	2011	Even Aged	
Littlefork	Koochiching	159	27	8	792	Aspen	68	93.5	2013	Even Aged	
Littlefork	Koochiching	159	27	10	218	Aspen	63	10.8	2013	Even Aged	
Littlefork	Koochiching	159	27	10	226	Aspen	63	3	2013	Even Aged	
Littlefork	Koochiching	159	27	11	197	Aspen	72	8.5	2013	Alteration - Update Age	
Littlefork	Koochiching	159	27	13	809	Ash	76	3.6	2011	Alteration - Update Age	
Littlefork	Koochiching	159	27	14	275	Birch	65	11.5	2011	Alteration - Update Age	
Littlefork	Koochiching	159	27	15	249	Aspen	63	16	2013	Even Aged	
Littlefork	Koochiching	159	27	15	269	Aspen	65	22.1	2013	Even Aged	
Littlefork	Koochiching	159	27	18	285	Aspen	71	27.2	2011	Alteration - Update Type	
Littlefork	Koochiching	159	27	18	313	Aspen	67	6.4	2011	Alteration - Update Type	
Littlefork	Koochiching	159	27	26	485	Aspen	76	20.1	2011	Alteration - Update Type	
Littlefork	Koochiching	159	27	26	504	Birch	61	12	2011	Alteration - Update Type	
Littlefork	Koochiching	159	27	26	514	Aspen	69	20.9	2011	Alteration - Update Type	
Littlefork	Koochiching	159	27	28	697	Aspen	79	9	2011	Alteration - Update Age	
Littlefork	Koochiching	159	27	31	724	Aspen	66	10.3	2011	Even Aged	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Littlefork	Koochiching	159	27	31	738	Aspen	61	25.9	2011	Manage for Understory	
Littlefork	Koochiching	159	28	3	175	Aspen	67	6.6	2011	Alteration - Update Type	
Littlefork	Koochiching	159	28	3	195	Aspen	76	8.3	2011	Alteration - Update Type	
Littlefork	Koochiching	159	28	8	659	Ash	130	50.9	2011	Alteration - Update Age	
Littlefork	Koochiching	159	28	9	650	Ash	125	36.1	2011	Uneven Aged	
Littlefork	Koochiching	159	28	9	652	Ash	162	37.8	2011	Alteration - Update Age	
Littlefork	Koochiching	159	28	9	653	Ash	97	32.4	2011	Uneven Aged	
Littlefork	Koochiching	159	28	9	668	Ash	152	24.8	2011	Alteration - Update Age	
Littlefork	Koochiching	159	28	9	684	Ash	100	11.4	2011	Alteration - Update Age	
Littlefork	Koochiching	159	28	16	306	Ash	124	8.6	2011	Alteration - Update Type	
Littlefork	Koochiching	159	28	33	727	Black Spruce, Lo	144	60	2011	Even Aged	
Littlefork	Koochiching	159	28	33	729	Aspen	73	6.4	2011	Even Aged	
Littlefork	Koochiching	159	28	33	733	Aspen	65	18.1	2011	Even Aged	
Littlefork	Koochiching	159	28	34	732	Aspen	65	37.5	2011	Even Aged	
Littlefork	Koochiching	159	29	4	10	Aspen	64	12.1	2011	Alteration - Update Age	
Littlefork	Koochiching	159	29	4	18	Aspen	74	3	2011	Alteration - Update Age	
Littlefork	Koochiching	159	29	4	29	Aspen	72	5.2	2011	Alteration - Update Age	
Littlefork	Koochiching	159	29	4	300	Aspen	74	11.6	2011	Alteration - Update Age	
Littlefork	Koochiching	159	29	4	384	Aspen	65	18.5	2011	Alteration - Update Age	
Littlefork	Koochiching	159	29	24	115	Birch	69	20.5	2011	Alteration - Update Age	
Littlefork	Koochiching	159	29	24	324	Black Spruce, Lo	151	5	2011	Alteration - Update Age	
Littlefork	Koochiching	159	29	24	366	Black Spruce, Lo	130	23.6	2011	Alteration - Update Age	
Littlefork	Koochiching	159	29	26	368	Aspen	64	8	2011	Alteration - Update Age	
Littlefork	Koochiching	159	29	30	141	Aspen	58	21.6	2011	Alteration - Update Type	
Littlefork	Koochiching	159	29	35	249	Aspen	61	9.4	2011	Alteration - Update Age	
Littlefork	Koochiching	159	29	35	340	Aspen	57	143.9	2011	Alteration - Update Type	
Littlefork	Koochiching	159	29	36	242	Aspen	64	38.2	2011	Alteration - Update Age	
Littlefork	Koochiching	160	28	19	66	Aspen	56	15.4	2011	Alteration - Update Type	
Littlefork	Koochiching	160	28	30	70	Aspen	44	23.6	2011	Alteration - Update Type	
Littlefork	Koochiching	160	28	31	96	Birch	70	7.2	2011	Alteration - Update Type	
Littlefork	Koochiching	160	28	32	43	Birch	65	66.1	2011	Alteration - Update Type	
Littlefork	Koochiching	160	28	32	94	Birch	72	6	2011	Alteration - Update Type	
Littlefork	Koochiching	160	28	32	97	Birch	70	5.2	2011	Alteration - Update Type	
Littlefork	Koochiching	160	29	7	106	Aspen	68	7.3	2011	Even Aged	
Littlefork	Koochiching	160	29	13	145	Aspen	60	4.4	2011	Alteration - Update Age	
Littlefork	Koochiching	160	29	13	288	Aspen	66	4.2	2011	Alteration - Update Age	
Littlefork	Koochiching	160	29	31	220	Aspen	74	9.4	2011	Alteration - Update Age	
Warroad	Beltrami	155	34	31	160	Tamarack	139	80	2013	Even Aged	
Warroad	Beltrami	155	34	34	166	Tamarack	155	160	2013	Even Aged	
Warroad	Beltrami	155	35	19	171	Tamarack	128	80	2011	Even Aged	
Warroad	Beltrami	155	35	33	326	Tamarack	137	80	2013	Even Aged	
Warroad	Beltrami	155	36	5	8	Aspen	86	23.5	2013	Even Aged	
Warroad	Beltrami	155	36	5	799	Aspen	61	11.7	2013	Even Aged	
Warroad	Beltrami	155	36	5	800	Balm of Gilead	55	11.9	2013	Even Aged	
Warroad	Beltrami	155	36	17	283	Aspen	59	27.2	2011	Even Aged	
Warroad	Beltrami	155	36	17	291	Aspen	53	15.6	2011	Even Aged	
Warroad	Beltrami	155	36	17	323	Aspen	57	20.3	2011	Even Aged	
Warroad	Beltrami	155	36	17	327	Aspen	55	7	2011	Even Aged	
Warroad	Beltrami	155	36	17	329	Aspen	61	16	2011	Even Aged	
Warroad	Beltrami	155	36	17	345	Aspen	57	6.4	2011	Even Aged	
Warroad	Beltrami	155	36	23	506	Tamarack	47	21.8	2011	Even Aged	
Warroad	Beltrami	155	36	23	526	Tamarack	57	7.9	2011	Even Aged	
Warroad	Beltrami	155	36	24	503	Tamarack	86	21.9	2011	Even Aged	
Warroad	Beltrami	155	36	24	533	Tamarack	94	10.7	2011	Even Aged	
Warroad	Beltrami	155	36	25	551	Tamarack	86	35.8	2011	Even Aged	
Warroad	Beltrami	155	36	25	554	Tamarack	96	26.1	2011	Even Aged	

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Warroad	Beltrami	155	36	25	588	Ash	118	11.6	2011	On Site Visit	
Warroad	Beltrami	155	36	25	666	Balsam Fir	72	5.6	2011	Even Aged	
Warroad	Beltrami	155	36	25	672	Ash	119	4	2011	On Site Visit	
Warroad	Beltrami	155	36	26	549	Tamarack	57	18.6	2011	Even Aged	
Warroad	Beltrami	155	36	33	707	Aspen	67	30.5	2012	Even Aged	
Warroad	Beltrami	155	36	33	783	Aspen	70	20	2012	Even Aged	
Warroad	Beltrami	155	36	36	680	Ash	119	14.9	2011	On Site Visit	
Warroad	Beltrami	155	36	36	685	Balsam Fir	72	18.1	2011	Even Aged	
Warroad	Beltrami	155	36	36	692	Ash	112	27.8	2011	On Site Visit	
Warroad	Beltrami	155	36	36	732	Ash	141	10.6	2011	On Site Visit	
Warroad	Beltrami	155	37	31	424	Aspen	53	9	2012	Even Aged	Y
Warroad	Beltrami	155	37	31	425	Aspen	56	6.4	2012	Even Aged	Y
Warroad	Beltrami	155	37	31	427	Aspen	66	2.9	2012	Even Aged	Y
Warroad	Beltrami	155	37	31	437	Aspen	58	54	2012	Even Aged	Y
Warroad	Beltrami	155	37	31	439	Aspen	66	6	2012	Even Aged	Y
Warroad	Beltrami	155	37	32	429	Aspen	66	5.2	2012	Even Aged	Y
Warroad	Beltrami	155	37	32	440	Aspen	58	34.1	2012	Even Aged	Y
Warroad	Beltrami	155	37	32	467	Aspen	63	20.5	2012	Even Aged	Y
Warroad	Beltrami	155	37	36	492	Aspen	74	66	2012	Even Aged	
Warroad	Beltrami	155	38	36	424	Aspen	70	16.4	2012	Even Aged	
Warroad	Beltrami	155	38	36	433	Aspen	80	8.7	2012	Even Aged	
Warroad	Beltrami	155	38	36	437	Aspen	65	17.7	2012	Even Aged	
Warroad	Beltrami	155	38	36	445	Aspen	57	22.8	2012	Even Aged	
Warroad	Beltrami	156	34	8	220	Black Spruce, Lo	151	45.7	2012	Even Aged	
Warroad	Beltrami	156	34	11	58	Black Spruce, Lo	164	68.2	2011	Even Aged	
Warroad	Beltrami	156	34	11	221	Black Spruce, Lo	164	17	2011	Even Aged	
Warroad	Beltrami	156	34	15	143	Black Spruce, Lo	130	80.2	2012	Even Aged	
Warroad	Beltrami	156	34	21	173	Black Spruce, Lo	150	22.2	2012	Even Aged	
Warroad	Beltrami	156	34	21	222	Black Spruce, Lo	150	8.1	2012	Even Aged	
Warroad	Beltrami	156	34	29	193	Black Spruce, Lo	126	197.8	2012	On Site Visit	
Warroad	Beltrami	156	36	2	74	Aspen	61	20.7	2012	Even Aged	
Warroad	Beltrami	156	36	11	107	Balm of Gilead	63	4.6	2012	Even Aged	
Warroad	Beltrami	156	36	12	108	Aspen	63	11.4	2012	Even Aged	
Warroad	Beltrami	156	36	12	132	Aspen	66	50.5	2012	Even Aged	
Warroad	Beltrami	156	36	12	134	Aspen	63	62.2	2012	Even Aged	
Warroad	Beltrami	156	36	20	350	Aspen	59	11.8	2012	Even Aged	
Warroad	Beltrami	156	36	20	366	Aspen	63	13.3	2012	Even Aged	
Warroad	Beltrami	156	36	20	372	Aspen	67	5.6	2012	Alteration - Update Type	
Warroad	Beltrami	156	36	27	464	Aspen	78	12.5	2013	On Site Visit	
Warroad	Beltrami	156	36	27	467	Aspen	72	16.1	2013	On Site Visit	
Warroad	Beltrami	156	36	28	461	Aspen	61	12.1	2013	Even Aged	
Warroad	Beltrami	156	36	33	480	Balm of Gilead	54	3.6	2013	Even Aged	
Warroad	Beltrami	156	36	33	481	Aspen	68	62.4	2013	Even Aged	
Warroad	Beltrami	156	36	33	513	Balm of Gilead	56	8.9	2013	On Site Visit	
Warroad	Beltrami	156	36	34	482	Aspen	68	23.9	2013	Even Aged	
Warroad	Beltrami	156	36	34	484	Aspen	72	11.7	2013	On Site Visit	
Warroad	Beltrami	156	36	34	493	Aspen	67	17.8	2013	On Site Visit	
Warroad	Beltrami	157	36	5	12	Aspen	71	16.4	2013	Even Aged	
Warroad	Beltrami	157	36	5	48	Balm of Gilead	64	21.8	2013	Even Aged	
Warroad	Beltrami	157	36	5	75	Aspen	65	12.5	2013	Even Aged	
Warroad	Beltrami	157	36	6	2	Aspen	63	11.2	2013	Even Aged	
Warroad	Beltrami	157	36	6	3	Aspen	46	17.7	2013	Even Aged	
Warroad	Beltrami	157	36	6	4	Aspen	57	31.9	2013	Even Aged	
Warroad	Beltrami	157	36	6	5	Aspen	57	11.4	2013	Even Aged	
Warroad	Beltrami	157	36	6	32	Aspen	71	10	2013	Even Aged	
Warroad	Beltrami	157	36	6	90	Aspen	72	15	2013	Even Aged	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Warroad	Beltrami	157	36	6	95	Balm of Gilead	59	8.7	2013	Even Aged	
Warroad	Beltrami	157	36	10	232	Tamarack	112	4.6	2013	Even Aged	Y
Warroad	Beltrami	157	36	10	253	Tamarack	38	39.8	2013	Even Aged	Y
Warroad	Beltrami	157	36	11	219	Tamarack	112	39.5	2013	Even Aged	Y
Warroad	Beltrami	157	36	11	226	Tamarack	55	25.6	2013	Even Aged	Y
Warroad	Beltrami	157	36	11	228	Tamarack	7	8.9	2013	Even Aged	Y
Warroad	Beltrami	157	36	11	234	Tamarack	48	20.9	2013	Even Aged	Y
Warroad	Beltrami	157	36	11	238	Tamarack	114	20.5	2013	Even Aged	Y
Warroad	Beltrami	157	36	11	243	Tamarack	38	18.6	2013	Even Aged	Y
Warroad	Beltrami	157	36	11	251	Tamarack	136	91.5	2013	Even Aged	Y
Warroad	Beltrami	157	36	11	261	Tamarack	59	18	2013	Even Aged	Y
Warroad	Beltrami	157	36	12	199	Tamarack	156	22.3	2013	Even Aged	
Warroad	Beltrami	157	36	12	222	Tamarack	156	7	2013	Even Aged	
Warroad	Beltrami	157	36	12	231	Tamarack	138	15.5	2013	Even Aged	
Warroad	Beltrami	157	36	19	391	Tamarack	107	152.7	2012	Even Aged	
Warroad	Beltrami	157	36	19	392	Tamarack	150	27	2012	Even Aged	
Warroad	Beltrami	157	36	19	421	Tamarack	42	8.9	2012	Even Aged	
Warroad	Beltrami	157	36	19	426	Tamarack	114	21.5	2012	Even Aged	
Warroad	Beltrami	157	36	20	353	Tamarack	106	17.4	2012	Even Aged	
Warroad	Beltrami	157	36	21	422	Tamarack	73	125.5	2012	Even Aged	Y
Warroad	Beltrami	157	36	22	372	Tamarack	92	246.5	2012	Even Aged	Y
Warroad	Beltrami	157	36	23	376	Tamarack	92	56.8	2012	Even Aged	Y
Warroad	Beltrami	157	36	23	378	Tamarack	87	162.4	2012	Even Aged	Y
Warroad	Beltrami	157	37	5	63	Balm of Gilead	67	4.9	2012	Even Aged	
Warroad	Beltrami	157	37	5	65	Aspen	75	14.9	2012	Even Aged	
Warroad	Beltrami	157	37	5	66	Balm of Gilead	65	10	2012	Even Aged	
Warroad	Beltrami	157	37	6	4	Balm of Gilead	64	45.3	2012	Even Aged	
Warroad	Beltrami	157	37	6	59	Aspen	65	70.5	2012	Even Aged	
Warroad	Beltrami	157	37	7	93	Aspen	83	61	2012	Even Aged	
Warroad	Beltrami	157	37	7	104	Balm of Gilead	71	19.2	2012	Even Aged	
Warroad	Beltrami	157	37	8	90	Aspen	73	14.6	2012	Even Aged	
Warroad	Beltrami	157	37	8	305	Aspen	70	14.8	2012	Even Aged	
Warroad	Beltrami	157	38	13	285	Aspen	86	24.6	2013	Even Aged	
Warroad	Beltrami	157	38	15	225	Aspen	71	21.8	2013	Even Aged	
Warroad	Beltrami	157	38	15	260	Balm of Gilead	81	6.5	2013	Even Aged	
Warroad	Beltrami	157	38	21	296	Aspen	79	27.4	2013	Even Aged	
Warroad	Beltrami	157	38	21	300	Aspen	76	40.4	2013	Even Aged	
Warroad	Beltrami	157	38	21	333	Aspen	82	22.6	2013	Even Aged	
Warroad	Beltrami	157	38	22	358	Aspen	90	23.8	2013	Even Aged	
Warroad	Beltrami	157	38	27	433	Aspen	83	37.7	2013	Even Aged	
Warroad	Beltrami	157	38	28	428	Aspen	80	25.1	2013	Even Aged	
Warroad	Beltrami	157	38	31	555	Aspen	78	42.6	2013	Even Aged	
Warroad	Beltrami	157	38	31	580	Aspen	78	11.4	2013	Even Aged	
Warroad	Beltrami	157	38	33	548	Aspen	76	37.3	2013	Even Aged	
Warroad	Beltrami	157	38	35	572	Balm of Gilead	76	7.5	2013	Even Aged	
Warroad	Beltrami	157	38	35	590	Aspen	71	8.3	2013	Even Aged	
Warroad	Beltrami	158	36	11	121	Balsam Fir	41	27.9	2011	Even Aged	
Warroad	Beltrami	158	36	11	530	Balsam Fir	41	5.2	2011	Even Aged	
Warroad	Beltrami	158	36	12	126	Balsam Fir	41	40	2011	Even Aged	
Warroad	Beltrami	158	36	18	200	Aspen	61	9	2013	Even Aged	
Warroad	Beltrami	158	36	18	230	Aspen	67	21.1	2013	Even Aged	
Warroad	Beltrami	158	36	22	291	Aspen	68	55	2013	Even Aged	
Warroad	Beltrami	158	36	23	300	Aspen	72	122.2	2013	Even Aged	
Warroad	Beltrami	158	36	31	426	Aspen	73	9.6	2013	Even Aged	
Warroad	Beltrami	158	36	31	428	Aspen	73	9.9	2013	Even Aged	
Warroad	Beltrami	158	36	31	430	Aspen	73	10	2013	Even Aged	

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Warroad	Beltrami	158	36	31	446	Aspen	73	5.3	2013	Even Aged	
Warroad	Beltrami	158	36	31	461	Aspen	73	7.4	2013	Even Aged	
Warroad	Beltrami	158	36	31	466	Aspen	73	3.8	2013	Even Aged	
Warroad	Beltrami	158	36	32	424	Aspen	73	11.8	2013	Even Aged	
Warroad	Beltrami	158	36	32	438	Aspen	73	5.2	2013	Even Aged	
Warroad	Beltrami	158	36	32	459	Aspen	73	6.4	2013	Even Aged	
Warroad	Beltrami	158	36	32	479	Aspen	73	3.4	2013	Even Aged	
Warroad	Beltrami	158	37	8	165	Aspen	61	39.7	2011	Even Aged	
Warroad	Beltrami	158	37	12	206	Aspen	61	10.4	2013	Even Aged	
Warroad	Beltrami	158	37	12	213	Aspen	65	6.8	2013	Even Aged	
Warroad	Beltrami	158	37	13	240	Aspen	65	5.7	2013	Even Aged	
Warroad	Beltrami	158	37	13	265	Aspen	61	51.9	2013	Even Aged	
Warroad	Beltrami	158	37	25	449	Aspen	67	8.5	2013	Even Aged	
Warroad	Beltrami	158	37	25	470	Aspen	61	66.1	2013	Even Aged	
Warroad	Beltrami	158	37	36	504	Aspen	70	20.3	2013	Even Aged	
Warroad	Beltrami	158	37	36	508	Balm of Gilead	63	7.9	2013	Even Aged	
Warroad	Beltrami	158	38	1	53	Aspen	79	29	2011	Even Aged	Y
Warroad	Beltrami	158	38	10	94	Aspen	79	32.2	2011	Even Aged	
Warroad	Beltrami	158	38	11	118	Aspen	82	29.3	2011	Even Aged	Y
Warroad	Beltrami	158	38	11	161	Aspen	73	99.1	2011	Even Aged	
Warroad	Beltrami	158	38	12	145	Aspen	77	4.1	2011	Even Aged	Y
Warroad	Beltrami	158	38	12	166	Aspen	73	25.1	2011	Even Aged	Y
Warroad	Beltrami	158	38	12	172	Aspen	76	8.3	2011	Even Aged	Y
Warroad	Beltrami	158	38	17	221	Aspen	74	53.8	2011	Even Aged	
Warroad	Beltrami	158	38	18	229	Aspen	87	69.7	2011	Even Aged	
Warroad	Beltrami	158	38	18	262	Aspen	77	41.3	2011	Even Aged	
Warroad	Beltrami	158	38	20	320	Aspen	77	13.3	2011	Even Aged	
Warroad	Beltrami	158	38	20	336	Aspen	76	10.9	2011	Even Aged	
Warroad	Beltrami	158	38	22	307	Aspen	81	20.5	2011	Even Aged	
Warroad	Beltrami	158	38	23	302	Aspen	91	7.3	2011	Even Aged	Y
Warroad	Beltrami	158	38	23	339	Aspen	79	45.7	2011	Even Aged	Y
Warroad	Beltrami	158	38	25	469	Aspen	78	40.1	2011	Even Aged	
Warroad	Beltrami	158	38	25	495	Aspen	101	11.5	2011	Even Aged	
Warroad	Beltrami	158	38	35	511	Balm of Gilead	82	12.7	2011	Even Aged	
Warroad	Beltrami	158	38	35	575	Aspen	70	11.1	2011	Even Aged	
Warroad	Beltrami	158	38	35	591	Balm of Gilead	71	5.3	2011	Even Aged	
Warroad	Beltrami	158	38	35	599	Aspen	72	24.1	2011	Even Aged	
Warroad	Beltrami	158	38	36	553	Balm of Gilead	77	9.6	2011	Even Aged	
Warroad	Lake of the Woods	159	36	7	117	Aspen	41	4.5	2012	On Site Visit	
Warroad	Lake of the Woods	159	36	7	120	Aspen	34	11.8	2012	On Site Visit	
Warroad	Lake of the Woods	159	36	7	162	Balm of Gilead	47	20	2012	Manage for Understory	
Warroad	Lake of the Woods	159	36	7	167	Aspen	63	9.7	2012	On Site Visit	
Warroad	Lake of the Woods	159	36	9	159	Aspen	73	17.1	2012	Manage for Understory	
Warroad	Lake of the Woods	159	36	9	176	Aspen	74	15.9	2012	Alteration - Update Type	
Warroad	Lake of the Woods	159	36	13	268	Jack Pine	79	37.1	2012	Even Aged	
Warroad	Lake of the Woods	159	36	13	306	Jack Pine	79	6	2012	Even Aged	
Warroad	Lake of the Woods	159	36	14	246	Aspen	68	16.2	2012	Manage for Understory	
Warroad	Lake of the Woods	159	36	15	230	Aspen	53	60.3	2012	Manage for Understory	
Warroad	Lake of the Woods	159	36	15	743	Aspen	71	3.6	2012	Even Aged	
Warroad	Lake of the Woods	159	36	16	211	Aspen	74	37.5	2012	Manage for Understory	
Warroad	Lake of the Woods	159	36	16	327	Jack Pine	62	10	2012	Even Aged	
Warroad	Lake of the Woods	159	36	17	195	Aspen	272	9	2012	Alteration - Update Type	
Warroad	Lake of the Woods	159	36	20	436	Aspen	91	18.9	2012	On Site Visit	
Warroad	Lake of the Woods	159	36	21	519	Balsam Fir	56	26	2012	Even Aged	
Warroad	Lake of the Woods	159	36	22	377	Balm of Gilead	63	9.1	2012	Manage for Understory	
Warroad	Lake of the Woods	159	36	22	378	Balm of Gilead	63	12.3	2012	Even Aged	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Warroad	Lake of the Woods	159	36	22	461	Balsam Fir	56	19	2012	Even Aged	
Warroad	Lake of the Woods	159	36	22	480	Balsam Fir	90	46	2012	Even Aged	
Warroad	Lake of the Woods	159	36	22	745	Aspen	74	17.6	2012	Even Aged	
Warroad	Lake of the Woods	159	36	23	434	Aspen	66	17.1	2012	Manage for Understory	
Warroad	Lake of the Woods	159	36	23	451	Aspen	57	67.7	2012	Even Aged	
Warroad	Lake of the Woods	159	36	23	464	Aspen	41	26.4	2012	Manage for Understory	
Warroad	Lake of the Woods	159	36	23	521	Aspen	66	98	2012	Even Aged	
Warroad	Lake of the Woods	159	36	23	790	Aspen	51	31.6	2012	Even Aged	
Warroad	Lake of the Woods	159	36	26	566	Balm of Gilead	66	26.2	2012	Even Aged	
Warroad	Lake of the Woods	159	36	26	567	Aspen	65	26	2012	Even Aged	
Warroad	Lake of the Woods	159	36	26	578	Aspen	62	18.8	2012	Even Aged	
Warroad	Lake of the Woods	159	36	28	552	Balsam Fir	56	14.6	2012	Even Aged	
Warroad	Lake of the Woods	159	36	29	577	Aspen	56	48.3	2012	Even Aged	
Warroad	Lake of the Woods	159	36	32	693	Aspen	74	10.8	2012	Manage for Understory	
Warroad	Lake of the Woods	160	36	4	19	Jack Pine	67	16.7	2013	Even Aged	
Warroad	Lake of the Woods	160	36	4	59	Aspen	66	93.5	2013	Even Aged	
Warroad	Lake of the Woods	160	36	4	107	Balm of Gilead	67	8.6	2013	Even Aged	
Warroad	Lake of the Woods	160	36	5	13	Aspen	66	23.4	2013	Even Aged	
Warroad	Lake of the Woods	160	36	5	48	Aspen	35	19.7	2013	Even Aged	
Warroad	Lake of the Woods	160	36	6	94	Balm of Gilead	70	38.7	2013	Manage for Understory	
Warroad	Lake of the Woods	160	36	8	160	Aspen	62	79.4	2013	On Site Visit	
Warroad	Lake of the Woods	160	36	8	166	Aspen	38	73.8	2013	On Site Visit	
Warroad	Lake of the Woods	160	36	13	269	Aspen	66	39.7	2011	Even Aged	
Warroad	Lake of the Woods	160	36	13	298	Balm of Gilead	46	21.2	2011	Alteration - Update Type	
Warroad	Lake of the Woods	160	36	17	208	Aspen	38	31.4	2013	On Site Visit	
Warroad	Lake of the Woods	160	36	17	286	Balsam Fir	70	6.4	2011	Even Aged	
Warroad	Lake of the Woods	160	36	18	287	Jack Pine	30	6.4	2011	Even Aged	
Warroad	Lake of the Woods	160	36	18	295	Jack Pine	69	33.5	2011	Even Aged	
Warroad	Lake of the Woods	160	36	21	319	Aspen	70	8.1	2011	Even Aged	Y
Warroad	Lake of the Woods	160	36	21	323	Aspen	73	7.4	2011	Even Aged	
Warroad	Lake of the Woods	160	36	21	325	Balm of Gilead	62	29.3	2011	Even Aged	
Warroad	Lake of the Woods	160	36	23	393	Aspen	69	36	2011	Even Aged	Y
Warroad	Lake of the Woods	160	36	24	366	Balm of Gilead	73	22.9	2011	Alteration - Update Age	Y
Warroad	Lake of the Woods	160	36	24	374	Balm of Gilead	67	8.3	2011	Even Aged	Y
Warroad	Lake of the Woods	160	36	24	399	Aspen	76	15.3	2011	Alteration - Update Age	Y
Warroad	Lake of the Woods	160	36	29	529	Jack Pine	65	7.9	2011	Even Aged	
Warroad	Lake of the Woods	160	36	29	570	Jack Pine	71	4	2011	Even Aged	
Warroad	Lake of the Woods	160	36	30	467	Aspen	71	5.7	2011	Alteration - Update Age	
Warroad	Lake of the Woods	160	36	30	486	Balm of Gilead	74	12.4	2011	Alteration - Update Age	
Warroad	Lake of the Woods	160	36	30	573	Aspen	43	13.6	2011	Alteration - Update Age	
Warroad	Lake of the Woods	160	36	30	584	Aspen	72	56.2	2011	Alteration - Update Age	
Warroad	Lake of the Woods	160	36	31	646	Jack Pine	104	4.5	2011	Alteration - Update Age	
Warroad	Lake of the Woods	160	36	31	650	Balm of Gilead	67	32.6	2011	Even Aged	
Warroad	Lake of the Woods	160	36	32	745	Aspen	71	8.9	2011	Alteration - Update Type	
Warroad	Lake of the Woods	167	35	23	46	Aspen	121	27.3	2011	Manage for Understory	
Warroad	Lake of the Woods	168	34	33	46	Birch	111	9.1	2011	Manage for Understory	
Warroad	Lake of the Woods	168	34	34	41	Birch	111	19.1	2011	Manage for Understory	
Warroad	Roseau	159	37	2	172	Aspen	72	4.3	2012	Even Aged	
Warroad	Roseau	159	37	7	317	Aspen	64	22.6	2012	Manage for Understory	
Warroad	Roseau	159	37	8	364	Jack Pine	92	3.8	2012	Alteration - Update Type	
Warroad	Roseau	159	37	11	192	Aspen	58	10.3	2012	Even Aged	
Warroad	Roseau	159	37	11	233	Aspen	52	2.2	2012	Even Aged	
Warroad	Roseau	159	37	11	257	Aspen	83	12.2	2012	Even Aged	
Warroad	Roseau	159	37	11	278	Aspen	58	10.8	2012	Even Aged	
Warroad	Roseau	159	37	11	349	Aspen	62	6.4	2012	Even Aged	
Warroad	Roseau	159	37	12	205	Balm of Gilead	61	32.4	2012	Even Aged	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Warroad	Roseau	159	37	12	250	Balm of Gilead	64	3.9	2012	Even Aged	
Warroad	Roseau	159	37	15	514	Balm of Gilead	61	25.6	2012	Alteration - Update Type	
Warroad	Roseau	159	37	16	431	Aspen	70	22.4	2012	Even Aged	
Warroad	Roseau	159	37	16	448	Aspen	78	38.1	2012	Even Aged	
Warroad	Roseau	159	37	16	490	Aspen	71	15.2	2012	Even Aged	
Warroad	Roseau	159	37	16	512	Aspen	74	17	2012	Alteration - Update Type	
Warroad	Roseau	159	37	20	582	Balsam Fir	54	11.9	2012	Even Aged	
Warroad	Roseau	159	37	20	599	Balsam Fir	57	19.4	2012	Even Aged	
Warroad	Roseau	159	37	21	567	Aspen	72	17.8	2012	Even Aged	
Warroad	Roseau	159	37	21	680	Balsam Fir	57	43.4	2012	Even Aged	
Warroad	Roseau	159	37	26	758	Jack Pine	61	18.4	2011	Even Aged	
Warroad	Roseau	159	37	26	781	Jack Pine	52	17.2	2011	Even Aged	
Warroad	Roseau	159	37	32	878	Aspen	52	10.5	2012	Manage for Understory	
Warroad	Roseau	159	37	32	879	Aspen	65	15.8	2012	Manage for Understory	
Warroad	Roseau	159	37	36	905	Jack Pine	39	18.8	2011	Alteration - Update Type	
Warroad	Roseau	159	37	36	911	Balsam Fir	44	4.9	2011	Even Aged	
Warroad	Roseau	159	37	36	928	Balsam Fir	60	8.5	2011	Even Aged	
Warroad	Roseau	159	37	36	944	Balsam Fir	51	8.6	2011	Even Aged	
Warroad	Roseau	159	37	36	945	Balsam Fir	44	8.3	2011	Even Aged	
Warroad	Roseau	159	38	15	148	Aspen	61	10.6	2012	Even Aged	
Warroad	Roseau	159	38	16	346	Jack Pine	62	34.6	2012	Even Aged	
Warroad	Roseau	159	38	16	349	Aspen	67	8	2012	Even Aged	
Warroad	Roseau	159	38	16	350	Aspen	63	17.5	2012	Even Aged	
Warroad	Roseau	159	38	16	351	Jack Pine	59	11.2	2012	Even Aged	
Warroad	Roseau	159	38	17	333	Aspen	61	25.4	2012	Even Aged	
Warroad	Roseau	159	38	17	347	Aspen	51	101.1	2012	Even Aged	
Warroad	Roseau	159	39	26	79	Jack Pine	57	8.9	2011	Even Aged	
Warroad	Roseau	159	39	26	80	Jack Pine	63	25.2	2011	Even Aged	
Warroad	Roseau	159	39	36	99	Aspen	62	17.3	2011	Manage for Understory	
Warroad	Roseau	159	39	36	108	Balsam Fir	46	26.6	2011	Even Aged	
Warroad	Roseau	160	37	2	33	Aspen	56	24.2	2011	Even Aged	
Warroad	Roseau	160	37	2	49	Aspen	59	14.1	2011	Even Aged	
Warroad	Roseau	160	37	2	53	Aspen	52	15.2	2011	Even Aged	
Warroad	Roseau	160	37	2	77	Aspen	62	4.3	2011	Even Aged	
Warroad	Roseau	160	37	2	112	Aspen	60	44.9	2011	Even Aged	
Warroad	Roseau	160	37	2	609	Aspen	62	22.9	2011	Even Aged	
Warroad	Roseau	160	37	3	20	Jack Pine	58	33.9	2011	Even Aged	
Warroad	Roseau	160	37	4	700	Jack Pine	77	16.1	2011	Even Aged	
Warroad	Roseau	160	37	7	190	Jack Pine	60	13	2012	Even Aged	
Warroad	Roseau	160	37	8	144	Jack Pine	67	8.5	2011	Even Aged	
Warroad	Roseau	160	37	10	122	Aspen	61	11.4	2011	Even Aged	
Warroad	Roseau	160	37	10	659	Balsam Fir	47	28.1	2013	Alteration - Update Type	
Warroad	Roseau	160	37	11	57	Aspen	56	15.3	2011	Even Aged	
Warroad	Roseau	160	37	13	251	Aspen	64	31.5	2011	Even Aged	
Warroad	Roseau	160	37	18	208	Jack Pine	63	63.4	2013	Even Aged	
Warroad	Roseau	160	37	18	690	Jack Pine	73	32.9	2011	Even Aged	
Warroad	Roseau	160	37	29	396	Jack Pine	69	9.7	2012	Even Aged	
Warroad	Roseau	160	37	30	401	Jack Pine	68	17.9	2012	Even Aged	
Warroad	Roseau	160	37	36	577	Jack Pine	53	12.8	2012	Even Aged	
Warroad	Roseau	160	37	36	620	Jack Pine	52	48.5	2012	Even Aged	
Warroad	Roseau	160	38	3	12	Aspen	60	47.9	2011	Even Aged	
Warroad	Roseau	160	38	3	31	Aspen	66	14.9	2011	Even Aged	
Warroad	Roseau	160	38	12	121	Jack Pine	77	34.3	2013	Even Aged	
Warroad	Roseau	160	38	12	164	Jack Pine	60	21.7	2012	Even Aged	
Warroad	Roseau	160	38	14	241	Balsam Fir	43	12.5	2013	Even Aged	
Warroad	Roseau	160	38	14	258	Balsam Fir	69	5.6	2013	Manage for Understory	

Forestry Area	County	Twp.	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Warroad	Roseau	160	38	14	262	Balsam Fir	69	7.3	2013	Manage for Understory	
Warroad	Roseau	160	38	14	392	Balsam Fir	50	11.2	2013	Even Aged	
Warroad	Roseau	160	38	21	455	Balm of Gilead	72	6.1	2013	Even Aged	Y
Warroad	Roseau	160	38	23	417	Balsam Fir	50	6.6	2013	Even Aged	
Warroad	Roseau	160	38	23	425	Balsam Fir	51	17.6	2013	Even Aged	
Warroad	Roseau	160	38	24	512	Jack Pine	67	12.8	2012	Even Aged	
Warroad	Roseau	160	38	36	844	Jack Pine	62	8.7	2012	Even Aged	
Warroad	Roseau	161	35	2	28	Jack Pine	68	26.4	2013	Even Aged	
Warroad	Roseau	161	35	21	240	Jack Pine	55	29.3	2013	Even Aged	
Warroad	Roseau	161	35	22	248	Jack Pine	55	11.2	2013	Even Aged	
Warroad	Roseau	161	35	22	252	White Spruce	17	28.9	2013	Thinning	
Warroad	Roseau	161	35	35	869	Jack Pine	72	9.6	2013	Even Aged	
Warroad	Roseau	161	36	25	504	Aspen	44	28.7	2011	Even Aged	
Warroad	Roseau	161	36	33	775	Aspen	62	50.1	2013	Even Aged	
Warroad	Roseau	161	36	33	820	Aspen	58	12.7	2013	Alteration - Update Type	
Warroad	Roseau	161	37	14	102	Balm of Gilead	148	10	2011	Even Aged	
Warroad	Roseau	161	37	17	87	Aspen	61	169.8	2011	Even Aged	
Warroad	Roseau	161	37	17	155	Aspen	61	23.4	2011	Even Aged	
Warroad	Roseau	161	37	20	265	Aspen	66	45.5	2011	Even Aged	
Warroad	Roseau	161	37	20	377	Balm of Gilead	67	9.9	2011	Even Aged	
Warroad	Roseau	161	37	33	832	Jack Pine	96	10.9	2012	Even Aged	
Warroad	Roseau	163	37	22	209	Aspen	51	14.2	2013	Even Aged	
Warroad	Roseau	163	37	28	262	Aspen	53	17.4	2013	Even Aged	
Warroad	Roseau	163	37	30	277	Balm of Gilead	67	29.1	2013	Even Aged	
Warroad	Roseau	163	38	6	41	Tamarack	125	30.7	2013	Even Aged	
Warroad	Roseau	163	38	23	305	Jack Pine	60	57.1	2013	Even Aged	
Warroad	Roseau	163	41	1	28	Birch	56	13	2011	On Site Visit	Y
Warroad	Roseau	163	41	1	33	Birch	66	9.7	2011	On Site Visit	Y
Warroad	Roseau	163	41	1	36	Aspen	71	47.7	2011	Even Aged	Y
Warroad	Roseau	163	41	1	48	Birch	55	13.1	2011	On Site Visit	Y
Warroad	Roseau	164	38	25	31	Black Spruce, Lo	140	36.8	2013	Even Aged	
Warroad	Roseau	164	38	31	104	Aspen	53	190.9	2013	Even Aged	
Warroad	Roseau	164	38	35	172	Black Spruce, Lo	124	22.6	2013	Even Aged	
Warroad	Roseau	164	38	35	211	Black Spruce, Lo	136	6.9	2013	Even Aged	
Warroad	Roseau	164	38	36	264	Black Spruce, Lo	151	12.2	2013	Alteration - Update Age	
Warroad	Roseau	164	39	27	31	Tamarack	132	33.9	2011	Even Aged	
Warroad	Roseau	164	39	27	63	Tamarack	103	29.2	2011	Even Aged	
Warroad	Roseau	164	39	31	171	Tamarack	121	58.8	2011	Even Aged	
Warroad	Roseau	164	39	31	199	Tamarack	103	38.5	2011	Even Aged	
Warroad	Roseau	164	39	31	218	Tamarack	121	7.5	2011	Even Aged	
Warroad	Roseau	164	39	31	219	Tamarack	121	16.8	2011	Even Aged	
Warroad	Roseau	164	39	32	102	Tamarack	113	61.9	2011	Even Aged	
Warroad	Roseau	164	39	32	105	Tamarack	109	55.4	2011	Even Aged	
Warroad	Roseau	164	39	33	110	Tamarack	125	49.8	2011	Even Aged	
Warroad	Roseau	164	40	29	16	Aspen	56	11.6	2011	Even Aged	
Warroad	Roseau	164	40	29	50	Tamarack	124	10.2	2011	Even Aged	
Warroad	Roseau	164	40	29	77	Tamarack	128	20	2011	Even Aged	Y
Warroad	Roseau	164	40	32	151	Tamarack	133	8.2	2011	Even Aged	Y
Warroad	Roseau	164	40	32	189	Tamarack	122	9.3	2011	Even Aged	Y

¹ Reflects Forestry Area boundaries that were adjusted after stand selection.

Appendix B Three-Year Stands with a White Pine Component

The Table B.1 identifies the stands selected for the Agassiz Lowlands Three-Year Stand Exam List extension that are either typed in the DNR forest inventory as white pine cover type (i.e., white pine is the predominant species by volume) or stands that contain white pine as a secondary species.

The data fields are defined as follows:

1. Forestry Area: The subsection has five DNR Forestry Area offices – Baudette, Blackduck, Littlefork, Warroad and Deer River. A minor portion of the AL subsection extends into the Deer River Forestry Area, however no stands were identified in need of treatment for the three-year extension period.
2. Twp Rge Sec: Township number; Range number; Section number.
3. Stand No.: Unique stand number assigned in the township.
4. Cover type: The forest cover type classification of the stand. Typically, the predominant tree species or tree species group in the stand.
5. Age: Age of the stand in 2009.
6. Acres: Stand acres identified to be reviewed for potential treatment (may not include entire stand)
7. Preliminary Prescription: The proposed general action to be taken to achieve a desired management objective based on information available at the time of stand selection. This will be verified or revised based on a subsequent on-site visit. See Appendix E Glossary for definitions.
8. Stand Exam Year: Fiscal Year (FY = July 1 through June 30). The FY when the stand examination is planned. Following the stand evaluation, if the stand conditions are suitable for timber harvest then a timber appraisal is completed.
9. New Access: Estimated miles of new road/route needed to access the stand. Mileage is assigned to the stand at the end of the new access route.

Table B.1 Stands Selected with a White Pine component **by Forestry Area¹**

Forestry Area	County	Twp	Rg.	S.	Stand No.	Cover Type	2009 Age	Treatment Acres	Exam Year	Preliminary Prescription	New Access
Baudette	Lake of the Woods	157	34	25	277	Birch	66	4.3	2012	On Site Visit	
Baudette	Lake of the Woods	158	34	2	96	Balsam Fir	74	21.1	2011	Even Aged	
Baudette	Lake of the Woods	158	34	9	205	Aspen	72	9.7	2011	Manage for Understory	
Baudette	Lake of the Woods	158	34	9	220	Aspen	84	2.9	2011	Manage for Understory	
Baudette	Lake of the Woods	158	34	10	213	White Spruce	108	14.1	2012	On Site Visit	
Baudette	Lake of the Woods	158	34	10	228	Aspen	85	8.3	2011	Manage for Understory	
Baudette	Lake of the Woods	158	34	26	686	Aspen	61	15.9	2011	Alteration - Update Age	
Blackduck	Beltrami	153	31	24	207	Norway Pine	27	31.1	2011	On Site Visit	
Littlefork	Koochiching	156	26	34	573	Balsam Fir	65	11.5	2012	Even Aged	Y
Littlefork	Koochiching	156	27	12	812	Birch	65	7.5	2011	Alteration - Update Type	Y
Littlefork	Koochiching	156	27	14	921	Balsam Fir	88	7.9	2011	Even Aged	Y
Littlefork	Koochiching	156	28	28	680	Aspen	52	3.7	2013	Even Aged	Y
Littlefork	Koochiching	157	26	21	286	Aspen	88	17.5	2011	Alteration - Update Age	
Littlefork	Koochiching	157	29	29	436	Birch	76	16.4	2011	Alteration - Update Type	
Warroad	Lake of the Woods	159	36	15	230	Aspen	53	60.3	2012	Manage for Understory	

¹ Reflects Forestry Area boundaries that were adjusted after stand selection.

Appendix C

Agassiz Lowlands SFRMP Monitoring Report

Background

Monitoring of SFRMP implementation is vital to determine if SFRMP planned actions are implemented and if those actions are effective. Through the SFRMP process, plan goals and desired future forest conditions (DFFCs) are defined with short term and long-term measures. From time to time during plan implementation it is intended that monitoring occur to evaluate the effectiveness of management activities in meeting the stated goals and DFFCs. This Monitoring Report is intended to compare SFRMP DFFCs and objectives with actual, on the ground, actions as reported over the plan implementation period.

This Monitoring Report evaluates: background information prepared by Forestry Central Office (See Appendix); trends identified following comparison of 2003 FIM and 2009 FIM updates; and, observations of the AL SFRMP Planning Team from field and working experience. Based on this monitoring evaluation, the Agassiz Lowlands Planning Team developed responses and procedures to guide the three-year extension process. The three-year stand selection process was developed to reflect these monitoring observations and to maintain consistency with the DFFCs and forest management objectives adopted in the original Agassiz Lowlands SFRMP (formally adopted in February 2008).

This Monitoring Report concentrates on those DFFCs for which measurable monitoring information is available and based on that information, suggest a mid-plan correction to remain consistent with the primary DFFCs from the original AL SFRMP.

The primary product of the SFRMP planning process to meet the plan goals and DFFCs was to create a 7-year AL SFRMP stand exam list. The 7-year stand exam list was used to prepare all Area Annual Plans from FY 2004 through FY 2010. The primary monitoring data available is comparisons of past forest conditions with present conditions through evaluation of FIM inventories and information from the Silvicultural and Roads Module (SRM). SRM is software, used by the Department to track plans and actions at the stand level and is critical for monitoring efforts.

Throughout this 7-year implementation period, the Department has been improving methods for recording actions taken on specific stands. However, since these improvements were not in place at the beginning of the AL SFRMP plan implementation period (2004), baseline information and measurements are not complete. Because of this lack of comprehensive baseline information, not all elements of the plan goals and DFFCs can be evaluated at this time. Other limitations of monitoring forest management activities include the very nature of monitoring changes in a forest environment, meaning it takes a significant time for a forest to develop, with results not visible or measurable during the implementation period of the plan.

This AL SFRMP Three-Year Extension Monitoring Report focuses on the goals and DFFCs for which useable information was available from the earlier years of the 7-year plan implementation period and comparing this information with the desired directions identified in the AL SFRMP. The results of these comparisons were then applied to develop the three-year extension stand exam list. For the formal revision to the AL SFRMP (2014-2023), as additional and improved information is incorporated into the forest planning modules (such as SRM and FIM), monitoring reports will be able to more effectively guide management and field activities to reflect the SFRMP goals and DFFCs .

The Agassiz Lowlands CORE group (comprised of Regional staff team members from Forestry, Management Section of Wildlife and Ecological Resources divisions) reviewed monitoring information prepared by the Division of Forestry Central Office and 2009 FIM updates as prepared by each Forestry Area to determine:

- the status of the 7-year stand exam list for each Forestry Area (meaning have Areas exhausted their inventory of stands as identified on the original 7-year list); and,
- Identify any trends discernable from all information compared with the goals and DFFCs as identified in the original AL SFRMP.

Following CORE completion of the draft monitoring report, recommendations were made to the Agassiz Lowlands SFRMP Planning Team concerning adjustments to stand selection criteria and stand selection process to be used to select stands for the three-year extension. One of the key findings of the AL Planning Team was that although additional monitoring evaluations could have been done, enough analysis was completed to show the need to complete new treatment models for specific cover types as identified below.

Monitoring Results

The original AL SFRMP identifies nine primary goals. Within each goal are DFFCs. Those that are measureable are identified below.

1. Forest Products Goals. The DFFCs supporting this goal focused on production of improved and sustainable forest products on DNR managed lands. Monitoring information showed clear progress toward the following DFFC.
 - DFFC 1. Increase the quality and quantity of wood available for harvest from state lands capable of producing timber.
 - Status: Many monitoring strategies identified in the original AL SFRMP Monitoring Plan (Appendix J of the original AL SFRMP) were applied during the 7-year plan implementation period. The ability to *measure harvest and wood quality* has improved with updated Department data recording and reporting procedures. These improvements make possible comparisons of the forest inventory over time. The AL SFRMP three-year extension process benefitted from these improvements by using best available forest inventory information to prepare the Three-Year Stand Exam List.
 - Status: Over the 7-year AL SFRMP implementation period, extensive work was done to maintain, update and improve data entry in the forest inventory (FIM), but more needs to be done. An early step in the Extension process was to update FIM in an effort to work from the best available data base. This updated FIM dataset was then used to prepare the Three-Year Stand Exam Lists.
2. Forest Composition and Wildlife Habitat Goals. The DFFCs supporting this goal focused on increasing various key cover types (such as red pine or upland white cedar), or on improving habitat for key wildlife species. Those key cover types to be increased are further discussed below. Monitoring information for some of these goals was available in the data base and applied during the Three-Year Extension process. Most of the information on affects on wildlife species was field-experience based and not compiled in a measureable format.

Measurable data relating to this DFFC was available by comparing 2003 and the 2008 FIM inventories. This data showed that the planned reduction in aspen/BG acres to conifer dominated cover types is falling short of 2010 target identified in the original AL SFRMP.

To address this, for each Forestry Area, the AL SFRMP Three-Year Extension includes conversion targets out of aspen /balm /birch into priority cover types consistent with the original AL SFRMP. In establishing the conversion targets, the AL Team determined that not all conversion acres, as recommended in the original AL SFRMP, could be addressed within the three-year extension period. Rather, the conversion targets were calculated by starting with 2009 cover type acreage then applied 3/50ths of the 50-year conversion goals as identified in the original AL SFRMP.

- DFFC 1. Increase jack pine by approximately 5,000 acres.
 - Status: In completing the Three-Year Stand Exam List, jack pine is identified as a priority cover type for increase from conversion out of aspen/balm/birch.

- DFFC 2. Increase red pine by approximately 2,000 acres.
 - Status: Progress has been toward meeting the original AL SFRMP red pine conversion goals. Red pine is a priority cover type to be converted to, from aspen /balm/ birch. During the stand selection process, specific stands were labeled for potential red pine conversion. The Three-Year Stand Exam List reflects stands with opportunities for conversions into red pine and thinning.
 - DFFC 3. Increase white pine by approximately 1,000 acres.
 - Status: Monitoring information showed a loss in white pine cover type, while the original AL SFRMP called for an increase. For the Three-Year Extension, specific conversion targets were identified out of aspen/ balm/ birch to help reverse this trend. Further, as stands are site visited, Area field staff will seek additional opportunities for conversions to this cover type over the course of this three-year extension. The AL SFRMP Three-Year Extension recommended that Areas continue white pine treatments consistent with past Annual Plans.
 - DFFC 4. Increase spruce-fir by approximately 3,000 acres.
 - Status: Comparing available FIM inventory data from 2003 to 2008, these cover types decreased in acres. In response, a new treatment model, that included conversion acreage, was prepared and applied to the white spruce and balsam fir cover types. Results from this modeling effort were applied during the stand selection process in order to reverse this trend. During the stand selection process, specific stands were labeled for potential white spruce / balsam fir conversion.
3. Visual Quality Goals. These DFFCs were applied through the *Best Management Practices for Forest Management in Minnesota, Voluntary Site-level Guidelines* and were not measured for purposes of this monitoring process.
 4. Cultural Resource Goals. The cultural resources were protected and managed following the standard *site level guidelines* and were not monitoring during this process.
 5. Age-class Distribution Goals. All available data was analyzed in an effort to identify discernable, measurable trends to provide direction on stand selection methods or adjustments to maintain consistency with the original AL SFRMP DFFCs.
 - DFFC 1. Manage even-aged cover types to achieve a balanced age-class distribution.
 - Status: The average acres on FY05-09 ASELs appeared substantially lower compared to what was included in the original AL SFRMP Seven-Year Stand Exam List. This trend is viewed as primarily a function of inconsistent and not complete data reporting and not necessarily an accurate reflection of total stand treatments. Only one of four Forestry Areas carried over a backlog of stands from the original 7-year stand list. Further it is noted that accelerated harvests were in place during the 7-year plan implementation period.
 - Status: The average volume sold in the Agassiz Lowlands subsections from FY04-FY06 was 30% lower than estimated from the AL SFRMP (183,000 vs. 262,000 cords). The AL SFRMP Three-Year Extension notes that not all stands on the SFRMP Stand Exam Lists or Area Annual Plans result in a timber sale. Of those stands on a stand exam list, about 60% actually result in a timber sale. The remainder is either deferred for future treatment or re-inventoried.

- Status: The average acres on the ASELs compared with the 7-year stand exam list were lower for the Littlefork, Blackduck, and Baudette Areas, Warroad was higher. Some of the Baudette shortfall and Warroad excess may be attributed to changes in Area boundaries during this period. Data from more recent years (FY07-09 ASEL) suggests that, while somewhat improved, Warroad continues to be substantially higher and Baudette substantially lower.
- Status: The average age-class distribution of stands from FY07-FY09 ASEL suggests some possible over or under emphasis in some age-classes for specific cover types, compared to the original AL SFRMP 7-year stand exam list.
- Status: The percent of DNR timberlands beyond normal rotation age is within the range or higher than projected for 2010 for all cover types examined (those managed primarily via even-aged systems).

These trends are identified based on available data as recorded by the Forestry Areas. As stated, recording data and reporting has been an evolving task within the Department. This Monitoring Report has observed these trends based on the available data but recognizes the shortcomings of the past Department data management process. Although these trends are noted, in many instances they are the result of past less than complete and evolving data management procedures. An example of the evolving data management practices; one Forestry Area did not include High Risk Low Volume stands with a Site-Visit prescription on their Annual Stand Exam Lists, skewing the monitoring analysis.

Although discrepancies in data management were found over the years, the 2009 FIM data showed significant consistency with the original AL SFRMP planned age class distributions goals.

Correction and normalization of all past data entry and management practices is beyond the scope of this monitoring effort. To address the deviations from the stated DFFC of balancing age-class distributions that may, in fact, have actually occurred, the AL SFRMP Three-Year Extension has included the following specific actions:

1. new treatment models were prepared and applied to the updated FIM data set for the following even-aged managed cover types:
 - aspen /balm/ birch
 - tamarack
 - jack pine
 - black spruce lowland
 - a new treatment model added for white spruce / balsam fir.

The modeling results were then applied during the stand selection process resulting in the Three-Year Stand Exam List. Applying these models to the updated FIM dataset will help direct harvest towards a more balanced age class distribution.

2. Consistent reporting procedures, definitions and data management practices were re-emphasized as the Forestry Areas prepared the Three-Year Stand Exam Lists.
3. Following approval of the AL SFRMP Three-Year Extension, further recommendations will be distributed to the Areas outlining and encouraging the use of consistent reporting, definitions and data recording practices, all aimed at improving the ability to consistently monitor forest management practices in future years.

6. **Rare Species and Critical Habitat Goals.** Information relative to these species and habitats was not readily available through much of the 7-year AL SFRMP implementation period. However, with improved information and reporting procedures, recent years have seen significant improvements in the ability to address this set of DFFCs. Through application of the Forest Coordination Framework and use of rare species and critical habitat information, most strategies in each of the DFFCs under this SFRMP goal have been applied in the last few years. The AL SFRMP Three-Year Extension recommends, however, that Ecologically Important Lowland Conifers (EILC) did merit further analysis.
 - **DFFC 2. Identify and conserve critical habitats.**
 - **Status:** The AL SFRMP Extension Planning Team noted that the tagged EILC accounted for less than the target of 4% to 8% as identified in the original AL SFRMP. To address this, the AL SFRMP Extension applies the EILC criteria (as outlined in the original plan) to the updated FIM dataset and tagged additional acres to account for a total of 6.7% of the lowland conifer cover types. These stands were then withdrawn from the potential management pool from which the Three-Year Stand Exam Lists were selected.
7. **Patch Goals.** The AL SFRMP Three-Year Extension did not evaluate patch size and distribution for this monitoring effort. Although not specifically measured in monitoring information, patch management was communicated by the AL Planning Team and was actively applied as the Areas prepared the Three-Year Stand Exam Lists.
8. **Within-stand Composition Goals.** Many of the strategies within this DFFC have been applied, during the 7-year SFRMP implementation period with progress made to maintain or improve diversity of plant species and forest structure. Much of this progress is measureable, but was not addressed in this monitoring effort. As of FY 2008 SRM Management Objectives are used as a primary field reporting tool. This AL SFRMP monitoring effort had the benefit of only one year of SRM reporting, making more comprehensive monitoring difficult.
9. **Tree Health Goals.** Many of the strategies within this DFFC are difficult to address or measure over the relatively short time frame (seven years). New programs, data collection techniques, and reporting guidelines have been developed over the course of this 7-year plan implementation period. Because tree health is measured over the longer term, the AL SFRMP Extension does not address this DFFC in a quantitative way for purposes of completing the three-year extension.

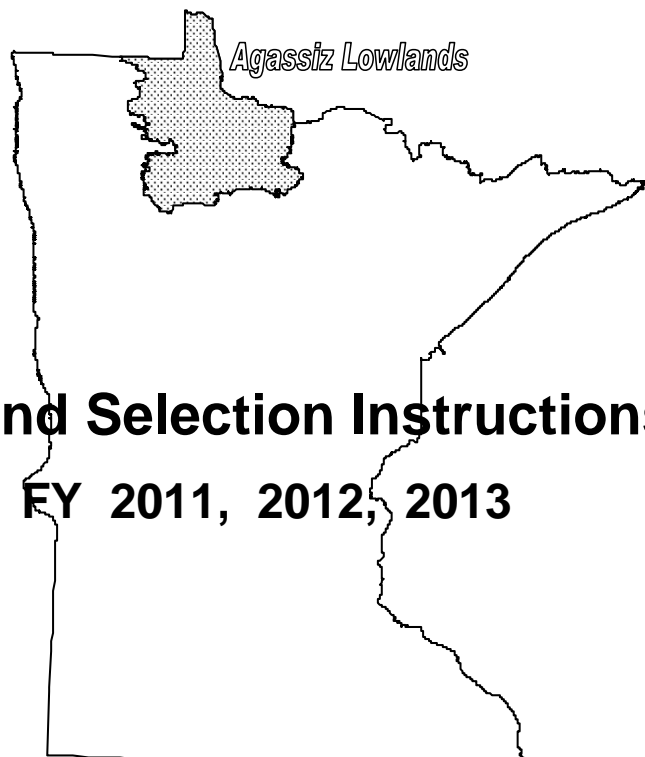
The AL SFRMP Three-Year Extension identifies additional concerns that did not fit any of the original AL SFRMP goals or DFFCs. These concerns are:

1. A back-log of stands from the original 7-year list was noted.
 - In response, the AL SFRMP Three-Year Extension removes these stands from the management pool for the purposes of preparing the Three-Year Stand Exam List. These stands were then scheduled for site visits in the early years of this three-year extension, with most of them to be site visited in FY 2011; and,
2. Data management systems used by the Department including site visits, definitions, and data entry into SRM was noted as requiring further evaluation. The monitoring information supplied by Central Office noted several observations comparing planned AL SFRMP directions with the current conditions on the ground. Several of these observations can be verified and are reflected above, however, several of the observations result from inconsistent definitions, processes, data management procedures and reporting practices used among the Forestry Areas. In many instances, although the monitoring information suggested a deviation from the original AL SFRMP, the deviation was in fact due to inconsistent terms, data management practices and procedures among the Forestry Areas,

- In response, the AL SFRMP Three-Year Extension re-emphasizes the primary definitions related to preliminary prescriptions and management objective coding in SRM in the three-year extension Stand Selection Instructions. Following approval of the Final AL SFRMP Extension a more formal message will be delivered further emphasizing the importance of all Areas using terms, data management and reporting consistently.

The revised Agassiz Lowlands SFRMP (FY2014 – 2023), likely to be started in 2010 will follow the monitoring protocols defined in the *Monitoring of Subsection Forest Resource Management Plans* document, dated September 2006. The Department's SFRMP monitoring program recommends improvements to the monitoring structure to evaluate implementation SFRMP goals and DFFCs. The revised AL SFRMP (FY 2014 – 2023) will incorporate and implement this updated monitoring program.

**Agassiz Lowlands
Subsection Forest Resource Management Plan
Three-Year Extension
To the AL SFRMP adopted February 2008**



**Stand Selection Instructions
FY 2011, 2012, 2013**



August 2009

**Agassiz Lowlands SFRMP
Three-Year Stand Exam Lists
(FY 2011, 2012, 2013)
Stand Selection Instructions**

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Agassiz Lowlands SFRMP

Three-Year Extension Stand Selection Instructions

The Agassiz Lowlands SFRMP Extension Team has developed the following instructions for Area staff reference while completing the Three-Year Extension Stand Exam List and New Access Needs List process for state timberlands.

The goal is to complete the Three-Year Extension within several days of starting the project. The project can be completed in 4 steps:

1. Select stands for the Three-Year Extension Stand Exam List Planning period,
Include:
 - *Preliminary Prescriptions*
 - *Preliminary Management Objectives*
 - assign a *Site Visit Year* (FY 2011, 2012 or 2013)
 - *Joint Site Visit* and
 - *Comments* as appropriate
2. Conduct a final review of the Three-Year Extension Stand Exam List.
3. Complete the New Access Needs List portion of the project.
4. Submit completed Three-Year Extension Stand Exam List and New Access Needs List project to Chris Scharenbroich.

I. BACKGROUND:

1. A Three-Year Extension to the original AL 7-year Stand Exam List is necessary at this time. Completing 3 years will bring the AL SFMRP into a ten year cycle (FY 2004 through FY 2013) and allow for a transition to completing the second generation of Agassiz Lowlands SFRMP (FY 2014 through 2023).
2. This Three-Year Extension is viewed as continuing the overall policies, goals, DFFCs and directions of the AL SFRMP, formally adopted in 2008. For even aged managed cover types the AL Extension Team has made adjustments to the treatment levels based the FIM updates provided by Forestry Areas. For all Other Cover Types the AL Extension Team recommends that the treatment levels as identified in the original AL SFRMP be continued.

Keep in mind that over recent years Areas have implemented accelerated harvests in jack pine and aspen/balm/birch. These past accelerated harvest levels cannot be maintained for the Three-Year extension period.
3. Appropriate Forestry Area staff, Area Wildlife staff, Fisheries staff and Ecological Resources staff have been invited to attend the Forestry Area Three-Year Extension Stand Selection Meetings.
4. Forestry Area Supervisors will need to coordinate Three-Year Extension Stand Selection meeting dates with other Divisions (Wildlife, Fisheries and Ecological Services). Staff from these Divisions may or may not choose to attend but they need to be invited. An AL SFRMP Extension Team member will attend the Stand Selection Meetings in each Area to answer questions and provide guidance as much as possible. An Orientation Session outlining the stand selection process will occur the first day of each Area's Stand Selection process.

Identified below are suggested / target start dates for the first meeting for Stand Selection in all Forestry Areas.

- Warroad August 3, 2009
- Baudette August 6, 2009
- Littlefork August 12, 2009
- Blackduck August 18, 2009

5. The AL Extension Team has developed this set of *Instructions* and *Attachments* to aid the Area Teams in carrying out the Three-Year Extension. Stand Selection Instructions will be sent in advance of the meetings to:
- Forestry Area Supervisors
 - Area Wildlife Managers and Assistant Managers
 - Ecological Resources staff

Review of the Stand Selection Instructions in preparation for the Stand Selection meetings would be helpful.

Hardcopies are provided to those attending the Stand Selection meetings. See the list of *Attachments* for all information to be supplied by the AL Extension Team. The more critical and significant steps and *Attachments* are described in these Instructions.

6. A dedicated computer and ArcView / GIS Operator have been identified to assist each Area during stand selection. This individual will run the programs, respond to your queries and generally keep track of the stand selection progress. An *ArcView Project* has been developed to show spatial information helpful to stand selection. A *Timber Planning Extension* is included in the *AL SFRMP Extension Dataset* to serve as a method of keeping track of stands selected by the Area Teams (See *Attachment B*).

It is requested that each Forestry Area identify a Team "Leader" to keep the process moving and a Team "Recorder" to keep track of any unique notes, comments and decisions made by the Stand Selection Teams not adequately accounted for in the comments section of the *Timber Planning Extension*.

7. To assist in moving the Three-Year Extension Stand Selection along, Areas are provided with the following cover type selection targets which are a critical component of the AL Three-Year Extension plan:

Attachment D-1 identifies Even Aged Management "target acres" recommended by the AL Extension Team consistent with the stand selection criteria and harvest levels from the original adopted AL SFRMP and applied to the FIM updates completed by each Forestry Area.

Attachment D-2 is a *Worksheet* designed as a fill-in-the-blanks tool for "Other Cover Types".

Attachment D-3 identifies Conversion Goals by Forestry Area out of aspen/balm/birch. Also shown are conversions into specific cover types for the AL subsection as a whole to show those cover types planned to increase over time.

These three *Attachments* provide the targets and treatment levels to be achieved by cover type for each Forestry Area.

8. In addition to the Three-Year Extension of Stands, each Area Stand Selection Team will also determine *New Access Needs* for the Three-Year Extension List. Layers of forest access have been included in the stand selection *ArcView Project*. The intent is to establish the Three-Year extension list and determine *New Access Needs* for any stand identified on the list.

II. PROCESS: SELECT STANDS FOR THE Three-Year EXTENSION PLANNING PERIOD

Overall Task:

Using the resources provided by the AL Extension Team (See all *Attachments*) and Area Forestry, Wildlife and Fisheries and Ecological Resources knowledge, background and experience, select the Three-Year Stand Exam Extension List for your Area.

1. The Stand Selection Teams should use the following as targets during stand selection:
 - a. Even Age Class Targets by Cover Type and Forestry Area (*Attachment D-1*). These targets by cover type by age class by Forestry Area result from updated treatment models applied to the updated FIM.
 - b. For Other Cover Types a *Worksheet* is provided to assist with selecting stands for the 3-year extension. (*Attachment D-2*)

Because this is an extension of the 7-year AL SFRMP, the AL Extension Team recommends that for Other Cover Types Forestry Areas “extend” or continue treatment levels recommended in the original AL SFRMP (adopted Feb. 2008), however not at levels which reflect recent accelerated harvests in jack pine and aspen/balm/birch.

- For these Other Cover Types no treatment level targets have been established for Forestry Areas (except for red pine thinnings). Because this is an extension of the existing AL SFRMP, Forestry Areas are requested to select acres for Other Cover Types consistent with your past annual treatment levels, but again...not at accelerated harvest levels.
- The AL Extension Team suggests that all Forestry Areas review your recent annual treatment levels for these cover types to identify your Area’s past treatment levels. These treatment levels will then be your Area’s annual targets over the Three-Year extension.
- Further, give thought to pre-selecting specific stands based on any Area plans or strategies you are trying to implement.

Bottom line: For Other Cover Types, the intent is to continue your past level of work, but not at accelerated harvest levels.

The AL Extension Team recommends the following factors be used in identifying stands for these “Other Cover Types”:

- all past efforts. Use all local Forestry Area records in establishing your Area’s past efforts in these cover types (however not at accelerated harvest levels);
- Local markets;
- Coordination / site visit / treatment of these stands with even aged managed cover types;
- Direction provided by the DOF to identify appropriate stands and acres for thinning;
- Input from other Divisions.

The AL Extension Team recognizes these “Other Cover Types” are relatively minor but should not be dismissed as potential treatment acres.

Areas should make effort to identify these stands and include them on the Three-Year Extension List consistent with past treatment levels for these cover types.

The AL Extension Team recognizes that these Other Cover Type acres quite often are included on Annual Plan Additions, but adding these acres through the Three-Year Extension Stand Exam List or on the Annual Stand Exam List is preferred.

c. Conversion Goals by Cover Type by Forestry Area (*Attachment D-3*)

Attachment D-3 identifies conversions out of aspen/balm/birch by Forestry Area and serves as rough goals to achieve conversions. Also listed are subsection level goals for conversions into specific cover types.

2. The AL Extension Team developed a *Stand Scoring System (Attachment E)* that assigns scores to stands meeting specific stand management directions consistent with the adopted AL SFRMP. The AL Extension Team suggests that those stands receiving higher scores should receive more consideration by the Areas and should be included on the Three-Year Extension Lists unless there are identified reasons not to. Team Recorder: Please record those reasons as Comments. All stand scores have been entered into the *AL SFRMP Extension Dataset* and labeled in the *ArcView Project*. Areas can "batch select" all stands with higher scores as a starting point for stand selection, if you choose, but a stand by stand review should still be performed.

Separate scoring systems were developed for:

- a. Even-aged management; and,
- b. Conversion acres.

Stands have been tagged (as a pool of stands) that meet the even-aged management and stand conversion selection criteria.

3. In completing the Three-Year Extension List, Areas should consider the scores assigned together with a stand by stand evaluation of stand age to select stands and assign:
 - a. *Preliminary Prescriptions*,
 - b. *Management Objectives* where appropriate,
 - c. *Stand Exam Year (FY 2011, 2012, 2013)*,
 - d. *Joint Site Visit*, and
 - e. stand specific *Comments* appropriate

to meet GDSs, Strategies and DFFCs identified in the *AL SFRMP* and the *Field Guide (Attachment F)*.

4. If the Area Stand Selection Teams know of stands that are not in the pool but are in need of treatment, these should be discussed during the stand selection process and may be selected, provided all Divisions reach agreement (i.e. stands with I&D problems).
5. Consult the SMA ArcView layer and take SMAs into consideration as stand selection is implemented. Note that the SMA layer supplied should be supplemented by all local, Area knowledge and experience with SMAs. Do not consider the supplied layer as the only SMA information that should be considered. Corrections to boundaries of SMAs can be discussed and noted during the process to facilitate stand selection. Identification of SMA boundaries or corrections should be noted by the Team Recorder and submitted to Chris Scharenbroich. The AL Extension Team defers to local knowledge when considering specific SMA boundaries.
6. If the Areas note inconsistencies or inaccuracies in the AL SFRMP Extension Dataset or ArcView Project, please note and record any database corrections.
7. *A GIS Operator has been assigned by the Forestry Area Supervisor to run the AL SFRMP Extension Dataset, the Timber Planning Extension and the ArcView Project.*

8. It is requested that a Team Recorder be assigned to keep track of notes and comments which cannot easily be entered into the Stand Selection dataset;
 - a. document why stands (from what may appear to be obvious stands) are not placed on the 3-Year list;
 - b. record significant, broad issues which affect the Area's stand selection discussions; and,
 - c. record stand selection discussions which affect the Area's stand selection discussions; and,
 - d. If Stand Selection Teams deviate significantly from Area targets or highly scored stands, record reasons why the deviation is necessary.
9. It is recommended that the Stand Selection Teams proceed in the following order to complete the overall Three-Year Extension Stand Exam Lists:
 - a. address potential Conversion Acres first; followed by
 - b. even-aged acre targets; followed by,
 - c. all Other Cover Type Acres (including thinning acres). Again, no targets have been established for this Three-Year Extension. Areas are to select these acres based on all known past efforts (however, not at accelerated harvest levels), preferred silvicultural practices, markets, DOF directives and interdisciplinary review.
10. Stand Selection Teams must enter appropriate Codes into the required Fields as listed below. Each Team will need to determine if Codes should be entered into these Fields as stands or as groups of stands as selected or if the needed data can be entered more efficiently after the entire stand selection process is completed.
 - a. PRESCRIP Field: Assign only a general Preliminary Prescription to all stands selected for the 3--year Extension List. Preliminary Prescription choices come from the list of options in the Timber Planning Extension (See Attachment G):
 - When determining a Preliminary Prescription, be sure to consider the Preliminary Management Objectives, if any have been assigned.
 - Consider previous decisions concerning stand management relating to SMAs, Brushland SMZs, OFMCs if designated and Old Forest SMZs. Bottom line: consider any identified, accepted management plan affecting specific stands.
 - b. OBJECTIVE Field: Assigning a Preliminary Management Objective is not required but can be assigned provided there is agreement among all Divisions. Assign a Preliminary Management Objective Code(s) to all stands selected in MCBS Sites ranked outstanding, high or high prime that do not have a code assigned to it already. (See Attachment H).
Also in Attachment H, please review Guidance for Coding Management Objectives in SRM.
 - c. JT VISIT Field: The Joint On-site Visit field should be filled in during stand selection, if the Division representative has enough information at the time to suggest that a joint visit will be necessary. Otherwise, this Field will be filled in during annual plan review.

FSH = All stands on Fisheries lands will receive a site visit designation of FSH. Other stands Fisheries staff wants to on-site visit will be tagged during the Three-Year Extension selection or at annual reviews.

ECO = Ecological Resources staff will tag stands with ECO when they want to do a joint site visit, either during the Three-Year Extension selection process or at annual review of stands.

WLD = Wildlife staff will tag stands with WLD when they want to do a joint site visit on that site.

11. Periodically during the Stand Selection Meetings and at the end of each day create a backup of:
 - a. the Stand Exam List and
 - b. any comments, notes or observations recorded by the Team Recorder.

III. ASSIGN an On-site VISIT YEAR FOR FY 2011, 2012 or 2013

In the SE_YEAR Field, enter the appropriate site visit year as 2011, 2012 or 2013. Consider stands that may be part of a group of stands that should be examined sequentially.

IV. FINAL REVIEW OF THE 3- YEAR STAND EXAM LIST /ON-SITE VISIT PORTION OF THE PROJECT

Ensure that each stand selected has all required Fields completed:

- Preliminary Prescription Code
- Preliminary Management Code
- SE Years assigned
- Joint Site Visit
- Comments

For any stand tagged for potential conversion, code a management conversion objective. This will automatically change the Cover Type Management Code to reflect the conversion.

Check to ensure that each stand selected in an MCBS outstanding or high Site (if any have been identified) has a Preliminary Management Objective assigned to it and that the Preliminary Management Objective and the preliminary prescription code assigned are consistent with each other.

V. COMPLETE THE NEW ACCESS NEEDS PLAN PORTION OF PROJECT

The *New Access Needs* will be completed concurrently with the -Three-Year Extension Lists or as a separate process, following selection of the 3 year Extension Lists. The Area Stand Selection Teams must determine which method is most efficient. See *Attachment I* for instructions on how to proceed with completing the *New Access Needs* List task.

After having completed the *New Access Needs* list, check to see if any isolated stands have been selected that might likely not be treated over the next 3 years due to access issues. If any such stands have been selected it may be advantageous to select different stands that will most likely be treated. Coordinate changes with other Divisions.

VI. SEND THE FOLLOWING TO CHRIS SCHARENBRICH:

- a. Final Three-Year Stand Exam List
- b. Comments, notes and observations recorded by Team Recorder
- c. New Access Need Project

Appendix E Glossary

This glossary contains commonly accepted definitions for words used in forestry and natural resource management. Several that apply to sensitive topics were expressly referenced in the report. Recommended changes, deletions, or additions to terms are not listed.

Acre: An area of land containing 43,560 square feet, roughly the size of a football field, or a square that is 208 feet on a side. A “forty” of land contains 40 acres and a “section” of land contains 640 acres.

Age class: An interval, commonly 10 years, into which the age range of trees or forest stands is divided for classification or use.

Age-class distribution: The proportionate amount of various age classes of a forest or forest cover type within a defined geographic area (e.g., ecological classification system subsection).

All aged: An uneven-aged stand that represents all ages or age classes from seedlings to mature trees.

Annual stand examination list: A list of stands to be considered for treatment in a particular year that was selected from the SFRMP stand examination list. Treatment may include harvest, thinning, regeneration, prescribed burning, re-inventory, etc.

Annual work plan: The annual work responsibilities at the area (i.e., Division of Forestry administrative boundary) documented for the fiscal year.

Artificial regeneration: Renewal of a forest stand by planting seedlings or sowing seeds.

Assessment: A compilation of information about the trends and conditions related to natural and socio-economic resources and factors. The initial round of SFRMPs will focus primarily on trends and conditions of forest resources. Standard core assessment information sources and products have been defined.

Basal area: The cross-sectional area of a tree taken at the base of the tree (i.e., measured at 4.5 feet above the ground). Basal area is often used to measure and describe the density of trees within a geographic area using an estimate of the sum of the basal area of all trees cross-sectional expressed per unit of land area (e.g., basal area per acre).

Biodiversity (biological diversity): The variety and abundance of species, their genetic composition, and the communities and landscapes in which they occur, including the ecological structures, functions, and processes occurring at all of these levels.

Board foot: A unit of measuring wood. A board foot is commonly used to measure and express the amount of wood in a tree, sawlog, veneer log, or individual piece of lumber. For example, a 16-inch diameter at breast height (DBH) standing tree that is 80 feet tall contains approximately 250 board feet of wood and a tree with a 30-inch DBH and 80 feet tall contains about 1000 board feet or one MBF. A piece of lumber (1 foot x 1 foot x 1 inch) contains one board foot of lumber.

Clear-cut: The removal of all or most trees during harvest to permit the re-establishment of an even-aged forest. A harvest method used to regenerate shade-intolerant species, such as aspen and jack pine.

Clear-cut with reserves: Same as clear-cut, but leave trees in clumps, strips, or islands occupy a minimum of 5% of the clear-cut harvest unit, or greater than 5 leave trees per acre are left scattered throughout the site.

Coarse filter: The management of lands from a local to landscape scale that addresses the needs of all or most species, communities, environments, and ecological processes. In using a coarse-filter approach (Hunter, 1990), it assumes that a broad range of habitats encompassing the needs of most species will be met, and their populations will remain viable on the landscape.

Competition: The struggle between trees to obtain sunlight, nutrients, water, and growing space. Every part of the tree, from the roots to the crown, competes for space and food.

Connectivity: An element of spatial patterning where patches of vegetation such as, forest types, native plant communities or wildlife habitats are connected to allow the flow of organisms and processes between them.

Conversion: A change through forest management from one tree species to another within a forest stand or site.

Cooperative stand assessment (CSA): The forest stand mapping and information system used by the Minnesota Department of Natural Resources to inventory the approximately five million acres (7,800 square miles) owned and administered by the state. The spatial information and stand attributes are now maintained in the Forest Inventory Module (FIM).

Cord: A pile of wood four feet high, four feet wide, and eight feet long, measuring 128 cubic feet, including bark and air space. Actual volume of solid wood may vary from 60 to 100 cubic feet, depending on size of individual pieces and how tight the wood is stacked. In the lake states, pulpwood cords are usually four feet x four feet x 100 feet and contain 133 cubic feet. Pulpwood volume of standing trees is estimated in cords. For example, a 10-inch DBH tree, which is 70 feet tall, is about 0.20 cords; or five trees of this size would equal one cord of wood.

Corridor: A defined tract of land connecting two or more areas of similar habitat type through which wildlife species can travel.

Cover type: Expressed as the tree species having the greatest presence (i.e., in terms of volume for older stands or number of trees for younger stands) in a forest stand. A stand where the major species is aspen would be called an aspen cover type.

Cover-type distribution: The location and/or proportionate representation of cover types in a forest or a given geographic area.

Critical habitat: Habitat or habitat elements that must be present and properly functioning to assure the continued existence of the species in question.

Crop tree: Any tree selected or retained to be a component of a future commercial harvest.

Cruise: (v) A survey of forest land to locate timber and estimate its quantity by species, products, size, quality, or other characteristics. (n) An estimate derived from such a survey.

Cubic foot: A wood volume measurement containing 1,728 cubic inches, such as a piece of wood measuring one foot on a side. A cubic foot of wood contains approximately six to 10 usable board feet of wood. A cord of wood equals 128 cubic feet.

Desired future forest composition (DFFC): Broad vision of landscape vegetation conditions in the long-term future. For the purposes of the initial round of subsection planning, DFFCs will focus on future desired forest composition looking ahead 50 years. DFFCs may include aspects like 1) the amount of various forest cover types within the subsection, 2) age-class distribution of forest cover types, 3) the geographic distribution of these across the subsection and the related level of management for even-aged forest, 4) extended rotation forest, etc.

Disturbance: Any event, either natural or human induced, that alters the structure, composition, or functions of an ecosystem. Examples include forest fires, insect infestation, windstorms, and timber harvesting.

Disturbance regime: Natural or human-caused pattern of periodic disturbances such as fire, wind, insect infestations, or timber harvest.

Dominant trees: Trees that are in the upper layer of the forest canopy, larger than the average trees in the stand.

Early successional forest: The forest community that develops immediately following a removal or destruction of vegetation in an area. Plant succession is the progression of plants from bare ground (e.g., after a forest fire or timber harvest) to mature forest consisting primarily of long-lived species such as sugar maple and white pine. Succession consists of a gradual change of plant and animal communities over time. Early succession forests commonly depend on and develop first following disturbance events (e.g., fire, windstorms, or timber harvest). Examples of *early successional forest* tree species are aspen, paper birch, and jack pine. Each stage of succession provides different benefits for a variety of species.

Ecological classification system (ECS): A method to identify, describe, and map units of land with different capabilities to support natural resources. This is done by integrating climatic, geologic, hydrologic, topographic, soil, and vegetation data. (See Appendix A.)

Ecological integrity: The degree, in general, to which the elements of biodiversity and the processes that link them together and sustain the entire system are complete and capable of performing desired functions. Exact definitions of integrity are relative and may differ depending on the type of ecosystem being described.

Ecologically important lowland conifers (EILC): Stands of black spruce, tamarack, and cedar, including stagnant lowland conifer stands, that are examples of high-quality native plant communities (NPC) representative of lowland conifer NPCs found in the subsections. The designated EILC stands will be reserved from treatment during this 10-year planning period. Future management/designation of these stands is yet to be determined.

Element occurrence (EO): An area of land and/or water where a rare feature (plant, animal, natural community, geologic feature, animal aggregation) is, or was present. An Element Occurrence Rank provides a succinct assessment of estimated viability or probability of persistence (based on condition, size, and landscape context) of occurrences of a given element. An *Element Occurrence Record* is the locational and supporting data associated with a particular *Element Occurrence*. *Element Occurrence Records* for the state of Minnesota are managed as part of the rare features database by the Natural Heritage and Nongame Research Program. (*Draft definition 3/24/2004, adapted from Biotics EO Standards: Chapter 2*)

Endangered species: A plant or animal species that is threatened with extinction throughout all or a significant portion of its range in Minnesota.

Even-aged: A forest stand composed of trees of primarily the same age or age class. A stand is considered even-aged if the difference in age between the youngest and oldest trees does not exceed 20 percent of the rotation age (e.g., for a stand with a rotation age of 50 years, the difference in age between the youngest and oldest trees should be 10 years).

Evenflow: Providing a relatively consistent amount of timber (or other products) in successive management periods.

Exotic species: Any species, including its seeds, eggs, spores, or other biological material capable of propagating the species, which is not native to that ecosystem, and whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Extended rotation forests (ERF): Forest stands for which the harvest age is extended beyond the normal or economic harvest age. ERF provides larger trees, old-forest wildlife habitat, and other nontimber values. Additional detail regarding management of ERF on DNR-administered lands is contained in the DNR Extended Rotation Forest Guidelines (1994). Prescribed ERF is the cover-type acreage designated for management as ERF. Stands designated as ERF will be held beyond the recommended normal rotation (harvest) age out to the established ERF rotation age(s). A stand of any age can be prescribed as ERF. Effective ERF is defined as the portion of the prescribed ERF acreage that is actually over the normal rotation age for the cover type at any one time.

Extirpated: The species is no longer found in this portion of its historical range.

Fine filter: Management that focuses on the welfare of a single or only a few species rather than the broader habitat or ecosystem. For example, individual nests, colonies, and habitats are emphasized. A *fine filter* approach (Hunter, 1990) considers the specific habitat needs of selected individual species that may not be met by the broader coarse-filter approach.

Forest inventory and analysis (FIA): A statewide forest survey of timber lands jointly conducted by the Minnesota Department of Natural Resources and the USFS that periodically, through a system of permanent plots, assesses the current status of, and monitors recent trends in, forest area, volume, growth, and removals.

Forest Inventory Module (FIM): The FIM provides a database and application through which field foresters can maintain an integrated and centralized inventory of the forests on publicly owned lands managed by the Division of Forestry and other divisions. In the field, foresters collect raw plot and tree data. Those data are summarized in stand-level data that are linked to a spatial representation of stand boundaries. Part of the DNR's FORestry Information SysTem (FORIST).

Forest land: Consists of all lands included in the forest inventory from aspen and pine cover types to stagnant conifers, muskeg, lowland brush, and lakes.

Forest management: The practical application of biological, physical, quantitative, managerial, economic, social, and policy principles to the regeneration, management, utilization, and conservation of forests to meet specified goals and objectives while maintaining the productivity of the forest. Forest management includes management for aesthetics, fish, recreation, urban values, water, wilderness, wildlife, wood products, and other forest resource values.

Forest road: A temporary or permanent road connecting the remote parts of the forest to existing public roads. Forest roads provide access to public land for timber management, fish and wildlife habitat improvement, fire control, and a variety of recreational activities. The Division of Forestry has three classifications for roads and access routes:

System roads - The major roads in the forest that provide forest management and recreational access and may be connected to the state, county, or township public road systems. These roads are used at least on a weekly basis and often used on a daily basis. The roads should be graveled and maintained to allow travel by highway vehicles, and road bonding money can be used to fund construction and reconstruction of these types of roads. The level and frequency of maintenance will be at the discretion of the area forester and as budgets allow.

Minimum maintenance roads - Roads used for forest management access on an intermittent, as-needed basis. Recreational users may use them, but the roads are not promoted or maintained for recreation. The roads will be open to all motorized vehicles but not maintained to the level where low clearance licensed highway vehicles can travel routinely on them. The roads will be graded and graveled as needed for forest management purposes. Major damage such as culvert washouts or other conditions that may pose a safety hazard to the public will be repaired as reported and budgets allow.

Temporary access – An access route not fitting one of the first two definitions is considered temporary. A temporary access route has to be abandoned and the site reclaimed so that evidence of a travel route is minimized. The level of effort to effectively abandon temporary accesses will vary from site to site depending on location of the access (e.g., swamp/winter vs. upland route), remoteness, and existing recreational use pressures.

Forest stand: A group of trees occupying a given area and sufficiently uniform in species composition, age, structure, site quality, and condition so as to be distinguishable from the forest on adjoining areas.

FORIST: The FORestry Information SysTem (FORIST) is a collection of integrated spatial applications and datasets supporting day-to-day operations across the Division of Forestry. The first two parts of the system are in operation: Forest Inventory Module (FIM) and Silviculture and Roads Module (SRM). A Timber Sales Module is scheduled to be operational in 2006.

Fragmentation: Breaking up of large and contiguous ecosystems into patches separated from each other by different ecosystem types. Breaking up a contiguous or homogeneous natural habitat through conversion to different vegetation types, age classes, or uses. *Forest fragmentation* occurs in landscapes with distinct contrasts between land uses, such as between wood lots and farms. *Habitat fragmentation* occurs where a contiguous or homogeneous forest area of a similar cover type and age is broken up into smaller dissimilar units. For example, a conifer-dominated forest (or portion of it) is fragmented by clear-cutting if it is converted to another type, such as an aspen-dominated forest.

Fullystocked stand: A forest stand in which all growing space is effectively occupied but having ample space for development of the crop trees.

Game species: In this plan, *game* species include those terrestrial species that are hunted and trapped.

Gap: The space occurring in forest stands due to individual tree or groups of trees mortality or blowdown. *Gap management* uses timber harvest methods to emulate this type of forest spatial pattern.

Growth stage: Growth stages of native plant communities as presented in the Field Guide to the Native Plant Communities of Minnesota: The Laurentian Mixed Forest Province are periods of stand maturation where the mixture of trees in the canopy is stable. Growth stages are separated by periods of transition where tree

mortality is high and different among the species, usually involving the death of early successional species and replacement by shade-tolerant species or longer lived species.

Geographic information system (GIS): Computer software used to manipulate, analyze, and visually display inventory and other data and prepare maps of the same data.

Group selection: A process of harvesting patches of selected trees to create openings in the forest canopy and to encourage reproduction of uneven-aged stands.

Habitat: An area in which a specific plant or animal normally lives, grows, and reproduces; the area that provides a plant or animal with adequate food, water, shelter, and living space.

High risk low volume (HRLV): Stands identified based on one or more of the following: 1) stands coded as high risk in CSA forest inventory, 2) significant insect or disease damage to the main species in the stand, 3) stands over normal rotation age at time of survey with total stand volume eight cords per acre (low volume), 4) or very old stand, e.g., aspen over 80 years old.

High-quality native plant community: A community that has experienced relatively little human disturbance, has few exotic species, and supports the appropriate mix of native plant species for the community. A high-quality native plant community may be unique or have a limited occurrence in the subsection, have a known association with rare species, or an exemplary representative of the native plant community diversity prior to European settlement.

Intermediate cut: The removal of immature trees from the forest sometime between establishment and major harvest with the primary objective of improving the quality of the remaining forest stand.

Landform: Any physical, recognizable form or feature of the earth's surface having a characteristic shape and produced by natural causes. Examples of major landforms are plains, plateaus, and mountains. Examples of minor landforms are hills, valleys, slopes, eskers, and dunes. Together, landforms make up the surface configuration of the earth. The "landform" concept involves both empirical description of a terrain (land-surface form) class and interpretation of genetic factors ("natural causes").

Landscape: A general term referring to geographic areas that are usually based on some sort of natural feature or combination of natural features. They can range in scale from very large to very small. Examples include watersheds (from large to small), the many levels of the Ecological Classification System (ECS), and Minnesota Forest Resources Council (MFRC) regional landscapes. The issue being addressed usually defines the type and size of landscape to be used.

Landscape region: A geographic region that is defined by similar landforms, soils, climatic factors, and potential native vegetation. The landscape region used for this planning effort is the subsection level of the Ecological Classification System.

Leave trees: Live trees selected to remain on a site to provide present and future benefits, such as shelter, resting sites, cavities, perches, nest sites, foraging sites, mast, and coarse woody debris.

Legacy patch: An area within a harvest unit that is excluded from harvest; this area is representative of the site and is to maintain a source area for recolonization, gene pool maintenance, and establishment of microhabitats for organisms that can persist in small patches of mature forest.

Managed acres: Timberland acres that are available for timber management purposes.

Management pool: In this plan, the acres available for timber management purposes.

Mast: Nuts, seeds, catkins, flower buds, and fruits of woody plants that provide food for wildlife.

Marketable timber: Merchantable timber that is accessible now.

Mature tree: A tree that has reached the desired size or age for its intended use. Size or age will vary considerably depending on the species and the intended use.

Merchantable timber: Trees or stands having the size, quality, and condition suitable for marketing under a given economic condition, even if not immediately accessible for logging.

Mesic: Moderately moist.

Mixed forest or stand: A forest or stand composed of two or more prominent species.

Mixed forest conditions: In this plan, refers to vegetative composition and structure moving toward the mix and relative proportion (e.g., dominated by, common, occasional, or scattered) of species found in the native plant community for that site. Tree species mix and proportion depends not only on the targeted growth stage (based on the rotation age for the desired cover type) but also species found in older growth stages.

Mortality: Death or destruction of forest trees as a result of competition, disease, insect damage, drought, wind, fire, or other factors.

Multi-aged stand: A stand with two or more age classes.

Multiple use: Using and managing a forested area to provide more than one benefit simultaneously. Common uses may include wildlife, timber, recreation, and water.

Native plant community (NPC): A group of native plants that interact with each other and with their environment in ways not greatly altered by modern human activity or by introduced organisms. These groups of native plants form recognizable units, such as an oak forest, prairie, or marsh, that tend to reoccur over space and time. Native plant communities are classified and described by physiognomy, hydrology, landforms, soils, and natural disturbance regimes (e.g., wildfires, windstorms, normal flood cycles).

Natural disturbances: Disruption of existing conditions by natural events such as wildfires, windstorms, drought, flooding, insects, and disease. May range in scale from one tree to thousands of acres.

Natural regeneration: The growth of new trees from one of the following ways: (a) from seeds naturally dropped from trees or carried by wind or animals, (b) from seeds stored on the forest floor, or (c) from stumps that sprout or roots that sucker.

Natural spatial patterns: Refers to the size, shape, and arrangement of patches in forested landscapes as determined primarily by natural disturbance and physical factors.

Nonforest land: Land that has never supported forests and land formerly forested where use for timber management is precluded by development for other uses such as crops, improved pasture, residential areas, city parks, improved roads, and power-line clearings.

Nongame species: In this plan, *nongame species* include amphibians, reptiles, and those mammal and bird species that are not hunted or trapped.

Nontimber forest products: Nontimber forest products, also known as special forest products, can be categorized into five general areas: foods, herbs, medicinals, decoratives, and specialty items. Special forest products might include berries, mushrooms, boughs, bark, Christmas trees, lycopodium, rose hips and blossoms, diamond willow, birch tops, highbush cranberries, burls, conks, Laborador tea, seedlings, cones, nuts, aromatic oils, extractives.

Normal rotation age: For even-aged managed cover types, the rotation age set by the SFRMP team for nonERF timberland acres. It is based on the culmination of mean annual increment (CMAI), other available data related to forest productivity that also considers wood quality, and local knowledge.

Old-growth forests: Forests defined by age, structural characteristics, and relative lack of human disturbance. These forests are essentially free from catastrophic disturbances, contain old trees (generally over 120 years old), large snags, and downed trees. Additional details on the management of old-growth forests on DNR-administered lands are contained in Old-Growth Guidelines (1994).

Old forest: A forest stand of any particular forest cover type whenever its age exceeds the normal rotation age established by the landscape team for that cover type. In this plan, it does not include designated old growth, state park lands, etc.

Old-forest conditions: Forest that has the age and structural conditions typically found in mature to very old forests, such as large-diameter trees, large snags, downed logs, mixed species composition, and greater structural diversity. These older forest conditions typically develop at stand ages greater than the normal rotation ages identified for even-aged managed forest cover types.

Old-forest management complex: Represents an area of land, made up of several to many stands, that is managed for old growth, special management zone (SMZ), and extended rotation forest (ERF) in the vicinity of designated old-growth stands.

Operational planning: What specifically will happen. The specific actions (i.e., projects, programs, etc.) that will be taken to move toward the desired future established by the various sources of strategic direction. Examples include stand examination lists, road projects, recreational trail/facilities projects, staffing, annual work plan targets, etc. Operational planning is also referred to as tactical planning.

Overmature: A tree or even-aged stand that has reached an age where it is declining in vigor and health and reaching the end of its natural life span resulting in a reduced commercial value because of size, age, decay, and other factors.

Overstocked: The situation in which trees are so closely spaced that they are competing for resources, resulting in less than full-growth potential for individual trees.

Overstory: The canopy in a stand of trees.

Partial cut: A cutting or harvest of trees where only some of the trees in a stand are removed.

Patch: An area of forest that is relatively homogenous in structure, primarily in height and stand density, and differs from the surrounding forest. It may be one stand or a group of stands.

Plantation: A stand composed primarily of trees established by planting or artificial seeding.

Prescribed burn: To deliberately burn wildlands (e.g., forests, prairie or savanna) in either their natural or modified state and under specified conditions within a predetermined area to meet management objectives for the site. A fire ignited under known conditions of fuel, weather, and topography to achieve specific objectives.

Prescription: A planned treatment (clear-cut, selective harvest, thin, reforest, reserve, etc.) designed to change current stand structure to one that meets management goals. A written statement that specifies the practices to be implemented in a forest stand to meet management objectives. These specifications reflect the desired future condition at the site and landscape level and incorporate knowledge of the special attributes of the site.

Pulpwood: Wood cut or prepared primarily for manufacture into wood pulp or chips, for subsequent manufacture into paper, fiber board, or chip board. Generally, trees 5 to 12 inches diameter at breast height are used.

Pure forest or stand: An area or stand composed principally of one species, conventionally at least 80 percent based on numbers, basal areas, or volumes.

Range of natural variation (RNV): Refers to the expected range of conditions (ecosystem structure and composition) to be found under naturally functioning ecosystem processes (natural climatic fluctuations and disturbance cycles such as fire and windstorms). RNV provides a benchmark (range of reference conditions) to compare with current and potential future ecosystem conditions.

Rare Features Database is maintained by the Natural Heritage and Nongame Research Program and is comprised of locational records of the following features:

Rare plants. Species listed as federally endangered, threatened, or as candidates for federal listing; all species state listed as endangered, threatened, or special concern. Several rare species are also tracked currently have no legal status but need further monitoring to determine their status.

Rare animals. Species listed as federally endangered or threatened (except the gray wolf) are tracked, as well as all birds, small mammals, reptiles, amphibians, mussels, and butterflies listed as state endangered, threatened, or of special concern.

Natural communities. Functional units of landscape that are characterized and defined by their most prominent habitat features - a combination of vegetation, hydrology, landform, soil, and natural disturbance cycles. Although natural communities have no legal protection in Minnesota, the Natural Heritage Program, Nongame Research Program, and the Minnesota County Biological Survey have evaluated and ranked community types according to their relative rarity and endangerment throughout their range. Locations of high-quality examples are tracked in the Rare Features Database.

Geologic features. Noteworthy examples of geologic features throughout Minnesota are tracked if they are unique or rare, extraordinarily well preserved, widely documented, highly representative of a certain period of geologic history, or very useful in regional geologic correlation.

Animal aggregations. Certain types of animal aggregations, such as nesting colonies of waterbirds (herons, egrets, grebes, gulls and terns), bat hibernacula, prairie chicken booming grounds, and winter bald eagle

roosts are tracked regardless of the legal status of the species that comprise them. The tendency to aggregate makes these species vulnerable because a single catastrophic event could result in the loss of many individuals.

Rare species: A plant or animal species that is designated as endangered, threatened, or a species of special concern by the state of Minnesota (this includes all species designated as endangered or threatened at the federal level), or an uncommon species that does not (yet) have an official designation, but whose distribution and abundance need to be better understood.

Regeneration: The act of renewing tree cover by establishing young trees naturally (e.g., stump sprouts, root suckers, natural seeding) or artificially (e.g., tree planting, seeding).

Regional landscapes: The Minnesota Forest Resources Council (MFRC) established eight regional landscapes covering Minnesota based on ecological, socio-economic, and administrative factors. These landscapes were established to undertake landscape-based planning and coordination across all forest ownerships. The subsections included in this plan are in the Northeast Landscape Region.

Release: Freeing a tree, or group of trees, from competition that is overtopping or closely surrounding it.

Reserved forest land: Forest land withdrawn from timber utilization through statute, administrative regulation, or designation.

Riparian area: The area of land and water forming a transition from aquatic to terrestrial ecosystems along streams, lakes, and open water wetlands.

Riparian management zone (RMZ): That portion of the riparian area where site conditions and landowner objectives are used to determine management activities which address riparian resource needs. It is the area where riparian guidelines apply.

Rotation age: The period of years between when a forest stand (i.e., primarily even-aged) is established (i.e., regeneration) and when it receives its final harvest. This time period is an administrative decision based on economics, site condition, growth rates, and other factors.

Salvage cut: A harvest made to remove trees killed or damaged by fire, wind, insects, disease, or other injurious agents. The purpose of salvage cuts is to use available wood fiber before further deterioration occurs to recover value that otherwise would be lost.

Sanitation cut: A cutting made to remove trees killed or injured by fire, insects, disease, or other injurious agents (and sometimes trees susceptible to such injuries) for the purpose of preventing the spread of insects or disease.

Sapling: A tree that is 1 to 5 inches in diameter at breast height.

Sawlog: A log large enough to produce lumber or other products that can be sawed. Its size and quality vary with the utilization practices of the region.

Sawtimber: Trees that yield logs suitable in size and quality for the production of lumber.

Scarify: To break up the forest floor and topsoil preparatory to natural regeneration or direct seeding.

Scientific and natural area (SNA): Areas established by the Minnesota Department of Natural Resources, Division of Ecological Services to preserve natural features and rare resources of exceptional scientific and educational value.

Seedbed: The soil or forest floor on which seed falls.

Seed tree: Any tree that bears seed; specifically, a tree left standing to provide the seed for natural regeneration.

Selective harvest: Removal of single scattered trees or small groups of trees at relatively short intervals. The continuous establishment of reproduction is encouraged and an all-aged stand is maintained. A management option used for shade-tolerant species.

Shade tolerance: Relative ability of a tree species to reproduce and grow under shade or low light levels caused by shading from surrounding vegetation. Shade tolerant species can grow in low light conditions, while intolerant species require full sunlight.

Shelterwood harvest: A harvest cutting in which trees on the harvest area are removed in a series of two or more cuttings to allow the establishment and early growth of new seedlings under partial shade and protection of older trees. Produces an even-aged forest.

Silviculture: The art and science of establishing, growing, and tending stands of trees for multiple purposes. The theory and practice of controlling the establishment, composition, growth, and quality of forest stands to achieve certain desired conditions or management objectives.

Silviculture and Roads Module (SRM): The SRM provides a database and application through which field foresters can record planned and actual forest development prescriptions (e.g., site preparation, tree planting projects, timber harvest, road maintenance, etc.) and follow-up surveys on publicly owned lands managed by the Division of Forestry and other divisions. SRM supports the geographic description of the extent of a development project separate from FIM stand boundaries. A variety of maps and other reports can be generated by the development system. SRM will also produce maps and reports that roll up Forestry area data to the regional or statewide level. Part of the DNR's FOREstry Information SysTem (FORIST).

Site index (SI) : A species-specific measure of actual or potential forest productivity or site quality, expressed in terms of the average height of dominant trees at specific key ages, usually 50 years in the eastern U.S.

Site preparation: Treatment of a site (e.g., hand or mechanical clearing, prescribed burning, or herbicide application) to prepare it for planting or seeding and to enhance the success of regeneration.

Site productivity: The relative capacity of a site to sustain a production level over time. The rate at which biomass is produced per unit area. For example, cords per acre growth of timber.

Size class: A category of trees based on diameter class. The DNR's forest inventory has size classes such as Size Class 1 = 0 - 0.9 inch diameter; 2 = 1 - 2.9 inches diameter; 3 = 3 - 4.9 inches; 4 = 5 - 8.9 inches; 5 = 9 - 14.9 inches, etc. Also, size class may be referred to as seedling, sapling, pole timber, and saw timber.

Slash: The non-utilized and generally unmarketable accumulation of woody material in the forest such as limbs, tops, cull logs, and stumps that remain in the forest as residue after timber harvesting.

Snag: A standing dead tree.

Soil productivity: The capacity of soils, in their normal environment, to support plant growth.

Special concern species: A plant or animal species that is extremely uncommon in Minnesota or has unique or highly specific habitat requirements and deserves careful monitoring. Species on the periphery of their ranges may be included in this category, as well as species that were once threatened or endangered but now have increasing, or stable and protected, populations.

Special management zone (SMZ): A buffer immediately surrounding designated old-growth forest stands. It is intended to minimize edge effects and windthrow damage to old-growth stands. Minimum width is 330-feet from the edge of the old-growth stand. Timber harvest is allowed in the SMZ, but there are limitations on how much can be clear-cut at any given time.

Stand: A contiguous group of trees similar in age, species composition, and structure, and growing on a site of similar quality, to be a distinguishable forest unit. A forest is comprised of many stands. A *pure stand* is composed of essentially a single species, such as a red pine plantation. A *mixed stand* is composed of a mixture of species, such as a northern hardwood stand consisting of maple, birch, basswood, and oak. An *even-aged stand* is one in which all of the trees present are essentially the same age, usually within 10 years of age for aspen and jack pine stands. An *uneven-aged stand* is one in which a variety of ages and sizes of trees are growing together on a uniform site, such as a northern hardwood stand with three or more age classes.

Stand age: In the DNR's forest inventory, the average age of the main species within a stand.

Stand density: The quantity of trees per unit area. Density usually is evaluated in terms of basal area, numbers of trees, volume, or percent crown cover.

Stand examination list: DNR forest stands to be considered for treatment (e.g., harvest, thinning, regeneration, prescribed burning, re-inventory, etc.) over the planning period based on established criteria (e.g., rotation age, site index, basal area, desired future cover-type composition, etc.). These stands will be assigned preliminary prescriptions and most will receive the prescribed treatment. However, based on field appraisal visit, prescriptions may change for some stands because of new information on the stand or its condition.

Stand selection criteria: Criteria used to help identify stands to be treated as determined by the subsection team. Criteria will likely be based on rotation ages, site index, basal area, cover-type composition, understory composition, location, etc. Factors considered in developing stand selection criteria will include 1) desired forest composition goals, 2) timber growth and harvesting, 3) old-growth forests, 4) extended and normal rotation forests, 5) riparian areas, 6) wildlife habitat, 7) age and cover-type distributions, 8) regeneration, 9) thinning, and 10) prescribed burning needs.

State forest road: Any permanent road constructed, maintained, or administered by the Minnesota Department of Natural Resources for the purposes of accessing or traversing state forest lands.

Stocking: An indication of the number of trees in a stand as compared to the desirable number for best growth and management, such as well-stocked, overstocked, and partially stocked. A measure of the proportion of an area actually occupied by trees.

Strategic planning: A process to plan for desired future states. Includes aspects of a plan or planning process that provide statements and guides for future direction. The geographic, programmatic, and policy focus can range from very broad and general to more specific in providing tiers/levels of direction. Strategic planning is usually long term (i.e., at least five years, often longer). It usually includes an assessment of current trends and conditions (e.g., social, natural resource, etc.), opportunities, and threats; identification of key issues; and the resulting development of goals (e.g., desired future conditions), strategies, and objectives. Vision and mission statements may also be included.

Stumpage: The value of a tree as it stands in the forest uncut. Uncut trees standing in the forest.

Stumpage price: The value that a timber appraiser assigns to standing trees or the price a logger or other purchaser is willing to pay for timber as it is in the forest.

Subsection: A subsection is one level within the Ecological Classification System (ECS). From largest to smallest in terms of geographic area, the ECS is comprised of the following levels: Province --> Section --> Subsection --> Land Type Association --> Land Type --> Land Type Phase. Subsections areas are generally 1 to 4 million acres in Minnesota, with the average being 2.25 million acres. Seventeen subsections are scheduled for the SFRMP process.

Subsection forest resource management plan (SFRMP): A Department of Natural Resources (DNR) plan for vegetation management on forest lands administered by DNR divisions of Forestry and Wildlife that uses ECS subsections as the basic unit of delineation. Initial focus will be to identify forest stands and road access needs for the duration of the 10-year plan. There is potential to be more comprehensive in the future.

Succession: The natural replacement, over time, of one plant community with another.

Sucker: A shoot arising from below ground level from a root. Aspen regenerates from suckers.

Suppressed: The condition of a tree characterized by low growth rate and low vigor due to competition from overtopping trees or shrubs.

Sustainability: Protecting and restoring the natural environment while enhancing economic opportunity and community well-being. Sustainability addresses three related elements: the environment, the economy, and the community. The goal is to maintain all three elements in a healthy state indefinitely. Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable treatment level: A treatment level (e.g., harvest acres per year) that can be sustained over time at a given intensity of management without damaging the forest resource base or compromising the ability of future generations to meet their own needs. Treatment levels may need to be varied above and/or below the sustainable treatment level until the desired age-class structure or stocking level is reached.

Tactical planning: See operational planning.

Thermal cover: Habitat component (e.g., conifer stands such as white cedar, balsam fir, and jack pine) that provides wildlife protection from the cold in the winter and heat in the summer. Vegetative cover used by animals against the weather.

Thinning: A silvicultural treatment made to reduce the density of trees within a forest stand primarily to improve growth, enhance forest health, or recover potential mortality. Row thinning is where selected rows are harvested, usually the first thinning, which provides equipment operating room for future selective thinnings. Selective thinning is where individual trees are marked or specified (e.g., by diameter, spacing, or quality) for harvest. Commercial thinning is thinning after the trees are of merchantable size for timber markets. Pre-commercial thinning is done before the trees reach merchantable size, usually done in overstocked (very high stems per acre) stands to provide more growing space for crop trees that will be harvested in future years. **Threatened species:** A plant or animal species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range in Minnesota.

Timberland: Forest land capable of producing timber of a marketable size and volume at the normal harvest age for the cover type. It does not include lands withdrawn from timber utilization by statute (e.g., Boundary Waters Canoe Area Wilderness) or administrative regulation such as designated old-growth forest and state parks. On state forest lands this includes stands that can produce at least three cords per acre of merchantable timber at the normal harvest age for the cover type. It does not include very low productivity sites such as those classified as stagnant spruce, tamarack, and cedar, offsite aspen, or nonforest land. **Timber productivity:** The quantity and quality of timber produced on a site. The rate at which timber volume is produced per unit area over a period of time (e.g., cords per acre per year). The relative capacity of a site to sustain a level of timber production over time.

Timber stand improvement (TSI): A practice in which the quality of a residual forest stand is improved by removing less desirable trees and large shrubs to achieve the desired stocking of the best quality trees or to improve the reproduction, composition, structure, condition, and volume growth of a stand.

Tolerant: A plant capable of becoming established and growing beneath overtopping vegetation. A tree or seedling capable of growing in shaded conditions.

Two-aged stand: A stand with trees of two distinct age class separated in age by more than 20 percent of the rotation age.

Underplant: The planting of seedlings under an existing canopy or overstory.

Understocked: A stand of trees so widely spaced that even with full growth potential realized, crown closure will not occur.

Understory: The shorter vegetation (shrubs, seedlings, saplings, small trees) within a forest stand that forms a layer between the overstory and the herbaceous plants of the forest floor.

Uneven-aged stand: A stand of trees of a variety of ages and sizes growing together on a uniform site. A stand of trees with three or more distinct age classes.

Uneven-aged management: Forest management that results in forest stands comprised of intermingling trees or small groups having three or more distinct age classes. Best suited for shade-tolerant species.

Vegetation growth stage: The vegetative condition of an ecosystem resulting from natural succession and natural disturbance, expressed as vegetative composition, structure and years since disturbance. The

vegetation growth stage describes both the successional changes (i.e., the change in the presence of different tree species over time) and developmental changes (i.e., the change in stand structure over time due to the regeneration, growth, and mortality of trees). Vegetation growth stages express themselves along the successional pathways for a particular ecosystem depending on the type and level of natural disturbance that has occurred. Forest tree and other vegetation composition, habitat features, and wildlife species use change with the various growth stages.

Vegetation management plan: In the process of developing the 10-year stand examination list, many decisions and considerations go beyond identifying what timber will be cut (i.e., broader than timber management). This includes designation of old growth, extended rotation forests, riparian areas, desired future forest composition, visually sensitive travel corridors, etc., all of which are intended to address wildlife habitat, biodiversity, aesthetic, and other concerns. Prescriptions assigned to stands reflect decisions based on these multiple considerations and are broader than decisions relative to final harvest (e.g., ERF designation, uneven-aged management, thinning, regeneration, underplanting, prescribed burning, etc.).

Viable populations: The number of individuals of a species sufficient to ensure the long-term existence of the species in natural, self-sustaining populations that are adequately distributed throughout their range.

Volume: The amount of wood in a tree or stand according to some unit of measurement (board feet, cubic feet, cords), or some standard of use (pulpwood, sawtimber, etc.).

Well-stocked: The situation in which a forest stand contains trees spaced widely enough to prevent competition yet closely enough to utilize the entire site.

Wildlife management area (WMA): Areas established by the Department of Natural Resources, Division of Wildlife, to manage, preserve, and restore natural communities, perpetuate wildlife populations, and provide recreational and educational opportunities.

Windthrow: A tree pushed over by the wind. Windthrows are more common among shallow-rooted species.

APPENDIX F

Response to Public Comments Agassiz Lowlands Three-Year Extension Public Review Document

Background

A public comment period for the Agassiz Lowlands Three-Year Extension Public Review Document started on January 6, 2010 and ended March 1, 2010. Comments were accepted via letter, email, or fax. Each comment identified below is summarized and condensed from the submitted comments. The complete correspondence is available by contacting the department. For each comment a response is provided. Where appropriate, action(s) resulting from the comment are identified.

Comments have been received from the following organizations:

1. Minnesota Timber Producers Association (MTPA), letter dated February 28, 2010
2. Minnesota Forest Industries (MFI), letter dated February 28, 2010

MTPA and MFI submitted comments that revolve around four issues and their economic impacts:

1. volume and quality of timber estimated to be produced from selected stands;
2. location of stands in relation to markets;
3. management for timber revenue on trust lands; and,
4. identification of ecologically important lowland conifers.

The Department's responses are organized as an Overview followed by the Complete Response to Comments Received.

Overview of the Department's Response

The Department appreciates the comments offered and finds there is broad agreement with the underlying themes expressed by MTPA and MFI. These broad areas of agreement include:

1. mutual interest and necessity in maintaining a vibrant wood products industry in Minnesota;
2. recognizing the importance that the wood products industry plays in both local and statewide economies;
3. understanding the role played by industry in implementing vegetative management on state administered lands;
4. recognizing that forest harvest plays a vital role in attaining many of the mandated multiple forest resource management objectives of the Department;
5. managing all classes of lands considering the highest economic, ecological and recreational values possible;
6. emphasizing that field staff work priorities should utilize the inherent flexibility in the Agassiz Lowlands SFRMP to ensure consideration of: capturing the highest quality stands; proximity to markets; and, maximizing returns consistent with the AL SFRMP desired future forest conditions (DFFCs);
7. recognizing the challenges associated with transportation costs; and,
8. recognizing efforts to balance Department management objectives with the realities confronting the wood products industry in Minnesota.

Beyond these broad areas of agreement, some differences in approach exist between Department stand management and those recommended by MTPA and MFI. These differences are in the levels of the standards or criteria used and not in the overall need for the standard. For example, the comments recommend that criteria relating to rotation ages, amount of extended rotation forest, minimum old forest goals maintained over time, and acres reserved from treatment, can be altered to increase volumes, without negative impacts on other resource values. The Department here notes that MTPA and MFI have recognized the need for these standards and has applied them as data inputs into the RemSoft model. The focus of the comments primarily relate to the different levels at which these standards are applied. In this regard there is more agreement between MTPA and MFI comments and Department management than might first be suggested.

However as stated in these Responses, several issue areas are raised by MTPA and MFI that require further clarification to better outline the Department's overall goals of vegetative management. For these comments responses are offered with further information that supports the Department's vegetative management directions.

Complete Responses to Comments Received

1. Specific comments related to:

The volume and quality of stands identified for treatment during the Three-Year Extension implementation period.

Response

- MTPA/MFI have commented that based on their analysis of the Agassiz Lowlands dataset that additional volume and higher quality stands should result than that identified by the Agassiz Lowlands Extension. The Department's responses focus on two primary points:
 - different models were used (MTPA/MFI used the RemSoft model; while the Department used a treatment model spreadsheet format); and,
 - different criteria or data inputs were used to estimate volumes (i.e., normal rotation ages, maximum rotation ages, amount of extended rotation forests).
- Although different models and different data inputs were used, the resulting volumes are comparable, when all prescriptions and all volume sources are considered as outlined in the Extension document.
- The treatment model spreadsheet method used in the AL Three-Year Extension was driven by the following data inputs:
 - rotation ages;
 - desired old forest percentage goals;
 - identifying conversion opportunities consistent with the conversion objectives from the original 7-year plan; and,
 - Department objectives to strive for balanced age classes over time (sustainable harvests and sustainable habitat).
- Different inputs will result in different volume projections. Employing a treatment model such as RemSoft and data inputs that are different from the Department spreadsheet model and data inputs will result in different levels of treatment. DNR decided to use an updated version of the spreadsheet model rather than the RemSoft modeling platform for several reasons:

- Lack of availability of modeling support to run the RemSoft model. DNR's forest modeler position was vacant when the Agassiz Lowlands Three-Year Extension was being prepared. DNR is currently in the process of filling this position. DNR expects to use the RemSoft modeling platform when the full plan revision of the Agassiz Lowlands SFRMP begins in 2011.
- Given the lack of modeling support, the amount of time and data investments needed to build and populate the RemSoft model was not justified for the short three-year extension timeframe.
- In addition, the updated spreadsheet model facilitated comparisons with the original 7-year plan which was developed using a similar approach.
- Complicating this basic difference are the inputs used as criteria to run the models. Differences in rotation ages, old forest percent (ERF percentages), achieving cover type conversions and placing less emphasis on balancing age classes, over decades, can result in even further differences in treatment acres identified.

Many of the following Comments focus on applying a criteria or data inputs into the RemSoft model that are different than used in the Department's treatment model spreadsheets.

Comment:

1.1 "Age of stand: Stands at or near economic rotation ages should be selected for harvest. These stands provide higher quality timber and improve mill utilization in the manufacturing of products."

Response

- MTPA/MFI is essentially suggesting that the rotation ages used in the Department's treatment model should be revised to younger ages in an effort to capture higher quality timber. The Department agrees and acknowledges that higher quality timber can result from harvest of stands at or near their rotation age and that given the present age class distribution, too much emphasis on treating older stands can have an impact on the overall quality of fiber offered. The Department is mindful that higher quality timber can be found in the younger age classes, however believes the appropriate balance has been achieved between selecting younger stands (higher quality) and older stands (to balance age classes, maintain cover type acres and encourage regeneration). In an effort to balance the need to offer higher quality younger age classes with the need to treat older stands, the Three-Year Stand Exam List includes stands from a variety of age classes including some stands that are under the recommended rotation age.
- Quality of stands is partly a function of rotation ages. Rotation ages are established based on economics, site condition, growth rates, and other factors. Treating stands at or near rotation age is designed to capture harvest of the highest quality timber. DNR establishes normal rotation ages based on the culmination of Mean Annual Increment (MAI) using either FIA or DNR FIM data specific to the subsection(s) involved. Culmination of MAI is considered the point where the rate of biologic growth is maximized.
- Rotation ages were established for the original 7-year plan. This is an extension to the original 7-year plan with the intent to "extend" the primary stand selection criteria for the three-year

period. Rotation ages were not altered from the original plan for purposes of completing the extension.

- In an effort to offer some younger, higher quality stands, the Three-Year Extension implemented a stand scoring system that directed Areas to select stands from a variety of age classes including the 31-40 age class in the aspen/balm/birch cover type (below rotation age). A target of 600 acres of aspen/balm/birch in the 31-40 and 41-50 age classes was established. Selecting stands from a variety of age classes, including some stands below their normal rotation age is, in part, designed to balance age classes over time and provides high quality timber resulting from treatment of younger age classes, as suggested in the Comment.
- Although rotation ages are primary criteria for stand selection, treatment of some older stands is necessary as a management strategy, to maintain the stand's ability to regenerate and also to maintain desired amounts of each forest type.

Action resulting from this Comment:

Extension implementation training for field staff will emphasize that within the Three-Year Stand Exam List, staff workloads should give priority to site visits of stands at or near rotation ages to take advantage of potentially higher quality timber.

Comment:

1.2 *“MTPA / MFI prescribed 20 percent of all forest types to an Extended Rotation Age (ERF) as stated in the DNR ERF Guidelines.”* (as inputs to the Remsoft model)

Response

- MTPA / MFI applied a 20 % prescribed ERF in the RemSoft model “...as stated in DNR ERF Guidelines.” This 20 % is a different criteria input than applied by the Department in the treatment model spreadsheets.
- The DNR ERF Guideline does not state that 20% of all forest types should be managed as ERF. The Guideline provides a minimum of 10% of timberlands be managed as ERF in each subsection, also stating that 50% or more may be appropriate in some subsections. There is no maximum amount of ERF established in the Guideline.
- MTPA and MFI have indicated that DNR should be using the suggested minimum extended rotation ages from the DNR ERF Guideline (e.g., extended rotation age for aspen of 1.5 x 40 = 60 years). DNR's application takes the ERF Guideline language as written and views the 1.5x normal rotation age as a minimum extended rotation age (not the absolute or maximum ERF).
- The 20% assertion in the Comment comes from the amount assumed in the 2nd model runs of the Generic Environmental Impact Statement (GEIS). The assumed 20% prescribed ERF was not intended to be the “correct” or “target amount” of ERF, but rather a reasonable assumption at that time of what might eventually be managed as ERF on state and federal lands. The actual amount of prescribed ERF will vary based on cover type, rotation ages, and the desired age-class distribution to achieve the appropriate amount of older forest in each cover type.

- Identification of stands to be managed as ERF was not completed for the original 7-year AL SFRMP. To complete the treatment levels for the Three-Year Extension, the Department determined to apply a minimum old forest percent goal for each of the major cover types. The applied old forest percent goal ranged from 10% to 15% for the various cover types (see p.15, *Extension Public Review Document*). These old forest percentages are consistent with those recommended in the original 7-year AL SFRMP.
- As the full revision of the AL SFRMP is prepared, ERF goals and associated amounts/locations of stands to be managed to an extended rotation age will be revisited, consistent with Department ERF policy and guidelines.

Comment:

1.3 “Aspen, for example, had a normal rotation age of 40-45 and an ERF age of 55-60” (as inputs into the Remsoft model)

Response

- This rotation age and ERF age is different from the data inputs used by the Department in the treatment model spreadsheets. As stated above, different data inputs will result in different volume estimates. Lowering the rotation age and ERF age will result in more volume, but potentially at the expense of other mandated resource values and sustainability.
- DNR establishes normal rotation ages based on the culmination of Mean Annual Increment (MAI) using either FIA or DNR FIM data specific to the subsection(s) involved. Culmination of MAI is considered the point where the rate of biologic growth is maximized. The original 7-year Agassiz Lowland SFRMP established a normal rotation age of 45-50 for the aspen/balm/birch cover type group, depending on site index, with a weighted average of 47. Reducing the normal rotation age to 40-45 (as the Comment states) will increase the number of stands for treatment as shown in the RemSoft model run, but is not supported by MAI data and field staff experience in the Agassiz Lowland subsection.
- Rotation ages were established for the original Agassiz Lowlands 7-year plan and were not changed for this Three-Year Extension.
- The treatment models prepared for the AL Three-Year Extension applied a minimum old forest percentage goal rather than identifying specific stands to be managed as ERF. The minimum old forest percentages used to prepare the Three-Year Extension were carried over from the old forest percentages recommended in the original 7-year plan.

Comment:

1.4 “The results of the modeled run show that opportunities exist for the DNR to harvest additional acres.”

Response:

- The Department accepts this comment as primarily timber volume questions and notes that using different models (RemSoft) will result in different volume projections than those identified in the AL SFRMP Three-Year Extension. The Department’s response centers on clarifications of volume in cords, as projected in the Three-Year Extension. The cords resulting from the MTPA/MFI RemSoft model are compared with cords as projected in the Three-Year Extension. The Extension applied two volume estimation methods:
 - the Department FIM Based Method; and,

- Walters-Ek volume-estimating method.
- Table 1 of MTPA/MFI Comments provide that, based on their RemSoft model runs, state lands in the Agassiz Lowlands subsection should produce 147,348 cords annually over the three-year extension period. This Table further states that the MTPA/MFI's estimate from DNR's three-year stand list (i.e., DNR Proposal) will result in 110,119 cords annually, and suggests that additional acres should be identified by the Department. The simple response here is that not all cords to be site visited and possibly treated are included on the AL Three-Year Extension Stand Exam List. The AL Extension document states that some acres will be added to Forestry Area Annual Stand Exam Lists (ASELs) or added as Forestry Area Annual Plan Additions (APAs), (See Table 3.7 of the Extension document).
- The 147,348 cord estimate must be compared with 132,672 to 164,306 cords as projected on Table 3.7 taken from the AL Extension document. As stated earlier, the total volumes anticipated by the Department compared with RemSoft are similar but were arrived at through different methods and in some instances different data inputs. When all prescriptions are considered (even aged, partial cut, field visits, etc.), and volumes the Department anticipates to result from the harvest of additional ash/lowland hardwoods, backlog, and red pine thinning stands, the Agassiz Lowlands Three-Year Extension projects harvest cords at an annual average ranging from 132,672 to 164,306. The lower end of the estimated range is derived from the DNR FIM-based method. The high end of the estimated range is derived from application of the Walters-Ek volume-estimating method.
- Only a portion of the acres of ash/lowland hardwoods and red pine thinnings are included on the Three-Year Stand Exam List. A significant number of acres of ash/lowland hardwoods and red pine thinnings will be added during the three-year extension period through ASELs and APAs. Those acres to be added as ASELs and APAs are not included in the MTPA/MFI estimate of the "DNR proposal". These additional acres (ash/lowland hardwoods, backlog stands and red pine thinnings) are accounted for on Table 3.7 of the Extension document. As stated in the Extension document, additional ash/lowland hardwood stands may be selected based on demand and forest health issues. Further, only approximately 1/3 of red pine thinning acres were placed on the list, the remaining acres will be selected in the course of other field work and added to ASELs or as APAs. In addition all backlog stands were reset to the 0-10 age-class.
- To summarize, total even aged annual cords, as projected by MTPA/MFI, compared to cords from all prescriptions as projected in the Stand List and from ash/lowland hardwoods, backlogs and red pine thinnings are comparable as summarized here:

MTPA/MFI RemSoft: 147,348

AL SFRMP Three-Year Extension: 132,672* to 164,306*

*includes: all prescriptions, ash/lowland hardwood, backlog stands, and red pine thinning

As stated above, the volumes are comparable but were arrived at by different models and data inputs. These differences are clarified here:

- Within the Three-Year Stand Exam List, MTPA/MFI calculated cords resulting only from even-aged harvests, and did not include volume anticipated from other prescriptions (partial cut, on-site visit).

- MTPA/MFI model assumes even-aged harvests in cover types the Department manages primarily through uneven-aged systems (e.g., northern hardwoods, northern white cedar, white pine, ash/lowland hardwoods).
- MTPA/MFI's volume estimate of the "DNR Proposal" used only those stands included on the AL Extension Three-Year Stand Exam List. In so doing significant volumes that are expected to result from additional ash/lowland hardwoods, red pine thinning and backlog stands were not included in the MTPA/MFI "DNR Proposal" volume estimation. A more valid comparison to MTPA/MFI's RemSoft estimate of 147,385 annual cords is with the range of 132,672 to 164,306 annual cords provided in Table 3.7 of the AL Three-Year Extension document.
- The spreadsheet treatment models as used for the Three-Year Extension identify total acres which can be treated within the data inputs used in the spreadsheet model resulting in a potential management pool. From this pool, stands are selected and given a preliminary prescription based on all available information including actual knowledge of the stand by foresters. Preliminary prescriptions can range from even aged harvest to simply an on-site visit to determine the best management for that particular stand.
- Ash and tamarack are excluded as merchantable types by MTPA/MFI. However, ash and tamarack are treated by the Department as commercial cover types and included as potential volume further making comparisons of projected volumes challenging.
- When cords resulting from all prescriptions, ash/lowland hardwoods, backlog and red pine thinnings are compared to the MTPA/MFI RemSoft volume projections, the volume estimates are similar.

Although different models were used with different criteria inputs, as shown below (*Table 3.7 taken from the Three-Year Extension Public Review Document*) volumes resulting from implementation of Three-Year Extension compare favorably with even-aged cords from the RemSoft model and also compare favorably with pre-SFRMP harvest levels.

**Table 3.7 Agassiz Lowlands Three-Year Extension:
Volume Comparison of Historical Cords Sold with Projected Cords**

Historical Cords Sold		Agassiz Lowlands Annual Volume Estimate FY2011-FY2013	
		Department FIM Based Volume Projection Method	Walters –Ek Volume Projection Method
Annual Average Sold FY'95 –FY'02	157,600	NA	NA
Annual Average Sold FY'03 – FY'09	205,500*	NA	NA

Annual Average Three-Year Extension FY'11 – FY'13	NA	117,672	146,306
Potential Add'l Volume from RP Thinning, Ash/LH & Backlog		15,000	18,000
Totals		132,672	164,306

*Reflects accelerated harvests in aspen/bam/birch and jack pine, as planned in the AL SFRMP 7-year plan.

As stated on Table 3.7 of the Extension Public Review Document (page 32), the total annual volume projected to result from implementation of the Three-Year Extension includes:

- 117,672 cords per year (FIM Base Volume Projection) to 146,306 cords (Walters-Ek) is projected to result from stands on the Three-Year Stand Exam List.
- 15,000 cords per year (FIM Based Method) to 18,000 cords (Walters-Ek) is projected to result from:
 - Cords resulting from a backlog of stands left over from the original 7-year stand exam list. Because these stands were on the original 7-year stand exam list, they were specifically excluded from the Three-Year Extension stand exam list. These backlog stands will be treated in addition to the stands placed on the Three-Year Extension Stand Exam List.
 - Red pine thinnings not placed on the Three-Year Stand Exam List. The annual red pine thinning target of 823 acres is identified, but not all stands to be thinned were placed on the Three-Year Stand Exam List. During the stand selection process, foresters determined that many stands for thinning would be selected during the course of other on-site visits and included on ASELS or added as APAs.
 - During stand selection, Areas determined that ash and lowland hardwoods would be offered as demand, forest health concerns and local markets dictate. Without

a clear demand at this time, Areas determined that ash and lowland hardwoods would be cruised and offered as needed or requested.

Comment:

- 1.5 ***“Review of table 2 (from MTPA / MFI Comments) shows that annual harvest rates can be maintained over next 50 years. A review of the aspen type shows that in decades 3 and 4 that providing effective ERF as a hard target would significantly constrain, not only current outputs, but long term harvest rates as well.”***

Comment:

- 1.6 ***“Thus in order to maintain timber production in decades 3 and 4 effective ERF levels need to be lowered to maintain adequate timber harvest levels.”***

Comment:

- 1.7 ***“The DNR needs to provide specific rationale why maintaining in the long-term aspen in the 61-70 year age class is required given the negative impacts to state revenues and timber outputs.”***

Response

- This Comment recommends in future decades that ERF in aspen be allowed to fall below Department minimums; and, the amount of aspen left in the 61-70 age class is too great. These three Comments recommend that different criteria inputs be applied than were used in the Department’s treatment model spreadsheets. As stated, different inputs will result in different volume projections.
- The treatment models prepared for the AL Three-Year Extension applied a minimum old forest percentage rather than identifying ERF. The intent is the same, to maintain older forests and species that benefit from older forests. Ten to 15 percent old forest minimums were applied by the Department to the treatment models for the even aged managed cover types. These old forest percentages are fairly consistent with old forest goals in other SFRMPs and consistent with old forest direction in the original 7-year plan.
- MTPA/MFI Table 2 identifies that in future decades 3 and 4, effective ERF falls to 6.5% and 7.5%. Considering the 13% old forest goal, as identified in the Three-Year Extension, the resulting old forest percent for this cover type for these decades is 13% and 14% (see *page 13 of AL Extension Public Review Document*). Allowing the amount of old forest to fall to 6-7 % for two decades is not viewed as providing adequate wildlife habitat.
- Given the requirement to accommodate multiple forest resource values, the Department must implement multiple forest management objectives for both the near and long term. The AL Three-Year Extension has considered such factors as rotation ages, old forest percent and conversions to arrive at sustainable treatment levels. These factors support other multiple use objectives such as maintaining and improving wildlife habitat, recreational values, ecological and cultural resources. Altering these factors may increase volume, but at the expense of other resource values. The inputs into the AL Three-Year Extension treatment models are viewed as the appropriate balance of criteria to support the sustainable multiple use approach supported by the Department.

- Balancing age classes is a primary driver of the Department's forest management direction because it provides a sustainable flow of forest products, revenue, habitat and recreation, thereby meeting the needs of a wide array of stakeholders. Balancing forest age classes is also identified as a key strategy for mitigation of higher harvest levels as stated in the GEIS on Minnesota Timber Harvest and Forest Management. If this constraint were removed, a short term gain in volume could be achieved, at the expense of a long term, steady, predictable supply of resources.
- As stated above, this is an extension to the original plan. The maximum rotation age for aspen, from the original 7-year plan, was 70 years. Rotation ages were not altered to complete this Three-Year Extension. The long-term goal from the original 7-year plan is to maintain 8,600 acres in the 61-70 year age class of the aspen/balm/birch cover type as old forest (i.e., beyond the identified normal rotation age). This and older age classes (i.e. beyond normal rotation age) are left to maintain old forest values. The benefits of maintaining old forest are identified elsewhere in these Responses. Further, some older aspen is likely to have been bypassed by stand selection teams in favor of younger stands and stands with more suitable access.

Comment:

1.8 *"The DNR has failed to provide adequate analysis of these impacts in terms of timber outputs and the cost in loss revenue and jobs to the state of Minnesota."*

Response

- The Department acknowledges that the wood products industry is vital to the Minnesota economy and views the industry as an asset and key partner in managing Minnesota's forests to implement vegetation management and attain multiple forest resource management goals. Without the wood products industry many of the Department's other resource management goals could not be achieved.
- The *Sustainable Forest Resources Management Act* established a process by which broad landscape level goals including fostering economic productivity through timber products would be established and implemented by all public and private forest land managers. The broad goals of the *Act* considered the widest range of forest management objectives practicable. The AL SFRMP DFFCs are consistent with the broad landscape level directions established in the *MFRC's Northern Landscape Plan*. The original 7-year plan and the Three-Year Extension considered a wide range of forest management issues, in addition to harvest, that have potential to impact local and statewide economies.
- The Department notes that by statute, policy, and directive many goals are required to be taken into consideration, in addition to producing wood products. Given the Department's long-term perspective and the requirement to accommodate multiple forest users, multiple forest management objectives for both the near and long term need to be considered.
- The demand for forest products from the Agassiz Lowlands subsection and the jobs these industries provide are considered in establishing the primary data inputs into the treatment levels (normal rotation ages, maximum rotation ages, and sustainability). The Department is charged with balancing these economic objectives with other objectives such as maintaining forest composition, old-forest habitats, and within-stand diversity. To adequately address the concerns of all users, the Department balances objectives that maximize timber quality and productivity with the forest resource objectives of other users. In addition to calculating timber revenues, a comprehensive evaluation of economic benefits derived from forest resources

must also consider the economic value of cultural and environmental resources that are reflective of the Department's sustainability, multiple use directives.

Comment:

1.9 *“Higher Quality Stands: The DNR stand list over the next three years should favor stands that are productive and are holding high quality timber.”*

Comment:

1.10 *“There is an opportunity for the DNR to identify additional stands (aspen) that are under 60 years of age to harvest over the next three years.”*

Response

- The Department agrees and acknowledges that higher quality timber can result from harvest of stands at or near their rotation age and that given the present age class distribution, too much emphasis on treating older stands can have an impact on the overall quality of fiber offered. The Department believes the appropriate balance has been achieved between selecting younger stands (higher quality) and older stands (to balance age classes, maintain cover type acres and encourage regeneration). In an effort to balance the need to offer higher quality younger age classes, with the need to treat older stands, the Three-Year Stand Exam List includes stands from a variety of age classes including some stands that are under the 60 year age as recommended in the Comment. The Department is mindful that higher quality timber can be found in the younger age classes.
- The stand selection criteria and treatment models used to select the Three-Year Stand Exam List inherently takes into consideration factors and criteria that allows for balancing timber harvest and production with objectives reflecting other stakeholder interests. The Three-Year Stand Exam List is the result of data inputs into treatment models that result in sustainable treatment levels. Those data inputs include normal and maximum rotation ages by cover type. These rotation ages are applied to the FIM dataset to identify a potential pool of stands. To this management pool, a stand scoring system was implemented that directed Areas to select stands from a variety of age classes by cover type. Selecting stands from a variety of age classes, including some stands below their normal rotation age is, in part, designed to balance age classes over time and provides high quality timber resulting from treatment of younger age classes, as suggested in the Comment.
- A driving factor in establishing treatment levels is to balance age classes over time. Treating stands in excess of treatment level goals, by decade, will aggravate age class imbalances.
- The rotation ages, as used in the Three-Year Extension, are designed to implement harvest at the culmination of MAI for each cover type. When the AL SFRMP revision is prepared, the RemSoft model will be used which as a function of the model, will select stands based on maximizing timber volume over time while optimizing other multiple objectives (e.g., old forest, patches, desired age-class distribution, and cover type conversion).

Action resulting from this Comment:

Extension implementation training for field staff will emphasize that within the Three-Year Stand Exam List, staff workloads should give priority to site visits of stands that are under the 60 year age to take advantage of potentially higher quality timber.

Comment:

1.11 *“It is estimated that more than 800 acres of red pine thinning could be implemented, annually... MTPA (MFI) further recommends that the DNR treat up to 800 acre of red pine by commercial thinning, annually.”*

Response

- Stand Selection Criteria and Instructions recommended that Forestry Areas identify 2,469 acres (823 acres annually) as targets for red pine thinning (*p. 41 of Stand Selection Instructions and p. 32 of Extension Public Review Document*).
- Of the total red pine target acres (2,469 over three years), a total of 731 acres (244 annual acres) were actually selected and placed on the Three-Year Stand Exam List (*p.23 of Extension Public Review Document*). The majority of the annual target acres (579 of the 823 annual acres) will be selected in the course of other on-site visits and be included on the Area’s ASELS or added as APAs.

Action resulting from Comment:

Following adoption of the Final AL SFRMP Three-Year Extension, training for Forestry Areas will emphasize the target of 823 annual acres of red pine thinning and will provide guidance on the value of timely harvest of young stands. The Extension training will recommend that pine stands be site visited on a recurring basis and evaluated for thinning.

Comment:

1.12 *“Further, the proposed stand list does not include any red pine stands to be managed under even-aged systems. MTPA (MFI) recommends that the stand list include red pine stands to be managed and regenerated by proven even aged systems.”*

Response

- No significant amount of red pine acres exist beyond the established normal rotation age (100 years) in the subsection. Information gathered as inputs to the Monitoring Report identified that only 104 acres of the over 13,000 acres of red pine in the Agassiz Lowlands subsection was over the rotation age of 100 years. Of these 104 acres a total of 88 acres are designated old growth. The 104 acres of red pine over 100 years old is still 1,200 acres short of the 10% red pine old forest goal of 1,300 acres.

2. Specific Comments related to:

Location of stands in relation to timber markets.

Comment:

2.1 *“MTPA (MFI) recommends that the DNR propose more stands for harvest that are within 50 miles of major timber markets.”*

Response

- The Department’s overall vegetative management direction is to manage all stands based on broad, comprehensive resource based goals and objectives applied across the entire Agassiz Lowlands landscape. Proximity to markets has not been a factor or

consideration in spatially locating where to achieve various SFRMP goals in stand selection criteria.

- The Department has not historically made decisions on whether to treat or manage lands based on proximity to timber markets. Implementing a distance factor to select SFRMP stand exam lists will have implications in future years, such as: less timber available close to markets; effects on age-class distributions; spatial implications; and, distribution of habitats.
- Understanding that transportation costs are integral to industry economics, Forestry Areas are currently applying a Haul Distance Factor to adjust the appraised price of timber.
- Recognizing the current economic challenges faced by the wood products industry, during this Extension implementation period, the Department will direct field staff to give priority to managing stands, from the Three-Year Stand Exam List, considering proximity to markets and stands that offer most reasonable access. While remaining consistent with objectives of the AL SFRMP, within the flexibility available, as stands are selected for field visit, proximity to markets and access will be given greater consideration.

Action resulting from this Comment:

Extension implementation training for field staff will emphasize that within the Three-Year Stand Exam List, staff work load priorities should be directed to stands within closer distances to markets; and, to manage stands posing suitable access in an effort to avoid additional access development costs.

3. Specific comments related to:

Vegetation management specifically related to trust lands.

Comment:

3.1 “The DNR should look for opportunities to maximize timber sale revenues from school trust managed lands through increased harvest levels.”

Response

- Historically, DNR has not generally singled out trust lands for special management beyond attempting to implement the goal:

“... to secure the maximum long-term economic return from the school trust lands consistent with the fiduciary responsibilities imposed by the trust relationship established in the Minnesota Constitution, with sound natural resource conservation and management principles, and with other specific policy provided in state law.”
- The AL Three-Year Extension seeks to implement trust land management consistent with statutes as well as consistent with how trust lands were treated in the original 7-year SFRMP. Except for lands with unique resources (SNAs, old growth, state parks) all state timberlands are managed under the application of broad resource management policy. This is consistent with how trust lands were treated in the original 7-year SFRMP.
- The Department recognizes the challenge of managing to maximize long term economic returns balanced with sound natural resource conservation and management principles. For this Extension implementation period, the Department will direct field staff to give greater

consideration to economic return when managing trust lands, while balancing with other management principles as outlined in the Agassiz Lowlands SFRMP. Within the flexibility afforded, as stand level SFRMP management objectives are determined, consideration to economic return will be given greater consideration.

Action resulting from this Comment:

Extension implementation training for field staff will emphasize when preparing management objectives for trust land stands occurring on the Three-Year Stand Exam List, greater consideration be given to the fiduciary responsibility in trust land management held by the Department. The training will recognize that the Department's responsibility includes long term economic returns and vegetative management reflecting sound natural resource conservation and management principles.

4. Specific comments related to:

Identification of ecologically important lowland conifers and impacts on harvest volumes.

Comment:

4.1 *“Ecologically Important Lowland Conifers: The proposed management actions significantly increase the amount of EILC. These acres will not be managed and are removed from timber management consideration. MTPA (MFI) does not support this action.”*

Comment:

4.2 *“Further, the DNR has failed to provide significant data and analysis the importance of these areas and where they are not being provided.”*

Response

- The rationale for identifying and reserving ecologically important lowland conifer (EILC) in the Agassiz Lowlands is that in designating old growth stands through the *1994 DNR Old Growth Guidelines* process old growth lowland conifer were not included. The Department has directed staff to identify EILC stands and reserve them from harvest until old growth lowland conifers are defined and incorporated in the *DNR Old-Growth Forest Guideline*. Acres of EILC are not removed from the commercial timberland base for the purposes of determining desired treatment levels. Stands within EILC sites are reserved from harvest for the SFRMP plan implementation period, thus shifting the desired level of harvesting during that time period to other lowland conifer stands outside these identified EILC stands.
- Identification of specific EILC stands does not reduce overall treatment acres of these cover types (i.e., EILC acres are included in cover type acres used to determine desired treatment levels). Identification of EILC only removes these specific stands from the management pool for the current planning period.
- The original 7-year AL SFRMP indicated that EILC should range from 4% to 8% of lowland conifer covers types. Less than 4% of these cover types were actually identified in the original 7-year plan.
- The Department determined that additional EILC acres should be identified and reserved from treatment during implementation of the Three-Year Extension.

- Additional EILC acres identified totaled 6.7% of lowland conifer cover types and is within the range recommended in the original 7-Year AL SFRMP.
- Although additional EILC acres were selected, the vast majority (79 percent) are stagnant stands. An analysis of the EILC acres added includes the following:
 - 79 percent of the new EILC added are stagnant stands;
 - of the remaining 21 percent:
 - 9 percent are directly adjacent to a designated SNA. In addition these stands were greater than one mile from a road (thereby offering poor access options);
 - 6 percent are white cedar which is highly valued as wildlife habitat;
 - 6 percent are within outstanding biodiversity areas or in close proximity to old growth stands.

Removal of these timberland acres however does not reduce the overall treatment level for the lowland conifer cover types; the treatment level is simply shifted to other non-EILC designated lowland conifers.

- Stands selected as EILC should be examples of high-quality native plant communities, represent the range of lowland conifer native plant communities found in the subsection, and be distributed in a representative fashion across the LTAs in the subsection (e.g., if a particular lowland conifer community type is found mostly in certain LTAs, then most of the acres of that type chosen as EILC should be in those LTAs). In designating specific stands as EILC, examples of wildlife species that will benefit include great gray owl, hawk owl, Connecticut Warbler, spruce grouse, northern bog lemming, and wintering yards for white-tailed deer.
- By Commissioner's Office directive, SFRMP planning processes are to identify EILC and to defer these stands from treatment during the SFRMP plan implementation period. Stands deferred as EILC will be reviewed for continued protection at the beginning of the next cycle of subsection planning based on the old-growth forest *Guidelines* or other guidelines in place at that time.
- The purpose of identifying EILC is to identify specific stands and reserve them from treatment until old growth standards for these cover types can be developed. Once these standards are developed and applied to the inventory, non-old growth EILC stands will be released back to the management pool and considered in future planning efforts.
- The Three-Year Extension is an "extension" of the original 7-Year AL SFRMP. The original AL SFRMP indicated that EILC should range from 4% to 8% of lowland conifer covers types. The result from the original AL SFRMP EILC process was that less than 4% of these cover types was identified. To complete the Three-Year Extension, the Department has determined that additional EILC acres should be identified and reserved from treatment during implementation of the three-year extension. The EILC acres identified total 6.7% of lowland conifer cover types and is within the range recommended in the original 7-year AL SFRMP.

Action resulting from the Comment:

The relationship of EILC, treatment levels, and old growth standards has been further emphasized in the Final Agassiz Lowlands Three-Year Extension Document.

Examples of species benefiting from designation of EILC have been added to the Three- Year Extension document.

List of organizations and individuals that submitted Comments on the Draft Agassiz Lowlands SFRMP Three-Year Extension

The following individuals / organizations have submitted comments on *the Draft Agassiz Lowlands SFRMP Three-Year Extension*, dated January 2010.

1. Ray Higgins, Director of Operations, Minnesota Timber Producers Association, letter dated February 28, 2010.
2. Tim J. O'Hara, Vice President of Forest Policy, Minnesota Forest Industries, letter dated February 28, 2010.