

5. Monitoring

As this subsection plan is implemented, the monitoring of forest management activities that apply the general direction and associated strategies in this plan to move toward the desired future forest composition goals is important. Many forest management activities are currently tracked, such as cover type acres treated, treatment methods and acres, timber volumes sold and harvested, and regeneration methods, species, and success. Some management activities and objectives are not readily tracked, such as stand composition changes. Following are the annual reviews and tracking of stand treatments that will be used to monitor the implementation of this plan.

5.1 Annual Stand Examination Plan Review

Each year as annual harvest plans are developed from the subsection plan, Wildlife, Fisheries, and Ecological Services staff are provided an opportunity to review and provide additional input to forestry staff regarding stand treatments. The annual harvest plans are based on the state's fiscal year, July 1 – June 30. They are typically prepared and reviewed during the fall prior to the beginning of the fiscal year. During the SFRMP stand treatment review and/or annual harvest plan reviews, other divisions are provided an opportunity to identify stands where they would like to participate in a joint field visit/stand evaluation. The forestry archaeologist reviews annual harvest plans for known or suspected cultural resource locations. These review opportunities are also provided for annual plan additions (i.e., stands added during the year due to windthrow salvage, new information about a stand, etc.). A public review process is included for both the annual plans and additions.

5.2 Stand Treatments and Monitoring

Approximately one-tenth of the stands selected for treatment in the plan will be field visited each year of the 10-year plan. Final stand treatment prescriptions will be determined after the field visit/stand examination is completed. Prescriptions and objectives assigned to stands during the SFRMP planning process are preliminary and may be adjusted based on current stand conditions and other information and input at the time of the stand examination.

After timber sales are sold or forest development projects are contracted, forestry staff administer timber harvest permits, forest development projects (e.g., site preparation and tree planting), and road projects as the work is completed. Forestry staff regularly check these activities to ensure that permit regulations and contract specifications are being met. In addition, standardized timber sales inspections are completed (by other staff) on at least 10 percent of active timber sales each year. The application of site-level forest management guidelines (e.g., riparian management zone guidelines) is checked during permit and contract supervision and inspections.

The MFRC site-level monitoring will periodically sample sites in these subsections as part of the monitoring program at the statewide level. The objective of this statewide monitoring program is to evaluate the implementation of the Voluntary Site-Level Forest Management Guidelines through field visits to randomly selected, recently harvested sites distributed across the various forestland ownerships (state, county, national forest, tribal, forest industry, non-industrial private

lands, etc.) in the state. The monitoring results from sites on state lands in these subsections can be used to evaluate the application of site-level guidelines.

It is often not possible to see the results of prescriptions and objectives assigned to stands for many years. Many of the treatments assigned to stands in this plan may not be accomplished until after the 10-year plan is over. Some reasons are: 1) a portion of the stands identified for treatment won't be field examined (and for many, offered for sale) until late in the 10-year planning period, 2) the harvest of timber sales occurs up to 5 years after the sale date, 3) forest development activities may be needed to regenerate the site to the desired species after the timber sale harvest is completed, 4) desired structural changes in stands may take many years or decades to occur, and 5) forest inventory data may not capture the forest stand composition components or changes for many years or capture it at all. Because of this, stand management objectives (See Appendix J) have been developed to record the intent or objectives of stand treatments. Preliminary objectives may be assigned to some stands during the SFRMP process (in this plan, primarily in MCBS sites of Outstanding and High biodiversity significance) to provide preliminary guidance for the appraiser to consider during the on-site stand evaluation. Final objectives will be assigned after the stand examination/appraisal for a timber sale or other treatment is completed. The assignment of objectives to stands will allow us to capture the intent of the various stand treatments on an annual basis for monitoring the implementation the plan. This will help determine if strategies are being applied and if management objectives and goals are being met during the periodic reviews that occur during the time span of the 10-year plan.

There are three primary systems that will be used to track stand treatments. They are the Forestry Inventory Module, Silviculture and Roads Module, and the Timber Sales Reporting System (this will be replaced by a Timber Sales Module, being developed as a part of FORIST, which is scheduled to be operational in 2006). All three modules are (will be) a part of the **FOR**estry **I**nformation **S**ys**T**em (FORIST), which is a collection of integrated spatial applications and datasets supporting day-to-day forest management operations by the Division of Forestry.

The Forest Inventory Module (FIM) is where the DNR forest inventory is maintained. It 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 division's lands included in the inventory. In the field, foresters collect plot and tree data. Those data are summarized as stand-level data that are linked to a spatial representation of stand boundaries.

The Silviculture and Roads Module (SRM) provides a database and application through which field foresters can record planned and actual harvest and forest development prescriptions, management objectives, and follow-up surveys. SRM supports the geographic description of the extent of a harvest sites and development project separate from FIM stand boundaries. A variety of maps and other reports can be generated. SRM will also produce maps and reports that roll up forestry administrative area data to the regional or statewide level, and also to the subsection level.

The timber sales system reporting system tracks information on timber sales such as volume and value by species and acres sold. The Timber Sales Module (TSM) will cover every aspect of

timber sales from appraisal through the closure of sales. It will replace the existing Timber Sales and Electronic Scale Reporting systems. It will be interfaced with FIM and SRM.

In Table 5.1a, the first column provides a listing of general directions (e.g., increase, decrease, and maintain) and DFFC goals (e.g., acres of a cover type and acres treated; measurable goals) that are included in the plan. Columns 2 and 3 provide the method(s) for tracking the implementation of the general directions and goals. Implementation of general directions and strategies will primarily be tracked by the objectives (i.e., intended outcomes) assigned to stands. Movement toward DFFC goals will primarily be tracked by prescriptions and objectives assigned to stands (SRM actions and objectives) and eventually through changes in the forest inventory (FIM). *At this time, this monitoring plan is in the development phase, so some revisions may be made.*

SFRMP Region Coordinators will assemble implementation information from the above systems and sources by subsection annually and send summaries to the subsection team. Subsection teams will decide if a meeting is needed to discuss implementation levels or the need for plan amendments to address substantial changes in forest conditions or DNR policies. Even in the absence of plan updates, subsection teams will probably need to meet at least once every two years to monitor plan implementation. If there are substantial changes from the plan and a plan update is needed, the subsection team will revise the plan and provide an opportunity for public review.

Table 5.1a: SFRMP Implementation Monitoring – North Shore Subsections (Draft 10-15-04)

Objective	Monitoring Source 1	Monitoring Source 2
Biological Diversity, Forest Composition, and Spatial Distribution		
Old forest percent	FIM	
Effective ERF	FIM	
Old forest in riparian area	SRM - objectives	
Increase long-lived conifers	SRM – objectives	SRM-species planted or seeded
Natural succession	SRM – objectives	SRM action
Retain old forest components	SRM – objectives	
Cover type conversions (+ or -)	SRM – objectives	FIM
Maintain cover type	SRM – objectives	FIM
Increase mixed forest components	SRM – objectives	
Change within stand structure	SRM – objectives	
Large patches- maintain or increase size	SRM – objectives	Patch shapefiles
Patch age class	FIM	Patch shapefiles
Patch size class	FIM	Patch shapefiles
Apply variable density	SRM – objectives	
Apply variable retention	SRM – objectives	
Protect, sustain, or enhance existing statewide biodiversity significance	SRM – objectives	MCBS survey
Use prescribed fire	SRM – objectives	SRM action

Objective	Monitoring Source 1	Monitoring Source 2
Protect rare native plant community	SRM – objectives	
Protect rare feature	SRM – objectives	
Maintain NPC composition and structure	SRM – objectives	
Use less intensive site prep	SRM – objectives	SRM – method
Age-Class Distribution		
Move toward balance age-class distribution in even-aged cover types	FIM	
Declining age-class structure in ERF	FIM	
Provide representation of older growth stages	SRM – objectives	
Provide young forests (0-30 age class)	FIM	
Within-Stand Composition and Structure		
Selective harvest of stands	SRM action	
Change within stand species composition	SRM – objectives	FIM
Change within stand structural composition	SRM – objectives	
Natural succession	SRM – objectives	SRM action
Increase target species	SRM – objectives	SRM (species), FIM
Maintain NPC using ECS guidance	SRM – objectives	
Wildlife Habitat		
Old forest amount and distribution	FIM	
Young forest amount and distribution	FIM	
Patch management	FIM	Patch shapefile
Leave/reserve trees	SRM action	
Increase long-lived conifers	SRM – objectives	
Apply special management considerations for selected species (e.g., wood turtle nesting sites)	SRM – objectives	
Within stand diversity and structure	SRM – objectives	
Riparian and Aquatic Areas		
Long-lived conifers in riparian areas	SRM – objectives	
Maintain or increase old forest	SRM – objectives	FIM
Maintain shade to trout streams	SRM – objectives	
Timber Productivity		
Move toward harvest at normal rotation age	FIM	
Field visit/treat all HRLV stands	SRM action	
Thin stands	SRM action	
Forest Pests, Pathogens and Exotic Species		
Identify and monitor insect, disease, and harmful exotic species populations	Forest health monitoring	
Wildlife damage protection	SRM action	
Visual Quality		
Apply MFRC site-level forest management guidelines	Timber sale inspections	MFRC guideline monitoring
Harvest Levels		
Harvest prescriptions applied by cover type	SRM action	
Deferred treatment	SRM action	

Objective	Monitoring Source 1	Monitoring Source 2
Alteration treatment	SRM action	
Manage for the understory treatment	SRM action	
HRLV treatment method	SRM action	SRM objectives
Annual treatment acres by prescription	SRM report	
Special product permits	Timber sales report	
Volume sold	Timber sales report	
Value sold	Timber sales report	
Acres sold	Timber sales report	
Access to State Land (if road added to road inventory)		
Miles of new roads	SRM action	
Road class	SRM action	
Post-sale treatment of roads	SRM action	
Road permits	SRM action	
Cultural Resources		
Protect cultural resources	SRM - objectives	Archaeologist review
Disturbance Events		
Small scale (10's acres)	Annual plan additions	
Large scale (100's – 1000's acres)	Plan review	
Regeneration after harvest		
Regeneration method – natural or artificial	SRM	FIM
Site preparation method	SRM	
Regeneration species	SRM	FIM
Survival and growth	SRM	FIM

