

**Monitoring Question**

*To what extent do timber output levels, location of timber harvest and the mix of saw timber and pulpwood products compare to plan projections ?*

**Monitoring Conducted**

Timber Activities and Commercial Wood Harvest

**Objective. O-TM-1.** Provides commercial wood for mills in Northern Minnesota. Material is harvested from the NF to supply sawmills, veneer mills, paper mills, & mills constructing engineered wood products. The Forest also provides posts, poles, & logs for log home construction.

Between October 1, 2005 and September 30, 2006 the SNF awarded 57,295 MBF within twenty timber sales to meet vegetative objectives on 6088 acres (Table 1). Actual volume harvested for this period was 32,445 MBF. Actual area harvested during 2006 was 4049 acres. FY 2006 had the highest volume sold and under contract since the Revised Forest Plan was approved in 2004 (See Figure 1). However volume harvest was lowest in 2006 because of a major downturn in the timber market. The Forest had eight sales that received no bids which amounted to 22,700 MBF. Of the awarded sales, two had harvesting that totaled 103 acres or 1,100 MBF during this time frame.

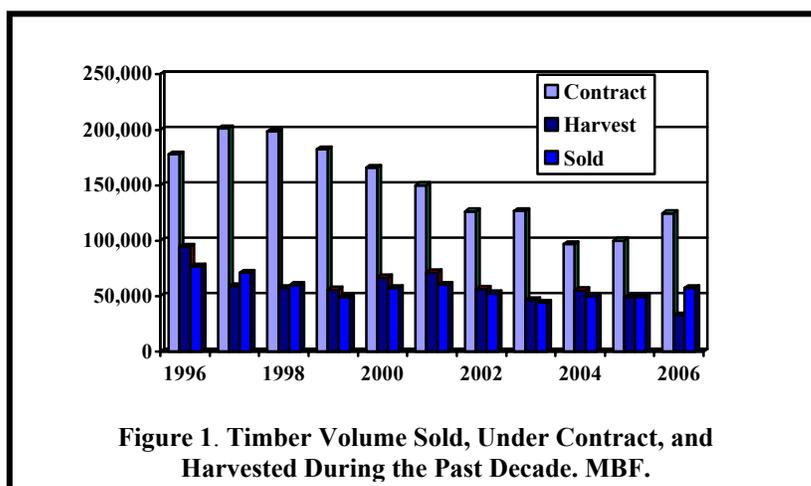


Figure 1. Timber Volume Sold, Under Contract, and Harvested During the Past Decade. MBF.

**Table 1. FY 06 Timber Program. Sold and Harvested Volume & Acres (Includes sales planned & sold under 1986 Forest Plan and Revised Forest Plan)**

Revised FP Expected Outcome (Annual)		Sold		Harvested	
MBF	Acres	MBF	Acres	MBF	Harvested Acres
102,000	13,200	57,295	6088	32,445	4049

**Table 2. FY 06 Timber Program. From NEPA Prepared During Revised Forest Plan Period Only (2006)**

Est Avg Annual Vol MBF	Estimated Volume MBF	Estimated Treatment Acres	# of NEPA Documents
102,000	16,666	4,022	2

In addition to treatments accomplished, two projects covered by FY 2006 NEPA decisions would provide the opportunity to harvest 16,600 MBF on 4022 acres. Values shown in tables 1 and 2 will be adjusted annually to reflect actual treatment acres and volume. Other timber activities such as reforestation, timber stand improvement (TSI), plantings, and animal control resulted in an additional 10,800 acres of timber management being accomplished. See Section 11 Social & Economic for saw-timber/pulpwood harvest mix discussion.

<b>Treatment Type</b>	<b>Acres</b>
Reforestation 1/	5,596
Timber Stand Improvement 2/	4,121
Inland Fish Tree Planting	<10
Animal Control	1200
<b>Total</b>	<b>10,810</b>

1/ Planting, seeding, site preparation for natural regeneration  
2/ Precommercial thinning, release, pruning

Stewardship Contracting

There were no stewardship contracts awarded during 2004 or 2005. In 2006 two stewardship contracts were offered but there were no successful bidders, in addition the SNF planned for three stewardship contracts for FY 2007.

**Monitoring Question**

*Are harvested lands adequately restocked within 5 years after clearcutting or final removals in seed tree or shelterwood harvest?*

Restocking

*(36 CFR 219.12(k)[5][i] and 36 CFR 219.27(c)(3). Lands are adequately restocked as specified in the forest plan.*

During 2006, 4,629 acres were certified as restocked and 3,672 acres harvested but not certified as of September 30, 2005. The balance of harvested acres needing certification is 1,013 acres. See Table 4 for clarification.

<i>A Acres needing certification for stocking as of 09/30/2005</i>	<i>B Additional stocking needs* (acres) generated 10/01/2005 thru 09/30/2006</i>	<i>C Acres certified as being adequately stocked 10/01/2005 thru 09/30/2006</i>	<i>D Balance of acres needing certification as being adequately stocked as of 09/30/2006</i>
3,672	1,970	4,629	1,013
			<b>Column A (+) column B (-) column C = D</b>

**Monitoring Question**

*How much even-aged management (especially clearcutting) should be used, and in what forest types should it be used?*

Proportion of Clearcutting

*Forest Plan TABLE APP-D3 p.D-3 and EIS Table 2-9 p2-31. Clearcutting Proportion in actual and Proposed Harvest Treatments.*

During 2006 approximately 60% of vegetative treatments were clearcut compared to 88% clearcut during 2005. When harvests approved within FY 2006 decisions are included with completed harvests, the estimated percent of vegetation treatments being clearcut drops to 59%. These percentages are best estimates and can change if actual treatments deviate somewhat from planned treatments because of unexpected inherent site conditions.

## Large Patch Temporary Openings

**(36 CFR 219.12(k)[5][iii]:** “Maximum size limits for harvest areas are evaluated to determine whether such size limits should be continued.” **Standard S-TM-2.** Harvest using even-age regeneration methods (clearcutting, seed tree, shelterwood) may create a temporary forest opening no larger than 1,000 acres in size.

**Objective O-VG-20.** Create large patch temporary openings up to 1,000 acres through management activities. (For monitoring temporary openings a large patch is defined as a patch greater than 300 acres). **O-VG-21** Increase average size of temporary forest openings. Reduce amount of forest edge created through vegetation management activities, while still retaining a range of small patches and edge habitat.

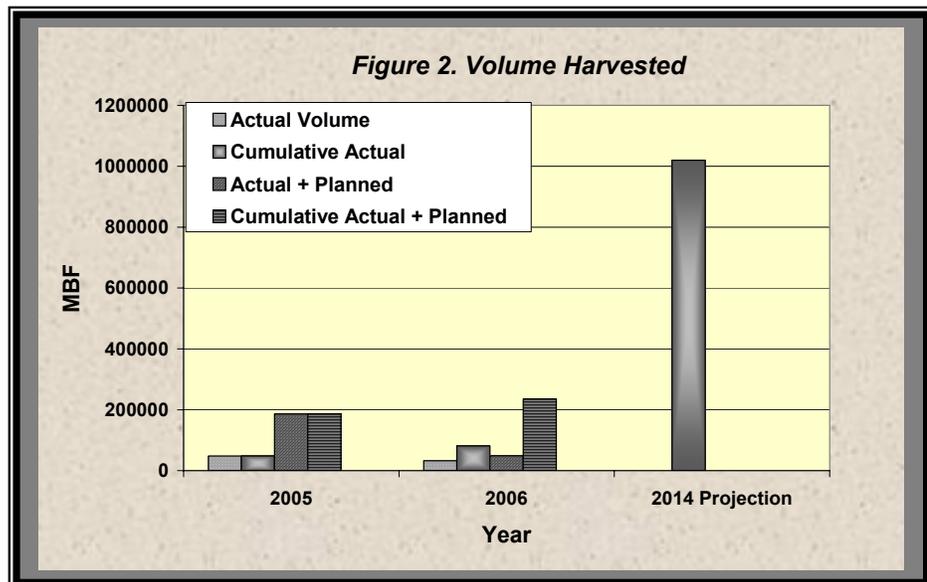
During 2006 parts of nine sales intended to implement the Forest Plan were harvested and no resultant temporary openings were larger than 300 acres. In 2006, the average temporary opening was 32 acres (42 acres in 2005), the largest temporary opening was 164 acres, and the smallest opening was 7 acres.

When the 2006 actual treatments are combined with adjacent existing young stands (0-9 years old), the largest patch identified was 239 acres. However as reported last year when approved 2005 decisions are implemented, 8 patches greater than 300 acres will be created for a total of 4,218 acres. The two decisions approved in 2006 but not yet implemented are the Inga South and Upper Caribou projects. The largest even-age regeneration patch in those two projects will be 152 acres.

## Evaluation and Conclusions.

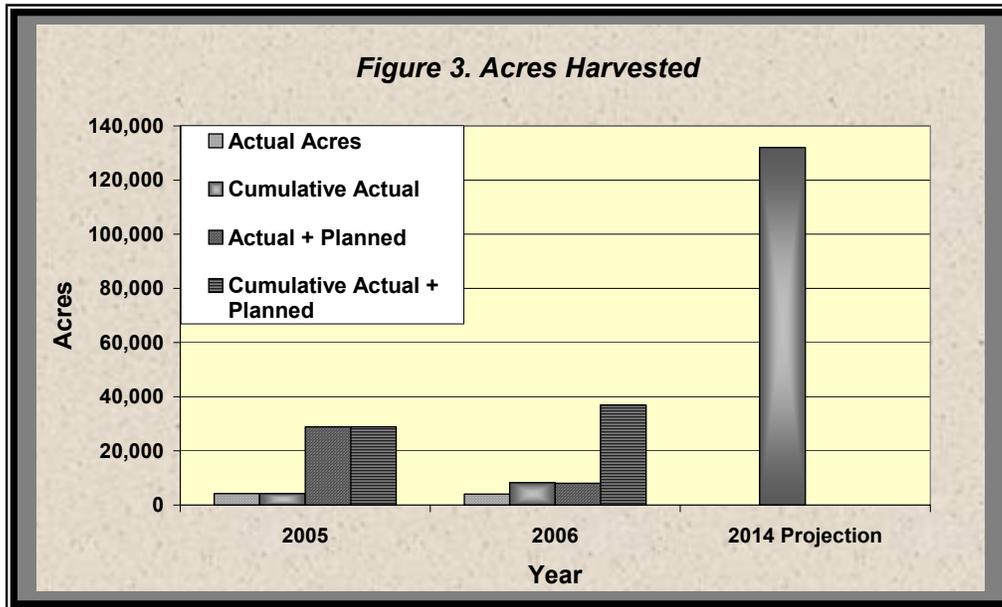
### Timber Activities and Commercial Wood Harvest

The Forest Plan projects that by the end of Decade 1 (2014), a maximum of 132,000 acres will have been harvested resulting in a maximum of 1,020,000 MBF. During 2006 the SNF awarded 57,295 MBF within 20 timber sales to address vegetative objectives on 6,088 acres. Actual volume harvested to date was 32,445 MBF or 57% of volume sold and actual acres harvested to date was 4,049 acres or 67% of acres planned. However, this doesn't reflect all the volume and acres that are under contract to be harvested in the future. In FY 2005, the



percentages for volume and harvest were 99% and 78% respectively. The large difference between 2005 and 2006 can be attributed to a downturn in the timber market as previously discussed. To date 8,369 acres or 6% and 81,035 MBF or 8% of the decade 1 projection have been harvested since 2004 (See Figures 2 & 3).

When vegetative treatments planned in approved 2005 and 2006 project decisions are fully implemented, the total area harvested will be 36,200 acres and the total volume produced 229,000 MBF. At the end of FY 2006, the FP was 20% through the scheduled 10 year implementation period (2014). When vegetative treatments planned in approved 2005 and 2006 project decisions are fully implemented, approximately 27% and 22% of the Decade 1 harvest acres and harvest volume projections respectively will have been achieved. Subsequently, the trajectory of actual and approved volume harvested and acres treated coincides where the SNF should be 20% through the planning period.

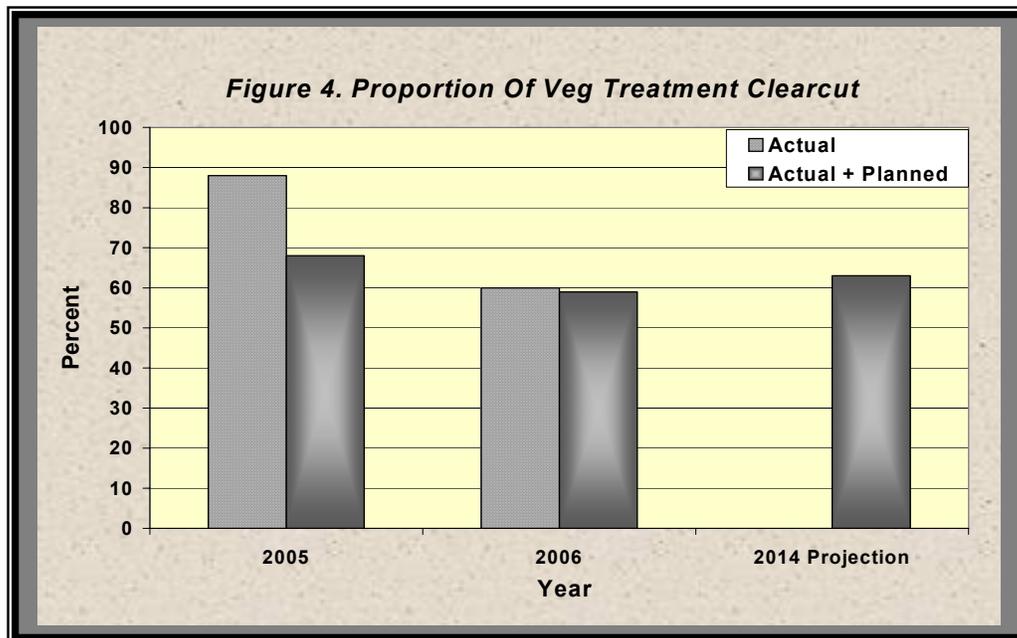


Restocking

The Decade 1 Desired Condition is that lands are adequately restocked following vegetation treatments. The Forest is meeting the NFMA obligation to adequately restock within 5 years following final harvest. Fifth year stocking surveys under the Revised Forest Plan (2004) are to begin in FY 2009.

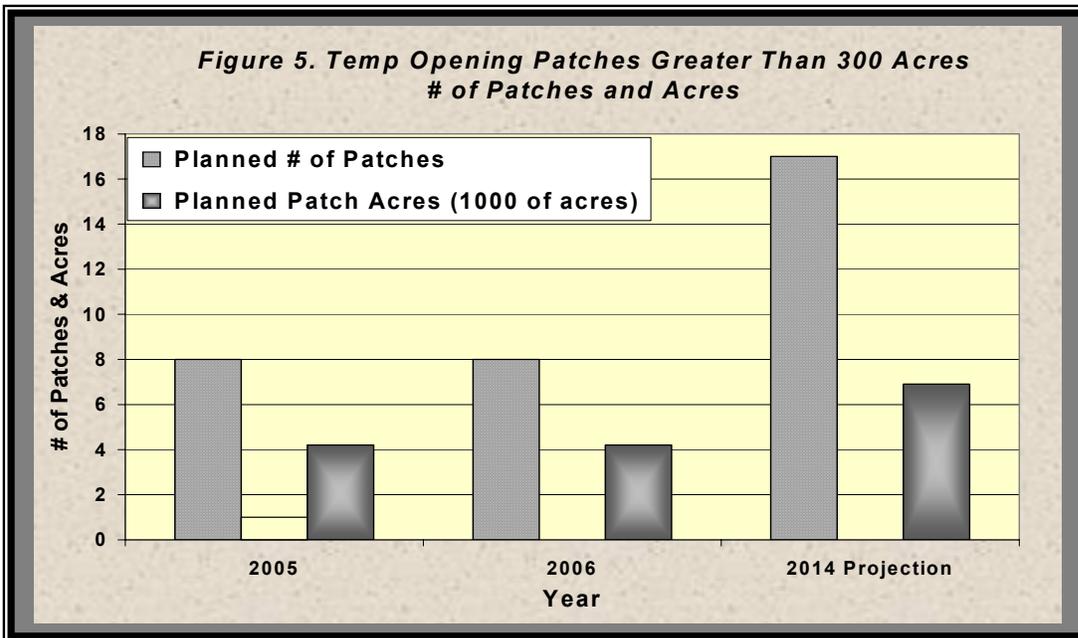
Proportion of Clearcutting

The percentages are trending towards the Decade 1 projection of 63% total acres treated to be clearcut. These percentages are best estimates and can change if planned harvest treatments change because of unexpected inherent site conditions. See Figure 4.



## Large Patch Temporary Openings

Approximately 110 temporary openings including those implemented in 2006 were identified in the Forest's database. Of these, 15 resulted from decisions made since approval of the Revised Forest Plan and the remaining openings were young stands originating from older project decisions. None of the patches even when combined with adjacent existing young stands were larger than 300 acres. However when approved 2005 and 2006 decisions are fully implemented in 2007 and beyond, 8 patches greater than 300 acres will be created for a total of 4218 acres. See figure #5.



## Standards and Guides

Approximately five applicable Standards and Guides were monitored during 2006 and all were successfully met and addressed environmental effects as predicted. Three of the Guides (G-TM-3, G-TM-5, S-TM-4) involved clearcutting and two dealt with Land Suitability and timber production (G-TM-1 and S-TM-1).

## **Necessary Follow-up and Management Recommendations**

After reviewing monitoring findings, the Forest IDT identified six follow-up actions and three management recommendations to carry forward during FY 2007. The key follow-up actions and management recommendations are:

### **Follow-up Actions**

- \* Unsuitable lands (such as inoperable, steep slopes, ELT 18's, etc) must be addressed as part of the analysis and implementation. If unsuitable lands are identified, ensure any changes in suitability are documented in NEPA decisions & appropriate databases.

- \* Where applicable implement and monitor large patch openings (300-1,000 ac) to provide for increased average size while reducing the amount of “edge” and retaining a range of opening sizes and edge habitat.

### **Management Actions**

- \* Improve data collection and data management during NEPA project planning. Insufficient data collection & field reconnaissance during the NEPA analysis has resulted in actual treatment acreage 20-25% less than planned. (i.e. inaccurate crown closures, mistyped stands).
- \* Improve the incorporation and implementation of design features and mitigation in vegetation project planning and implementation. Better incorporating design features and mitigation measures during project NEPA analysis will reduce overestimation of treatment acres.
- \* Within lowland black spruce treatments re-evaluate regeneration success 7 or 8 years following treatment. Monitoring has shown that spruce regeneration within lowland black spruce stands are difficult to document because of small size and become more apparent 7 to 8 years following treatment. These supplemental surveys will allow managers to better assess the effectiveness of silvicultural prescriptions and harvest operations.

## **Collaborative Opportunities To Improve Efficiency And Quality Of Program**

### ***Partnerships***

The primary stakeholders involved to implement timber management on the SNF were contractors associated with Stewardship contracts. No Stewardship contracts were awarded in 2006.

### **Summary Points**

- \* FY 2006 had the highest volume sold and under contract since the Revised Forest Plan was approved. However volume harvest was less in 2006 because of a major downturn in the timber market. The Forest had eight sales that received no bids which amounted to 22.7 MMBF.
- \* The SNF awarded 57,295 MMBF within twenty timber sales on 6,088 acres but actually harvested 32,445 MBF on 4049 acres.
- \* To date 8,369 acres or 6% of the Forest Plan projected Decade 1 acres and 81,035 MMBF or 8% of the projected Decade 1 volume has been harvested since 2004.
- \* When vegetative treatments planned in approved 2005 and 2006 project decisions are fully implemented, a total of 36,000 acres or 27% of Forest Plan Decade 1 projections and 229 MMBF or 22% of Decade 1 will have been achieved
- \* During 2006 4,629 acres were certified and 3,672 acres harvested but not certified.
- \* During 2006 approximately 60% of vegetative treatments were clearcut compared to 88% clearcut during 2005. When treatments planned within approved 2006 decisions are included with actual treatments, the estimated percent of vegetation treatments being clearcut drops to 59% which is trending towards the Forest Plan Decade 1 projection of 63% acres treated to be clearcut.
- \* Neither treatments within actual harvest units nor harvest treatments combined with adjacent existing young stands created young patches that approach 1,000 or even 300 acres. However when approved 2005 decisions are implemented, 8 patches greater than 300 acres will be created for a total of 4,218 acres.
- \* Approximately five applicable Standards and Guides were monitored during 2006 and all were successfully met and addressed environmental effects as predicted.

\* There is a need to Improve data collection and data management during NEPA project planning because insufficient data collection and field reconnaissance during the NEPA analysis has resulted in actual treatment acreage 20-25% less than planned.