

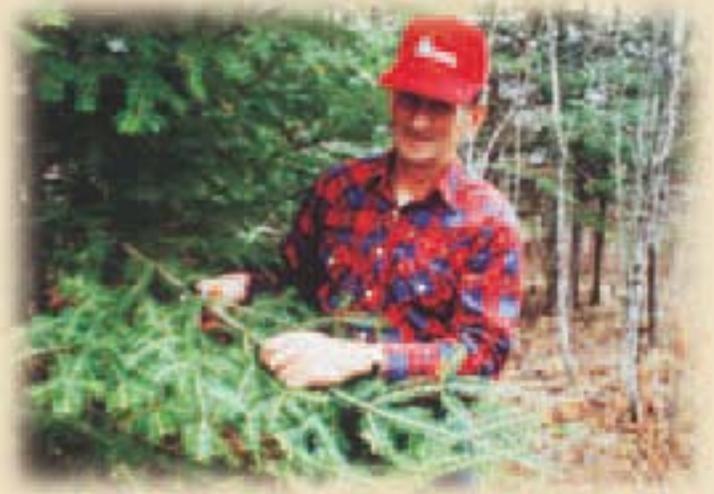
Balsam Bough

Careful Harvest Fact Sheet

Introduction

The State of Minnesota is a leader in the Christmas wreath and greens industry. This is a credit not only to the state's balsam resource, but more importantly to those who are supplying the boughs and products with their hard work, commitment to quality, and knowledge of sustaining the resource.

It has taken generations of effort to build this industry that is now directly and indirectly employing thousands of people in Minnesota. Proper management of the resource will allow this 'success story' to be told for years to come.



The Biology of Balsam

Balsam fir is a short-lived, cold climate tree of the northern lake states. It requires abundant soil moisture and a humid atmosphere. In wetlands it grows in pure stands or in association with other tree species like black spruce, cedar, and tamarack. On higher ground balsam fir is typically found in the understory of pine, aspen, and birch stands.

Balsam fir has typically been harvested for use in the pulp and saw timber industries and young balsam fir are used as Christmas trees. Its flat, dense, dark green needles are well-suited for wreaths and holiday decorations.

Harvesting Considerations

"Take what you need. Pay your respects. Leave the rest."
First Nation Tribal Elders

The gathering of balsam boughs and their manufacture into evergreen holiday products is a long-standing heritage of Minnesota's northwoods. These same woods are the beauty, recreation, and the economics of thousands of citizens, and the habitat of a myriad of woodland animal species.

A healthy and sustainable balsam bough resource is a responsibility of all citizens. The following guidelines have been established for the sustainable harvest of Minnesota's balsam bough resource.

Thoughtful pruning. Proper harvesting. Most balsam boughs are harvested from early October to early December. Boughs retain their needles the best if the branches are harvested after the second hard frost.

The harvesting of balsam boughs is a critical element in preserving and promoting a healthy balsam bough resource and annual harvest.



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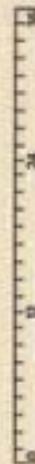
~ First Nation Tribal Elders ~



Before



After



Fir better - or worse

- Harvest boughs from the bottom half of the tree. The wreath industry prefers the flat or semi-round boughs that are typically found at the bottom of balsam trees. The round, rough-looking boughs of the upper part of older trees are not suitable for use in the wreath industry.
- When harvesting branches from the bottom of the tree, leave a portion of each pruned branch for regeneration. This will ensure balsam boughs for the future.
- When harvesting from smaller trees, leave at least 50 percent of the balsam tree's limbs intact in the upper portions of the tree.
- Harvested branches should have ends no larger in diameter than a pencil. As you harvest along the branch, leave part of the branch for growth and regeneration.
- Harvest boughs from trees that are greater than 7 feet high.
- Choose trees to trim that stand beyond 50 feet of public roads so that the aesthetic value of balsam trees can still be enjoyed by passersby.

Applicable Laws/Regulations

Get a permit, written consent or a bill of sale!

Permits are required for harvesting balsam boughs from public lands in Minnesota. Permits can be obtained from Department of Natural Resources Forestry offices, forestry offices of the Chippewa and Superior National Forests, tribal headquarters on reservation lands, and county land management offices located in county seats.

State law requires a permit, written consent, or bill of sale to be carried whenever cutting, removing or transporting boughs whether the land is publicly or privately owned.

A new law in 2002 requires individuals who buy more than 100 pounds of cut bough/decorative materials in a calendar year to purchase a "bough buyer's permit." The permit requires information to be recorded concerning the bough seller's name and address, a form of written consent for picking, and the government permit number, and legal description or property tax identification number of the land from which the boughs were obtained. The permit will cost \$25, with that fee reduced to \$10 if buyers have attended an approved annual workshop or other orientation session for balsam bough harvesters and buyers.

These workshops are generally offered in the early fall of the year; dates and times are publicized in local newspapers. Or, contact: BetterFORESTS Magazine at 218-759-7730. Email: kathleen@uslink.net

Birch

Careful Harvest Fact Sheet

Introduction

Birch is a very versatile tree. Virtually all parts of the tree have been used in some way in the past. This use continues today but to a very limited degree. The best known and most distinguishing characteristic of the tree is the shimmering white bark. To many the birch tree with its white bark symbolizes the northwoods.



The bark of the birch tree is one of the more important nontimber forest products in the northern forest. For many centuries, birch bark was essential to forest dwellers throughout the northern forest. Birch bark was important from birth to

death for the Ojibway of the northern Great Lakes region. It was used for food preparation and storage, water travel, heating, and cover for dwellings. Although birch bark has been replaced by plastic and paper products, it remains an important material for artists and wild crafting.

Paper birch and related white barked birches occur at northern latitudes around the world. Where ever they occur the bark is used in one way or another. Although there are similarities in the types of objects made from birch bark from these various regions of the world, it is possible to identify some unique features from each region. For example, in North America, sheets of bark of various sizes are used to make containers of different kinds, including the birch bark canoe. The bark is cut followed by sewing with spruce root, basswood bark, cedar bark and other natural and manufactured materials to allow shaping or if larger pieces are needed they may be sown together with one of the materials mentioned above. The Ojibway people often decorated small containers with porcupine quills. Northern Europeans (Scandinavia and Russia) commonly cut the sheets of bark into strips and wove the strips into a variety of items—for example back packs, shoes and baskets. They also used small sheets of bark to make canisters for food storage. Russian work commonly seen today in gift shops in the U.S. are highly decorated with figures made by stamping, cutting or appliqué techniques.



Birch Biology/Management

Birch trees grow in pure stands and stands with various mixtures of conifers and other hardwoods. The mix of species depends on past disturbances, soil conditions, and latitude – the farther north the fewer hardwood species. Occurrence ranges from some of the poorest soils (for example mine tailings) to relatively rich soils that support northern hardwood forests.

Regeneration occurs from seed and sprouting from the base of standing trees and the stumps of cut trees. Sprouting occurs in most trees up to age 40 to 50 years and then declines as trees lose vigor. The number of sprouts produced initially ranges from several to many hundreds depending on the size and age of the tree. But the number of sprouts decreases and at maturity there are usually 2-4 trees/clump. A stand that has reproduced mainly by sprouting has a very characteristic appearance – groups of trees each group in the same location as the parent tree.

An individual birch tree can produce hundreds of thousands of seeds and a stand of birch many millions. These large seed crops occur at 3-4 year intervals. Birch seeds germinate best on bare mineral soil or where the organic layers have been mixed with mineral soil. Birch seedlings grow much slower than sprouts at least in their early years – it may take a seedling 5-10 years to grow to 5-6 feet, a sprout can grow to that

height in 1-2 years. The rate of height growth of both sprouts and seedlings can be greatly affected by shade and browsing by deer and hares.

Birch is usually managed in stands where trees are all the same age (even-age management). This usually means stands are removed by clearcutting and regenerated from seed, sprouts or more likely a combination of seeds and sprouts. Usually some sort of additional disturbance, in addition to that done during logging, is required to provide the best seedbed for germination. The number of different tree species growing with birch is usually determined by the number of species present before logging of the mature stand.

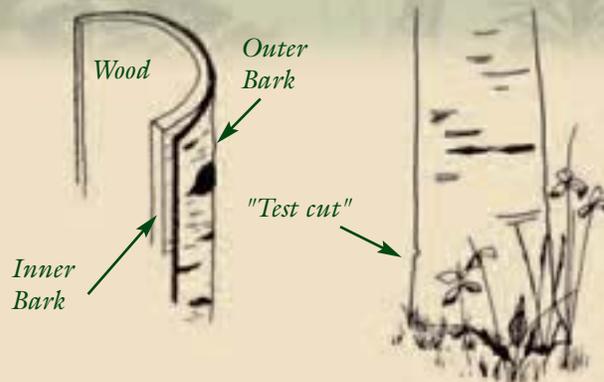
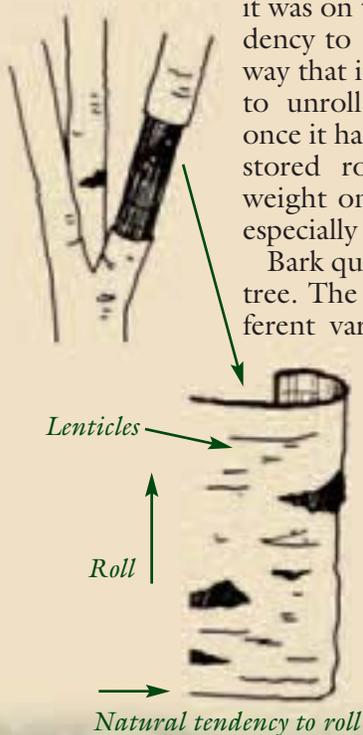
Harvesting Considerations

There are 5 really important things to consider when harvesting birch bark.

- Always have the permission of the landowner to harvest bark.
- Harvest bark from trees that are planned to be cut in the near future – this is not always possible.
- The outer layer of bark is all that is harvested. Damage the inner layer of bark as little as possible when harvesting the outer layer. The thickness of the outer layer is usually not more than 1/8 – 1/4 inch – the inner layer is about 2-3 times thicker than the outer layer of bark.
- The best time of the year to harvest bark usually falls sometime between mid-June and early July. Each tree will vary somewhat. If you are not sure if a tree is ready, one can make a small test cut at the base of the tree. Bark harvested before or after this prime period is sometimes referred to as winter bark – it has a different color than the summer bark. Much greater care is required in removing bark from the tree.

- Once the bark is off the tree it should be rolled length-wise or at right angles to the way it was on the tree. The bark has the tendency to "want to" roll up in the same way that it was on the tree. It is difficult to unroll if it does that, particularly once it has dried. The bark can either be stored rolled up or flat with some weight on top to keep it from curling, especially at the edges.

Bark quality varies greatly from tree to tree. The bark from each tree has a different variety of uses. Important bark characteristics to consider are: size and density of the lenticles (black "eyes"); roughness; density of branch scars; bark thickness; and tendency for bark to come apart in layers. The width of a piece of bark can be estimated by multiplying the diameter of the tree by 3 – the



length by how high up the tree one can reach (with or without a ladder).

Bark is usually harvested from larger trees (6 inches diameter and larger). But smaller trees have some very interesting bark colors and this bark can be used to add interesting detail to baskets.

Bark can be collected from dead and down trees. This bark tends to be somewhat more fragile than bark from living trees, but it is very useful for some things.

Applicable Laws

ALWAYS know who owns the land from which you want to harvest bark – and RESPECT the wishes and requirements of the landowner.

There is no uniform set of regulations regarding harvesting at the present time. Obviously every private landowner has their personal rules. The following are some situations that exist:

1. Some counties do not give permits. They prefer to have the bark harvester contact the logger that has purchased a timber sale. The logger will decide whether or not to give permission to harvest.
2. State lands require a permit and a fee is charged.
3. U.S. Forest Service requires a permit.

Frequently Asked Questions

1. Where can I find out where to harvest bark?
 - Determine who owns the land that might have harvestable bark.
 - Contact county, state or federal offices for areas where bark might be available.
 - Put ads in the paper, contact friends – any method that lets people know that you are interested in harvesting bark.
2. Does removing the bark kill the tree?
 - It can kill the tree. Some knowledgeable harvesters estimate that up to 20% of trees from which bark is removed die.
 - If you harvest bark from trees that are to be cut soon then this is not a concern.
 - If the procedures outlined above are followed there will be little effect on the tree. It is very important to understand the best time of the year for harvest and to do little or no damage to the inner layer of bark.
3. Does removing the bark affect the lumber quality of the tree?
 - It can. Again if the bark is removed at the right time of the year and if care is taken in cutting into the bark there should be little effect.

Lycopodium

Careful Harvest Fact Sheet

Introduction

Lycopodium comes from the Greek words "luko" (wolf) and "podos" (foot); thus the common name of "wolf's paw" or "wolf's foot." Despite the common name of clubmoss, *Lycopodium* species are not related to mosses, but rather to ferns. They are evergreen, perennial, clonal, and rhizomatous in nature.



Lycopodium species (primarily the aerial stems) are collected and have various uses including: winter seasonal decorations, floral industry, medicinal and homeopathic remedies, historical aboriginal uses, and whole plant harvest for nat-

uralizing landscapes. The spores, when mature, are highly flammable and can be used for pyro-technics and for special effects. In fact, the first photographers used *Lycopodium* spores for flash powder, and one of the first photocopy machines used *Lycopodium* spores as a carbon source. In addition, due to their very fine texture, spores were used in toilet powders, makeup, and coatings for pills.

A variety of species of *Lycopodium* occur in northern forests. The most common of these are:

Lycopodium dendroideum
(Round-branch ground pine)

Lycopodium obscurum
(Flat-branch ground pine)

They are also known as "Princess pine".

The Biology of Lycopodium

Lycopodium, commonly known as clubmoss, occurs relatively frequently in northern hardwood forests. Each particular *Lycopodium* species has a characteristic modular growth form with either above- or belowground rhizomes, common branching angle, as well as a characteristic method of vegetative reproduction (commonly observed) and of sexual reproduction (rarely observed).

The aerial stems for all *Lycopodium* species have two functions: photosynthesis and spore production. When the aerial stems reach maturity (between 4-6 years), they may produce strobili or cones that, in turn, form spores that are necessary in the sexual reproductive cycle of the plant.

Vegetative reproduction is the primary method of reproduction for *Lycopodium* species, contributing to its spread or increase in cover in a given area. An entire plant may have both above- and/or belowground parts. A single plant may include many aerial stems. Many plants may make up a 'clone.' A clone is a group of plants that are all genetically identical.

Harvesting Considerations

The princess pines are most frequently harvested and are primarily used as decorative 'greens'. They are commonly found in aspen/birch forests, but may also occur in moist rich woods as well as in boggy areas. Their tree-like branching aerial stems resemble small pine trees, hence the common name of Princess pine or ground pine. Ground pine species have lateral branches (rhizomes) that commonly grow or 'run' 4 to 6 inches belowground.



Ground cedar is another frequently harvested species on private lands with landowner permission; it is not typically allowed for harvest on public lands. It also has tree-like branching aerial stems that resemble small cedar trees, but the lateral branching (rhizomes) run along either at the surface of the soil or just below the surface in the litter layer.

- The most efficient way to harvest the ground pines is to pluck or clip the mature aerial stem near the base of the stem at ground level, leaving the belowground portion of the plant undisturbed. Because it has not yet been determined whether it is less stressful to the plant to have the aerial stem plucked, it is recommended that they be clipped scissors or sharp hand-held pruners. Harvesting individual mature aerial stems in such a way as to not disturb the underground rhizome may enhance the survival of the plant and may increase or even stimulate belowground rhizomal branching. There is some concern that plucking may impact or disturb the belowground portion of the plant.

To harvest the ground cedar (*Lycopodium complanatum*), it is easiest to grab hold of a mature stem with strobili, give it a gentle tug, and then gradually loosen the remaining length of rhizome from the litter layer of the forest floor. The rhizome may be clipped near the base of the mature stem in hand, leaving some of the remaining plant parts (rhizomes and aerial stems) to regenerate vegetatively.

- According to the leading buyers in the Lake States area, only the mature aerial *Lycopodium* stems (the 4-6 year old stems that have produced strobili or cones) are considered to be economically valuable.

- Most *Lycopodium* is gathered in the fall of the year, typically beginning around September. Most ground pine and ground cedar is used for holiday decorative purposes, thus the fall is an appropriate time to begin collecting in order to get materials to regional buyers in time for preparation for use. This time frame also coincides with when the *Lycopodium* spores are mature and ready for dispersal. The commotion created while gathering allows spores to be knocked out of the strobili, dispersed

into the air, and fall onto the newly disturbed area of forest floor. This newly disturbed area will quite probably have exposed mineral soil; creating potentially prime conditions for spore germination and genetic recombination (alteration of generations).

- To ensure future *Lycopodium* harvest opportunities, take only the mature aerial stems and leave the immature stems for a future harvest. At least two years should be allotted between harvests in the same area to allow for enough time for an increase in vegetative expansion of cover and will provide good insurance for future harvest operations. Also, by skipping a year or two between harvests in the same area, you will allow time without disturbance for possible spore germination and for the potential for the development of new plants and new genetic material.

Any abrupt and intensive alteration of growing conditions can make it difficult for the survival of any type of existing ground vegetation.

When considering whether to gather any forest products, it is important to consider taking it in moderate quantities. Following the general advice of the First Nation Tribal Elders,

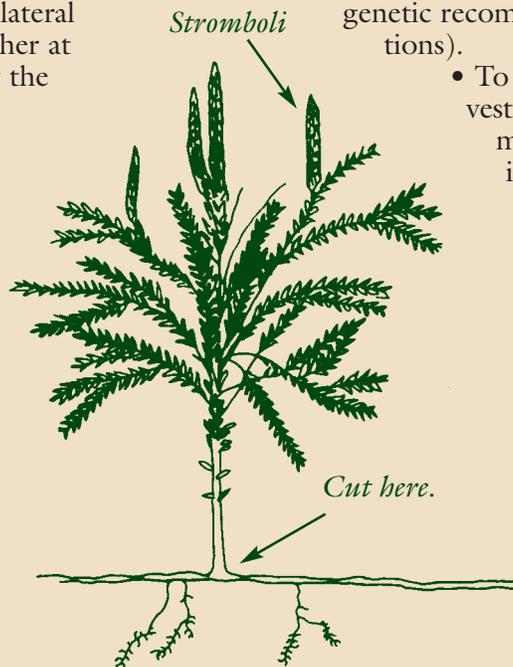
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Applicable Laws/Regulations

Typically a permit is required if you plan to harvest *Lycopodium* species on public lands. The ground pines (*Lycopodium dendroideum* and *Lycopodium obscurum*) are the predominant species allowed for harvest on public lands. Check with the particular public land agency in question to get the specific rules and regulations for the area where you plan to harvest. If you plan to harvest *Lycopodium* on private land, landowner permission is required.

Federal National Forest Lands in the Lake States area: Ground pine species are allowed for harvest through a minimal fee permitting process.

State Forest Lands: In Minnesota and Michigan, a minimal fee permitting process allows ground pine species harvest. Harvest by permit is not allowed on Wisconsin state forest land.



Balsam Field Card

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~First Nation Tribal Elders~



- Harvest boughs from the bottom half of the tree. The wreath industry prefers the flat or semi-round boughs that are typically found at the bottom of balsam trees. The round, rough-looking boughs of the upper part of older trees are not suitable for use in the wreath industry.
- When harvesting branches from the bottom of the tree, leave a portion of each pruned branch for regeneration. This will ensure balsam boughs for the future.
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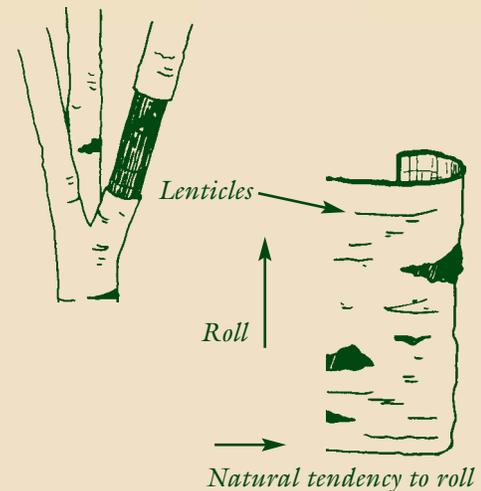
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Birch Field Card

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See reverse

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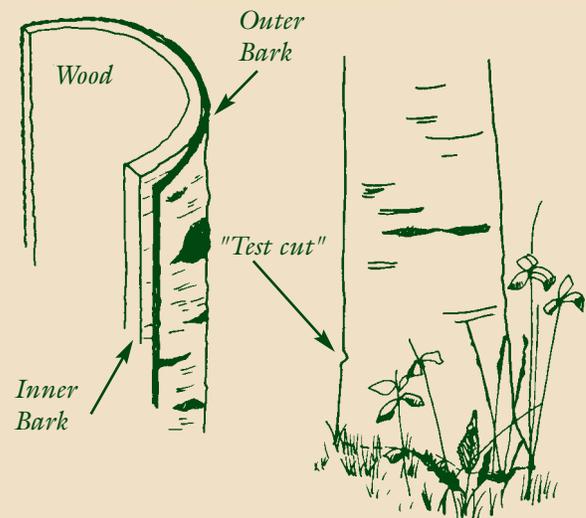
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