Policy Recommendations Based on Research Results

The research described in this report indicates that strong markets exist for development of businesses in Minnesota based on the special forest products resource. These markets provide, in turn, new opportunities for a public/private partnership between the State and private woodland and timber owners.

The research for this project highlighted some key opportunities for Minnesota to provide added direction and incentive toward expanding forest products economic development in the state. The research also details how special forest products can help private woodland owners obtain maximum benefits and profits from the resources on their land.

The following policy recommendations are intended to achieve two basic directions: (1) They suggest policy actions the State of Minnesota can implement to facilitate the expansion of a special forest products industry; and (2) they are designed to help inform private industry of actions that will help them achieve their objectives.

Although policy recommendations in this section are specific for individual special forest products, research results indicate that the state and landowners share six concerns in common for all products. These are:

1. **Logging/Foraging Coordination:**

   As is true in most states throughout the U.S., Minnesota does not have a policy practice which results in the coordination of the activities of the solid-wood industry with other forest products activities in the state. Consequently, policies and practices do not take into account the variety of other solid-wood and special forest products that may be unintentionally destroyed or damaged during logging operations. Policies to coordinate logging practices with the foraging of special forest products such as forest florals, mosses and botanicals, tree tops - limbs - branches, and barks and burls can clearly benefit the State, private forest owners, and foragers.

   <u>What the State can do:</u>

   Formulate policy guides for coordinating logging and foraging on state lands which can serve as a model for private owners. Benefits from this coordination will be clarified if the policies are keyed to specific species and special forest products. Special forest products require a mind set different from timber harvester and processor thinking. The policy guides will assist in adding a special forest products perspective to the typical timber processing perspective.

What private land owners can do:

Through their associations, newsletters, Extension and other communication mechanisms, landowners can initiate coordination and inform others of the benefits to all of coordination and publicize the state model.

Benefits for the State:

Development and implementation of policies can improve economic development opportunities for the state's forest products industry by fostering maximum use of the total forest resource and minimizing publically-perceived adverse consequences of usual logging activity. Details of this issue for each product category researched in this report are presented below.

2. Promoting industry-to-industry coordination

An immediate opportunity exists for better utilization and marketing coordination between different industries in the state that may not currently recognize the benefits of coordinating with each other on product development. As an example, the tree nut processor, whose primary product may be the nut meat, may not be aware of the potential product value the nut shells and hulls may have to other industries producing new fuel products or pharmaceuticals . Similarly, the standard milling operation may not be aware that the bark they are peeling off their logs and discarding may be of high value to a pharmaceutical manufacturer.

What the state can do:

Develop and disseminate information on the utilization of forest resources and by-products by other industries. This is compatible with the current interest of the U.S. Forest Service for **total recycling and eliminating waste.**

What landowners and industry can do:

Manufacturers who use "waste" materials - as defined from the special forest products perspective - as their raw materials can issue releases to publications or newsletters that are distributed to producers of the "waste." At industry and extension meetings, they can suggest investigation of products now discarded.

Benefits for the State:

If the Minnesota DNR-DOF promoted this type of recycling - using discarded special forest products "waste" as raw materials for other useful products - it would be a positive step to demonstrate environmental sensitivity. Distributing the information will lead to total economic benefits from the forest resource.

3. **Agro-Forestry Practices:**

Minnesota has unique opportunities to integrate the use of its forest lands with the cultivation of native plant products from the forest, especially forest florals and botanicals which require the soils of the forest and the shade of the trees. These products are compatible with the growth requirements of Minnesota's trees, and promise excellent product market opportunities.

What the State can do:

Demonstrate and publicize, either on state forests or through partnerships with private timber landowners, the ecological compatibility of an agro-forestry program. Facilitate the transfer of technology to private landowners. Coordinate efforts with other agencies and departments, such as the Department of Agriculture.

What the landowner can do:

The research conducted for this study reveals that the private sector is interested in and may be readily and willingly involved in the creation of public-private agro-forestry projects. Details are discussed in the ***Florals*** and ***Herbs*** sections, below.

Benefits for the State:

Research for this project already shows out-of-state interest in setting up in-state agro-forestry projects to supply a growing floral market. The opportunity to create additional income and economic development opportunities from existing, underutilized resources is a winning scenario for the State.

4. **Product Cooperatives Development:**

Interviews conducted as part of the research for this project consistently emphasized the need for continued State assistance in helping special forest product producers in the State to identify and secure markets for Minnesota products outside the state. The state can facilitate the

development and exchange of information which can foster the creation of product **cooperatives** and/or **resource clearinghouses**. This is especially true for the decorative greenery and decorative woods categories.

What private industry and landowners can do:

Minnesota has excellent examples of private cooperatives in operation, such as **Minnesota Everlastings** (dried florals/herbs), which are designed not only to process the product, but to also serve as the central source of market development, quality control, and farming and foraging information for its member growers and wildcrafters. The success of Minnesota Everlastings might be used by private industry as a model to apply to other special forest products interests in the state.

Benefits to the State:

Cooperatives can combine the energy and creativity of individual entrepreneurs to accomplish more than could be done by each individual, as a separate entity.

5. **Value-Added Product Development:**

Capitalizing on value-added processing opportunities of special forest products can make a significant difference in gaining a market edge, just as it does in wood processing. Value-added is considered in almost all the product areas researched in this report, with examples specifically in the **Florals**, **Decorative Greenery** and **Herbs and Medicinals** sections discussed below. Minnesota has an opportunity to become a national leader in this area, possibly resulting in significant job creation within the states' special forest products industry.

What the State can do:

The state can encourage the application of value-added principles just as it has in wood products by collecting and disseminating product development and market research information in conferences, newsletters, workshops and other technology transfer opportunities. The state can also be a source of information on special forest products to funding organizations - banks, state agencies, Federal programs who are frequently unfamiliar with special forest products. The state can also include value-added special forest products in its trade development options.

What landowners and businesses can do:

Landowners and businesses can gather information and learn of the benefits of adding value to the special forest products and make investments in implementing value-added processing, just as they do in wood products. Special forest products have often not been given the serious business consideration they merit.

Benefits to the State:

The State as a whole will benefit by development and expansion of an industry based on natural resources unique to its area. With environmentally-sound foraging practices special forest products are a quickly renewable resource with excellent profit potential.

6. Continuing Product Research:

Oils from the roots, bark, wood, needles, and leaves of trees used in the pharmaceutical, natural health care, and perfume industries worldwide is just one example of on-going research efforts occurring in the special forest products industry throughout the U.S. The states of Oklahoma and Iowa, as examples, are coordinating research efforts in evaluating oil extract market opportunities from their supplies of Eastern red cedar, considered a "weed" species. Coupled with the oils research, the states have undertaken extensive market research for solid wood product market development from the same species, thus maximizing full profit opportunities for the processing of the species.

What the State can do:

The State can facilitate and provide support for basic and applied research, perhaps using much the same methods as funding wood products research. A model of government action is the Willamette National Forest in Oregon which initiated a research program designed to identify the best pruning practices for Christmas boughs that create a more favorable growing (exposure to light) environment for mushrooms and accommodate a continued spotted owl habitat.

If Minnesota is to become a serious player in the special forest products industry, creative research that highlights environmentally sound practices of maximizing the product potential of all of the forest resources available in the state is critical.

What industry and landowners can do:

The private sector can initiate intra-industry networks and requests for research money allocations. Similar to the method of financial support received from private wood products companies for on-going solid wood research, private industry in special forest products may make small

contributions based on an equitable method and consistent with the size of the industry to support or provide seed money for research which can lead to new and improved products.

Benefits to the State:

Additional research will have a high potential to produce unique special forest products that will allow Minnesota producers a leading edge in capturing and maintaining domestic and international markets. It will heighten appreciation of the wealth of non-timber natural resources in the State.

Within these broad policy considerations, each facet of the special forest products industry has problems unique to its own patterns of growth, foraging, processing and marketing. Most of these problems are solvable by improved coordination, facilitation, and/or increased understanding of the product and processes. Further research, technical assistance, and market identification also play critical roles.

In many instances, the entrepreneurs of the special forest products industry can solve the problems on their own initiative. In other instances, assistance may be required from the state, federal, or local governments to facilitate coordination, provide opportunities for technical assistance, or to develop models on state lands which can be adapted by private landowners.

The policy recommendations for special product categories are based on the market research conducted for this report. They reflect what persons in the special forest products business believe will prove most effective in developing a thriving industry.

FLORALS AND GREENERY:

Businesses specializing in florals and greenery expressed the need for:

- notification
- evaluation of agro-forestry options
- evaluation of value-added processing options
- further research on value-added.

Specific policy considerations are:

1) Develop a process that allows for *notification* to wildcrafting operations of logging contracts, dates, locations, etc. The process should allow for access to site prior to occurrence of logging to be able to garner marketable native floral products and greenery that may be inadvertently destroyed during logging operations or left as waste product.

The State can develop a model notification document and distribution system that could be used by both public and private timberland owners to notify interested parties prior to logging activity.

2) Begin immediate *evaluation of agro-forestry project options* for the floral industry. Interviews conducted by Mater Engineering for this project resulted in direct inquiries from major floral wholesale operations in other states who are already initiating research on possible sites for cultivation of Minnesota's native plants in market demand. The state may be in excellent position to help facilitate rotating land lease options to these companies who require forest soils and shading for specific florals cultivation. The emphasis here is to produce the wildcrafted (vs. cultivated) floral look which can be achieved in natural growing conditions but in concentrated areas to allow for easier access to volume of product and quality control (see Dried Florals section in report for full discussion). Since market research shows that demand for many of these native products consistently outstrips supply, agro-forestry projects may prove helpful in addressing quantity, as well as quality, issues.

   A rotating land lease option may also offer the state an opportunity to help facilitate pilot projects that allow for the growing and harvesting of currently restricted florals such as the Lady Slipper. Pilot plot development leases for this floral could, as an example, require immediate reseeding of the floral product upon harvesting to ensure a sustained population until logging of the site occurred. Upon completion of logging, harvesting and reseeding would need to be rotated elsewhere until the reforesting of the area again provided adequate tree shade to the site.

   Pilot plot development for wild lady slipper could serve a dual function of providing a root that can be reintroduced as a nerve-numbing agent for the pharmaceutical industry, and also provide a native ornamental flower for the state's nursery and floral industry.

   The State's role could be to facilitate and coordinate with agricultural agencies, and assist in the development of provisions for technology transfer. Businesses would take the initiative in requesting state aid, informing each other, and forming and utilizing their own associations.

3) *Evaluate value-added processing options* to create competitive market advantage for Minnesota suppliers in the preserved florals markets. New systemic and submersion floral preserving techniques which allow for preserving ***in the field*** to reduce product wastage should be evaluated for use on Minnesota species. The Rogue River National Forest in Oregon has just granted approval of a floral preserving process for salal to be

conducted in the field, after environmental review by the state's Department of Environmental Quality certified the preserving chemicals used to be "safe" for in-field use. The in-field preserving process is estimated to reduce wastage of foraged salal by more than 20%.

The State's role could be applying for grants to conduct preserving method testing and facilitate technology transfer of information developed. Industry would support the need for and value of the project and commit to utilization of applicable research.

4) Encourage *creative research on value-added for native products.* As an example, the drying and preserving of Liatris, native floral of Minnesota and much in demand in the floral markets, continues to be a problem. Currently, Liatris, when dried, is too brittle and fragile, and turns a black color when preserved with traditional preserving "sauces". Identifying preserving techniques for specialty berries and catkins should also be encouraged.

   Packaging of native floral products is a growing concern to processors. Buyers are now demanding higher quality in product being delivered. This usually requires hand-picking of the product and packaging that retains the natural shape of the product. Minnesota processors tell us that the demand for German statice, as an example, is one they can not meet because of the special packaging requirements.

   Here, again, the State's role could be coordination - for example, bringing the problem to the attention of the agricultural and chemical departments at the University and Agency level. Industry contribution could be contributing to research funds, providing the raw material for experimentation, and testing methods.

TREE TOPS:

Notification and development of model programs are the basis for policy considerations in Tree Tops product development:

1) *Development of a process that allows for notification* to tree top operations of logging contracts, dates, locations, etc. would provide assistance to tree top buyers. The process should allow for access to site during or immediately after logging to allow maximum access to in-demand species for artificial tree manufacturing (particularly birch). While cutting for traditional timber products species, loggers currently leave the downed birch tree to waste, as few markets have been identified for product development from birch.

   The market research for this project clearly identifies immediate unmet market demand for Minnesota birch in artificial tree manufacturing.

The State can facilitate the expansion of this product by developing a model policy of logging activity coordination with tree top buyers. Loggers would be encouraged to participate by small on-site logger/forager conferences.

2) Encourage the *creation of a Tree Top Cooperative or Buying/Selling Network*. Currently, the harvesting of tree tops in Minnesota is diffused, volumes are not dependable, market information is left for the individual harvester to track, and no system is established to allow for centralized storing of the resource and cross-shipment of product. The market for Minnesota birch in artificial tree top manufacturing is strong on the West and East coast, while demand for Manzanita and Curly Willow from California, and Dragonwood from Florida is strong for the mid-west states. A Minnesota Tree Top Cooperative or clearinghouse could serve as a storage point for in-coming materials from the logging sites, and could also serve as a coordinating and direct marketing entity for shipment and cross-shipment of product. Such a Cooperative could better serve a market which is eliminating the middleman in the buying process, and electing to deal direct with the harvester to ensure better dependability of volume and quality of product shipped.

   Operating much like a Minnesota Everlastings for the dried floral industry, a Minnesota Tree Top Cooperative could also serve as a markets research source, tracking on potential markets and increased market opportunities. (see **Branches and Twigs** section of this report for details).

   Finally, such a Cooperative could serve a valuable public relations function. As noted in the research, some tree top buyers from other states believe that Minnesota birch trees are "killed" solely for the purpose of acquiring the tops, leaving the rest to waste in the field. Others are concerned about insect infestation in the tree, such as the birch borer. Based on the interviews conducted for this project, these issues and misperceptions are having a direct effect on the marketability of the birch product and must be dealt with through an effective public relations campaign.

   The State's role would be to provide or suggest incentives to encourage development of such a cooperative. The State could act as the facilitator and central source of information in establishing the cooperative and implementing an effective buyers-sellers network throughout the U.S.

HERBS AND MEDICINALS:

The market research for this project clearly indicated the need for policies on notification, agro-forestry options, value-added processing, and integrating botanicals with solid wood manufacturing. Specific policy recommendations include:

1) Develop a process that allows for *notification* to wildcrafting operations of logging contracts, dates, locations, etc. The process should allow for access to site prior to occurrence of logging to be able to allow for wildcrafters to forage marketable forest botanicals that may be inadvertently destroyed during logging operations.

2) Begin immediate *evaluation of agro-forestry project options* for the botanicals industry. Similar to the discussion under the florals and greenery category, and based on the research findings for this project, market demand continues to increase for botanicals which are a part of the Minnesota forest floors. Further, pricing comparisons illustrate that higher prices are paid for wildcrafted or natural botanicals versus those cultivated in amended soils, etc. Opportunity exists to integrate the use of forest floors for the natural growing of botanicals.

   Rotating land leases may also offer the state an opportunity to facilitate pilot projects that allow for the growing and harvesting of currently restricted botanicals such as wild ginseng and golden seal. Pilot plot development leases for wild ginseng, as an example, would require immediate reseeding of the botanical upon harvesting to ensure a sustained population until logging and reforesting of the site occurred.

   Again, the State may be in excellent position to facilitate the set up of rotating land lease options to private botanical processing companies who require forest soils and shading for cultivation of specific natural botanicals .

   The State could also play a role in reseeding of the botanicals as part of the fee permit process for foraging the product. The permit could be accompanied by distribution of seeds of like botanical to encourage reseeding practices. The cost of the permit would, in part, pay for the seed purchases for distribution.

3) *Evaluate value-added processing options* to create competitive market advantage for Minnesota suppliers in the forest botanicals markets. Of particular importance in this special forest products category are the extract, tincture, teas, and bulk milled herbs categories. These value-added stages of forest botanical production can be very profitable and result in excellent long-term job generating opportunities for communities. As an example, herbal tinctures are a concentrated liquid

form of herb(s). Manufacturing tinctures from standard herbs costs about $1.52 per 2-ounces of tincture (including cost of the base herb, and production and labor costs). The average retail price for 2-ounces of tinctured herb is approximately $12.00 and the average wholesale price is $6.00. Value-added differentials, therefore, range from $4.48 to $10.48 for each 2-ounces of tinctured herb produced. If the State of Minnesota is serious about looking at some of the best opportunities in special forest products production, this is one value-added focus that should not be overlooked.

The State's role could be to facilitate technology transfer to provide a basic level of information that can also be used to determine what type of agro-forestry projects might be undertaken that provide the best profit potential for processed botanicals..

Industry may encourage contributions for research and workshops to inform foragers and processors of the value-added opportunities.

4) Evaluate creative options for *integrating botanicals and traditional solid wood processing operations*. In particular, analyze how bark can be recovered from hardwood milling operations in the state (i.e. cherry, etc.) to be processed for the pharmaceutical industry. With current prices of approximately $5.00 per pound being paid for cherry bark, a 16-inch diameter 12-foot log could produce chunked bark which could be sold at about $800 to the botanicals industry. Analyzing whether retrieval of the bark is more cost-effectively done on the logging site or at debarking operations is but one of multiple costing considerations which needs to be carefully explored. Consistency of market demand for the bark and seasonal and historical price fluctuations are all factors which need to be part of the any cost/benefit analysis for this issue.

The State can facilitate research on these opportunities by suggesting the problem to the University Department of Forestry as a research or thesis project, or commissioning the study by experts in the field. Once the research is accomplished, the major role is technology transfer. Industry has the responsibility for utilizing the knowledge and sharing with other industry members, where applicable.

BOUGHS:

Bough producers requested assistance from the State in three areas that affect their businesses:

1) Manufacturers say they cannot meet the demand for their wreath products. They claim that *availability and access to concentrated areas of balsam fir* is a major problem among the Minnesota wreathing manufacturers. While sales continue to grow, some manufacturers state

they could double their sales if they had easier access to the resource. The concern is one of labor reliability which is directly related to the resource access concern.

There appears to be a gap between the manufacturer's perception of the resource situation and the information provided by the State. Examples of the differences are shown below:

1) **Perception:** The pulp and paper industry will deplete balsam resources within the next five to seven years

State Information:

a) The pulp and paper use of balsam has been steady, not increasing

b) The pulp and paper industry does not use smaller 4" diameter trees which are preferred for boughs; they use only 6-7" diameter trees; the young trees are left to mature

c) According to survey data, there is a surplus of young balsam fir

2) **Perception:** Reseeding practices of the state foresters are geared toward reseeding with jack pine or other species rather than balsam.

State Information:

a) DNR does not reseed balsam or aspen because they reseed naturally

b) No balsam or aspen stands are being converted to pine (although some are being converted to spruce)

c) Reseeding with Jack Pine is only done in areas where balsam can't grow

Based on current perceptions, some manufacturers have encouraged a set-aside program or pilot project development for the wreathing industry that will allow for concentrated balsam resources on a sustained basis. Manufacturers estimate that availability of material would enable the wreathing industry in Minnesota to double its current $10 million per year in sales.

The gap between manufacturer perception and state data suggests that opportunities exist for better communication between state agencies and private industry. Improving communication channels between the State and the Minnesota Christmas Wreath Manufacturers Association (CWMA) should help to focus the issue on appropriate remedies.

2) Assistance in helping the Christmas Wreath Manufacturing Association to *research and identify product market opportunities* outside the immediate Minnesota area. The Minnesota CWMA may need assistance in developing a marketing strategy and funding program to help establish a markets research center for its members.

3) Because manufacturers are concerned over the fee permit structure for the harvesting of boughs, the state should look at *establishing **uniform** fees per product throughout* the state and should have a uniform fee increase formula that is based on a percentage of realistic market price for the product.

CONES:

This category of special forest products industry appears less organized in the state compared to other products researched for this project. The most telling information came from surrounding state buyers who indicated they were looking for suppliers of preferred cones for the potpourri/wreathing industry but didn't know who to contact in the Minnesota.

The State can play an important role in facilitating more visibility of the Minnesota product and key suppliers through development of a directory or product catalog. Critical linkages with west coast wholesalers who are currently negotiating lucrative contracts with Japan's potpourri interests should be vigorously pursued by private industry, with the State providing information support.

DECORATIVE WOODS:

A notification process and assistance in establishing a Minnesota Decorative Woods Cooperative were the major needs expressed by the States' decorative woods sector of special forest products. Suggested recommendations include:

1) Develop a *notification* model that encourages notification to decorative wood (especially burl) crafters of logging contracts, dates, locations, etc. The process should allow for access to the site during the logging process and also consider a time factor allowing for crafters to contact logging operations in advance to arrange for price structure and transport of burls found.

   Currently, while cutting for traditional timber products species, loggers discard any burls found on the trees. As loggers gain awareness of the potential value of burls from the forest, they may be able to identify more cost effective approaches for harvesting and transporting burls.

   The State can develop and use the model on state lands and encourage private landowners and loggers to adopt it as a practice.

2) Provide *assistance in establishing a Minnesota Decorative Woods Cooperative*. The market research conducted for this project indicates that native specialty woods, such as diamond willow, need outside exposure. Trends in the furniture and interior decor industry indicate strong markets domestically for rustic and country style products. Crafters in Minnesota dealing in decorative woods do not appear to have any central organization for the sourcing of raw materials or developing a marketing strategy for their specialty products. Implementation of a Cooperative for this segment of the special forest products industry could be very instrumental in identifying and tracking on "niche" markets, such as the floral industry, for product introduction. It can also be most helpful in negotiating with high-end specialty product catalogs (such as **Sugar Hill** and **Horchow**) which traditionally sell unique decorative wood products to targeted markets throughout the world. Interviews revealed that offshore markets such as Germany and Japan could also be targeted for niche product development.

   The Cooperative could also serve as a technical center for crafters, identifying new methods and tools which can be used in the preparation of specialty woods for manufacture into product.

   As a raw materials sourcing center, a Decorative Wood Products Cooperative can help to address some of the critical issues such as dependability of raw material supply and volume which were discussed by those buyers interviewed for this report.

The role of the State would be to act as facilitator and provide information to the industry through its communication sources of the values of the cooperative. Individual members would network to organize the cooperative.