2003 Minnesota Decorative Spruce Top Production and Market Survey

Minnesota Department of Natural Resources
Division of Forestry
500 Lafayette Road
St. Paul, Minnesota

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Several public land managers, spruce top retailers and harvesters were very gracious with their time in responding to surveys.

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- Minnesota Department of Natural Resources, Division of Forestry
- John Krantz, Krantz Consulting

The report was prepared by:

Keith Jacobson, Minnesota DNR-Forestry

Review and editing assistance were provided by:

Lynn Mizner, Tom Baumann, Craig Sterle, Roger Nelson, Dick Rossman and Doug Ford, Minnesota DNR-Forestry

Executive Summary

The spruce top decorative industry in Minnesota is driven by demand for seasonal decorative items around the Christmas holiday season. Spruce top sales can be a good way to generate revenue from stands that might not provide other economic returns, yet there are workload and environmental issues with continuing these types of sales.

Most spruce top harvest takes place on low productivity spruce stands on public lands. Harvest typically takes place during October and November on wet sites when the ground is unfrozen.

More information about the spruce top market was needed to effectively manage it. A study was therefore designed with objectives of:

- Determining market size to find out how many tops need to be sold on an annual basis to sustain the industry.
- Determining different landowner and land manager's relative importance in supplying raw material for the industry.
- Determining if market demand is likely to continue, since this market has been highly cyclical in the past.
- Determining where opportunities exist to even out the supply (spruce top sale) workload among DNR Forestry Areas.

A survey of public land managers, spruce top harvesters and spruce top retailers was conducted largely during March of 2004.

Results:

<u>Annual Retail Market Size:</u> For 2003, there were approximate retail sales of 600,000 to 650,000 spruce tops in Minnesota*. Most of these were sold by landscape nurseries such as Bachman's, Gerken's and Linder's. Some were also sold by grocery and home improvement stores such as Menard's, Cub Foods and Home Depot.

*Annual retail sale estimate contains estimated figures for several retailers that did not respond to the survey.

<u>Public Agency Supply Figures</u>: Public land management agencies sold approximately 743,500 spruce tops in 2002 and 445,400 spruce tops in 2003.

The report contains several recommendations for future study in order to promote sustainability of the resource and industry.

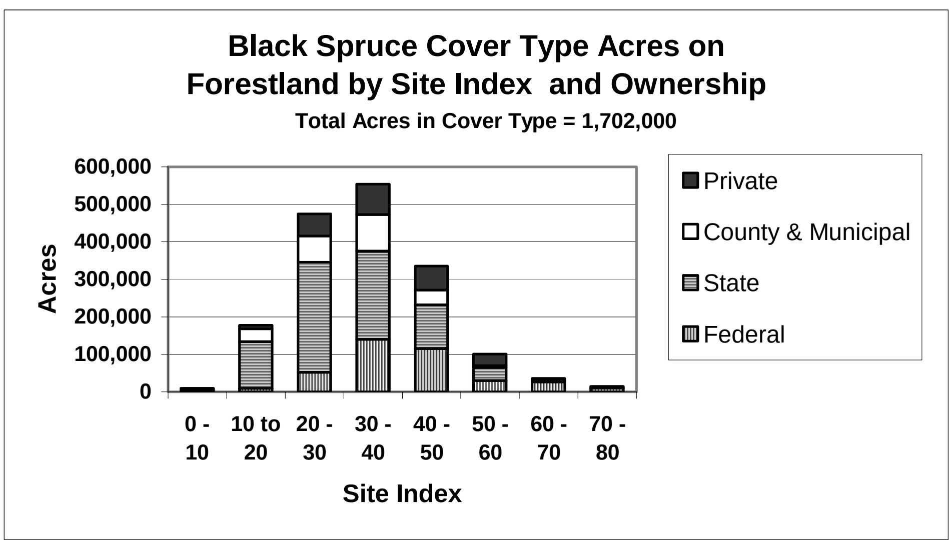
Overview of Minnesota's Spruce Top Resource and Decorative Industry

The spruce top decorative industry in Minnesota is driven by demand for seasonal decorative items around the Christmas holiday season. The tops are most often retailed at landscape retailers and some large grocery and home improvement stores in the Twin Cities area, and in some communities in greater Minnesota. Tops are often either sold wrapped in bundles of 10 or placed in pots, and can retail from $.90/ piece and up, depending on if potting or other value-added activity has taken place.

The market for spruce tops has been highly cyclical in the past. There was a strong market in the 1930s and again in the early 1960s. The market had been almost dormant since the 1960s until roughly 8 years ago, when activity began to pick up.

The majority of the spruce top resource comes from areas of "stagnant" or slow-growing black spruce with a site index below 20. A small amount of the supply comes from productive, young spruce stands during early thinning operations. Harvests typically remove no more than 1/3 of tops in a given stand, and repeat harvesting of stands is thought to be possible every 10 to 15 years. Size of harvested tops is usually limited to 3 to 4 feet in maximum length. Landowners receive $.20 to $.30 apiece on average when selling spruce tops. Unlike the state's balsam bough industry, the spruce top market is supplied by a handful of harvesters – probably fewer than a dozen statewide.

Public land, especially land owned by the State of Minnesota, contains the majority of the potential spruce top resource.



Source: 2002 FIA Inventory Database Provided by USDA Forest Service FIA Unit

Spruce top sales can be a good way to generate revenue from stands that might not provide other economic returns, yet there are workload and environmental issues with continuing these types of sales. Harvest typically takes place during October and November on wet sites when the ground is unfrozen. The short harvest window is dictated by the need to provide freshly cut tops to the market, but great care must be taken to avoid potential environmental damage from rutting during harvesting operations.

Study Purpose

Spruce top sales and the decorative industry they support have a positive impact on the Minnesota economy. However there are workload and environmental issues associated with continuing spruce top sales.

More information about the spruce top market was needed to effectively manage it. This study was designed to determine some of the information necessary to continue to provide for industry needs, while maintaining environmental quality. Additional study is needed to better determine appropriate sites for harvest and to analyze harvest and transport methods that minimize environmental damage.

Study Objectives

- Determine market size to find out how many tops need to be sold on an annual basis to sustain the industry.
- Determine different landowner and land manager's relative importance in supplying raw material for the industry.
- Determine if market demand is likely to continue, since this market has been highly cyclical in the past.
- Determine where opportunities exist to even out the supply (spruce top sale) workload among DNR Forestry Areas.

Study Application

The study has application for land managers whose land base contains a spruce resource, and for harvesters and retailers of spruce tops. The study could also have application for others who design future surveys for Special Forest Products. The study could have application beyond Minnesota, into other states or provinces with a spruce resource.

Methodology

A contractor (John Krantz) was hired to survey public land managers, spruce top harvesters and spruce top retailers. Funding for the survey was obtained through a USDA – Forest Service "Rural Development Through Forestry" grant. Copies of the survey forms appear in appendices A and B.

The survey was conducted largely during March of 2004. Surveys were completed for five retailers, two harvesters and 17 public land management agencies. Three other retailers and 5 other harvesters did not respond to contact efforts.

Retailers were identified by the contractor from personal knowledge. Harvesters were identified by DNR records of recent state spruce top sales. Public land management agencies surveyed included the State of Minnesota DNR, Superior and Chippewa National Forests and 14 County land departments.

Survey questions included:

- ❑ Asking spruce top harvesters and wholesalers their annual spruce top harvest (# of pieces) and location of harvest by county for years 2002, 2003, & anticipated 2004.

- Asking spruce top retailers who their suppliers were, and asking spruce top retailers to quantify their annual spruce top sales (in number of pieces) for years 2002, 2003 and anticipated 2004.

- Asking public forestland management agencies their annual spruce top sales (in number of pieces) for 2002 and 2003, and their anticipated sales for 2004.

Results

Annual Retail Market Size: For 2003, there were approximate retail sales of 600,000 to 650,000 spruce tops in Minnesota*. Most of these were sold by landscape nurseries such as Bachman's, Gerken's and Linder's. Some were also sold by grocery and home improvement stores such as Menard's, Cub Foods and Home Depot.
*Annual retail sale estimate contains estimated figures for several retailers that did not respond to the survey.

Public Agency Supply Figures:

Number of Spruce Tops Sold* by Public Land Management Agencies in Minnesota By Landowner and Year of Sale		
	2002	**2003**
Minnesota DNR	389,700	187,000
County Land Departments	353,800	258,400
National Forests	0	0
Total	**743,500**	**445,400**

*Tops are not necessarily *harvested* in the year they are *sold*. Buyers normally have up to 3 years to actually harvest the tops they have purchased at auction on public lands.

Number of Spruce Tops Sold* by Public Land Management Agencies in Minnesota By County Location and Year of Sale		
	2002	**2003**
Aitkin	301,100	139,200
Carlton	55,800	1,200
Itasca	195,000	37,400
Koochiching	11,000	1,900
Lake	21,100	0
St. Louis	159,500	265,700
Total	**743,500**	**445,400**

Other Findings:

- Most retailers said they could sell more tops if they had the supply. Some said they could sell many more. So while the market has been cyclical in the past, it shows no signs of slowing in the near future.

- The vast majority of the supply is retailed in Minnesota. Very little goes out of state.

- The vast majority of the supply comes from State DNR and County Land Department administered lands in the counties of St. Louis, Aitkin and Itasca.

- Several of the public land managers surveyed stressed that it is important to work with harvesters early and often to obtain a careful harvesting job.

- Site selection and harvesting and hauling equipment choices were stressed by several land managers and one harvester as being critical to preventing site degradation.

Recommendations

1) Further analysis is needed to:

a) Determine sustainable harvest levels.
b) Better define and identify sites that are most environmentally appropriate for harvesting *(Alan Jones of DNR will be convening a group to discuss how this can be done within the next year).*
c) Analyze harvesting and hauling equipment options *(Rick Dahlman of DNR is attempting to interest the Forestry Department of the Natural Resources Research Institute in undertaking a study of spruce top harvesting options).*

2) “Precommercial” spruce thinnings on productive sites can help take some pressure off the stagnant spruce resource, and accomplish management objectives in productive stands. It would benefit the spruce top market if land managers would look for early thinning opportunities in black spruce. Productive young stands can produce a second crop of spruce tops within 5 years of initial harvest.

3) There is experience in spruce top sale setup and administration in several DNR-Forestry Areas, and also in the St. Louis and Aitkin County land Departments. These land managers should be used by less experienced staff as a resource for information on how to set up and conduct spruce top sales to minimize environmental impacts. attempt

General Discussion

The cyclical nature of the industry (the previous significant market cycle was in the 1960s) has resulted in a situation where few field managers have experience in setting up and administering spruce top sales. This is rapidly changing. As the recent market has developed, expertise and experience among land managers has increased and should continue to improve.

Minnesota DNR has developed recommended supplemental terms for decorative tree harvests. The current recommended terms are contained in Appendices C and D. The reader should be aware that these recommendations are not final, but are evolving over time.

Supply is currently an issue constraining market expansion. This means that there will continue to be pressure on the resource and enforcement is likely to continue to be an issue.

The very narrow season of harvest is a major limiting factor for supply.

A consistent supply of tops is important to survival of the decorative industry. It is not possible to maintain an industry if raw material supply is inconsistent.

Environmental and workload concerns have been keeping some other potential suppliers (U.S. Forest Service and some county land departments) out of the supply market.

There are opportunities for more spruce top sales north and west of the traditional areas of Carlton, St. Louis, Aitkin and Itasca counties. Harvesters <u>will</u> travel for desirable sales.

Survey Design - Discussion and Recommendations

This study could serve as a "template" for designing future market studies of Special Forest products (SFP). For that reason, the following discussion and recommendations for future surveys is presented below.

- It was invaluable to have a contractor that is familiar with Minnesota's forest resources and the seasonal decorative industry doing the survey. The contractor assisted greatly with survey design and successful completion.

- For harvest location and ownership information, the survey relied heavily on information supplied by public land managers. Since the vast majority of the resource exists on public lands, this resulted in what are likely to be reasonable figures for location by county and land ownership of harvest. Any supply coming off of private lands (likely to be a tiny percentage of the total supply) was missed however, due to the reliance on public agency information.

- Retailers are for the most part unaware of the harvest county of the material they purchase. It is therefore recommended that if a future survey is done, a separate form be developed for retailers and harvesters. The form used to survey retailers should have questions 3, 4, 5 and 7 be stricken. Two questions should be added:

  1) How many suppliers do you purchase spruce tops from? (This was asked informally by the contractor, but did not appear on the survey form).
  2) If they were available, could you sell more spruce tops? (This was asked informally by the contractor, but did not appear on the survey form).

- Retailers were for the most part very cooperative. However future studies should rely more heavily on surveying harvesters as well as public land managers and retailers. The relatively small number of harvesters involved in the spruce top market and ease of identifying them through public timber sale records should make this a practical alternative. It is recognized that it was difficult to obtain information from harvesters (only 2 were successfully surveyed) but it is felt by those involved in the study that a concentrated effort could produce better results in future surveys. Limited funding forced us to concentrate survey effort on public land managers and retailers.

- While only 2 harvesters were interviewed as part of the study, we feel that the studies' data is valid. Here's why: For *annual supply* or "harvest" figures, we were able to rely on the public agency information on number of tops sold. The amount of spruce top resource that comes off of private land is small to none. The *retail market size* information came from extensive interviews with spruce top purchasers & retailers. Most of the major ones responded & were very knowledgeable & open with sharing their knowledge. Comparing the retail market size estimate and the annual public agency supply information results in figures that are similar. This lends confidence to the annual retail market size numbers - they make sense in light of our known supply information.

Appendix A Survey Form for Harvesters and Retailers

Minnesota's Spruce Top Resource - An Evaluation of Current Use

You received this survey because you were identified as a retailer or wholesaler of products made from spruce tops harvested in Minnesota. Information gathered during this project will only be published in an aggregate form; no individual company's information will be identified. Please help us improve our management of this important resource and support continued health of the forest and decorative industry that depends on it by answering the following questions:

Company Name ____

1. Please indicate the percentage of your spruce top business that fits into the following categories:

Percentage	**Business Activity**
___%	Spruce top harvester
___%	Spruce top buyer for Minnesota-based businesses
___%	Spruce top buyer for wholesalers or retailers located in other states
___%	Major purchaser and distributor of spruce tops and decorative items
___%	Small business selling direct to public or retail markets

2. Approximately how many pieces of spruce tops did you purchase in 2003?

From within Minnesota ____________ pieces
From outside Minnesota ____________ pieces

2a. In 2002, did you purchase:
-More ____ -Less ___ -About the same ___ number of pieces?

2b. In 2004, do you anticipate purchasing
-More ___ Less ___ -About the same ___ number of pieces?

3. County/ counties in Minnesota where spruce tops were harvested in 2003:

County	**Approx % of Total**
a. ______________	____%
b ______________	____%
c ______________	____%
d ______________	____%

4. Please estimate the percentage of your total spruce top resource that comes from the following land categories:

Landowner	**Approx % of Total**
a. County	____%
b State	____%
c Tribal	____%
d Private	____%

5. If you are a harvester, approximately how many tops did you sell to distributors?

6. If you are a major buyer and distributor, approximately how many tops did you purchase from harvesters in Minnesota?

7. Optional: How many people do you employ in your spruce top business?

Full-time seasonal employees	____
Part-time seasonal employees	____
Part-time seasonal spruce top harvesters supplying you	____

8. Do you favor expansion of this industry including additional spruce top auction sales and market development? Please comment.

9. Any other comments for us as we work together on sustaining our spruce resource and the decorative industry that depends on it? (use other side of sheet if more room needed):

Thank you for helping us improve our knowledge about this valuable Minnesota forest resource! Survey results will be available late in 2004.

Appendix B: Survey Form for Public Land Management Agencies

Minnesota's Spruce Top Resource - An Evaluation of Current Use

You received this survey as a land managing entity that sells or provides permits allowing spruce top harvest in Minnesota. Please help us improve our management of this important resource and support continued health of the forest and spruce top & decorative industry by answering the following questions:

1. How many spruce tops did your agency sell in 2002?
   ____

2. How many spruce tops did your agency sell in 2003?
   ____

3. How many spruce tops does your agency anticipate selling in 2004?
   -More ___
   -Less ___
   -About the same number ___

4. County or counties in Minnesota where boughs you spruce tops your agency sold **in 2003** were harvested:

County	Approximate percentage of total
a. ____________________	________________%
b. ____________________	________________%
c. ____________________	________________%
d. ____________________	________________%
e. ____________________	________________%
f. ____________________	________________%
g. ____________________	________________%

5. Any other comments for us as we work together on sustainably managing our spruce top resource and decorative industry?:
   ____
   ____
   ____
   ____
   ____

Thank you *for helping us improve our knowledge about this valuable Minnesota forest resource! Please call or email if questions. Survey results will be available later in 2004.*

Please return surveys by April 15 to:

Keith Jacobson
Minnesota DNR Utilization & Marketing Program Leader
651-296-6491
keith.jacobson@dnr.state.mn.us

Appendix C: Minnesota DNR Recommended Standard Procedures for Decorative Tree Sale Permit Supervision

NOTE: The Recommended Standard Procedures below are current as of January 10, 2005. The recommendations will continue to evolve and change over time.

1. Identify all fragile/sensitive areas (i.e., lagg and flowage areas) on the appraisal map. Avoid these areas if possible.

2. Specify access routes, landing areas to minimize site disturbance <u>and</u> visual impact.

3. Exercise close supervision on active permits, including using weekend sale visits to reduce potential theft and adverse site impacts.

4. Consider requesting periodic "fly-over" by Enforcement Officer Pilots to inspect for sale violations on active permits.

Standard Definitions for use with Decorative Tree Sale Permit Supervision

Lagg Area: A lagg is a zone where the water collects at the margin of a peatland, near the mineral ground surrounding the swamp site. The vegetation may include grasses, shrubs, and trees. Black ash and tamarack are often found in these areas.

Flowage Area: A flowage area is an open area out in a bog that is wetter than the surrounding forested portions of the bog. Grasses and low shrubs dominate these areas. This type of non-woody root mat is weak and easily torn.

Note: The wetter conditions in lagg and flowage areas make them more susceptible to severe rutting.

Standard Wording for the Special Conditions Entry on the Permit

Enter the following Special Condition as the only special condition on the permit (and in the Timber Sales System).

> SUPPLEMENTAL TERMS AND CONDITIONS ON THE PAGE ATTACHED TO THIS PERMIT ARE INCORPORATED HEREIN BY REFERENCE

NOTE: Terms and Conditions included on the supplemental page do not need to be included on the E-121 Appraisal Report (although an extra [2nd] copy of the supplemental page should be given to the permittee and should be attached to the E-121). *Also, please note that this approach (the incorporation statement plus Supplemental Page) can be used with any permit.*

Appendix D: Minnesota DNR Decorative Tree Harvest Recommended Supplemental Terms and Conditions

NOTE: The Recommended Standard Procedures below are current as of January 10, 2005. The recommendations will continue to evolve and change over time.

NA-02130A (Rev. 8/03)

PERMIT TO CUT TIMBER

SUPPLEMENTAL TERMS AND CONDITIONS

Please Note: Any violation of these Supplemental Terms and Conditions may result in permit suspension or cancellation, and can result in charges of Timber Trespass (M.S. 90.151).

1. A pre-harvest meeting with the State's Timber Sale Administrator is required before beginning any harvesting operations.

2. Three working days (Mon. – Fri.) notice must be given to the Timber Sale Administrator before starting, or seasonally stopping or resuming, harvest operations on this permit.

3. Locations of all roads, landings and major skid trails must be pre-approved by the Timber Sale Administrator.

4. All cut trees must be scaled or counted by the State and the Permit Holder must give the State three days advance notice for any requested scaling.

5. Scaling is limited to two days per week (Mon. – Fri.) and all trees must be bundled and presented in a scalable manner. All bundles must contain the same number of trees and all trees in a bundle must be of equal length.

6. Rutting that results in cutting through or tearing up of the root mat, or churning up or exposing decomposing peat soils, for more than twice the length of the skidding equipment at any one location, is prohibited.

7. No more than two (2) rutted locations of any length will be permitted for every five acres of designated cutting area.

8. The width of any one skid trail or haul back trails in the sale area shall not exceed twice the width of the skidding equipment used on the permit.

9. Avoid crossing lagg (i.e., the open marshy fringe) and flowage (i.e., open, wet/grassy/brushy) areas; if such areas are crossed, the crossings must be made by the shortest practical route which approaches a 90 degree crossing to the long dimension of the lagg or flowage area.

10. If a lagg or flowage area must be crossed and the crossing exceeds 25 yards in length, the crossing must be covered with temporary matting or other suitable materials approved in advance of installation by the Timber Sale Administrator.

11. Permit holder must remove any man-made matting materials used for crossing lagg or flowage areas at the end of each harvest season and when all harvesting has been completed.

12. Additional Forest Resource Management Guidelines and Water Quality Best Management Practices may be required by the Timber Sale Administrator and will become effective when presented in writing to the permit holder, or the permit holder's agents or employees.

I have read, understand, and agree to comply with all the requirements as set forth in the Permit to Cut document and in these Supplemental Terms and Conditions.

PERMIT HOLDER SIGNATURE	DATE