

Birch

Careful Harvest Fact Sheet II

2005

Introduction

The Biology of Birch

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.

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Birch



The artificial tree top business is a strong one, and has been in Minnesota for decades. Birch tops, valued for their white color and aesthetic appeal, are used as decorative items in professional offices and retail stores. Holes are drilled into the natural trunk, the stem/top is potted, and branches with silk leaves are then inserted into the trunk. These trees are sold for use in shopping malls, professional office buildings, and hotel lobbies. Small diameter birch is also used in furniture making and for a variety of decorative products such as specialty frames. The look contributes to the 'back to nature' trend and provide realism to an otherwise unnatural environment. Also, studies indicate that artificial trees are finding a renewed market in the restaurant business, especially in low-light areas. The effect is to provide a more natural and private atmosphere to those dining.

Harvesting Considerations

A birch tree should not be harvested to supply on the "top." Tops are available when a traditional harvest is taking place on private, local, county, state, or federal forest lands. Or, if birch stands are being thinned for management purposes, individual clumps of sprouts could supply get usable birch tops. Thinning in small diameter, young stands is a way to do some stand improvement and to get usable material.

Frequently Asked Questions

- 1. Can birch trees be harvested just for the tops?**
Tops of the trees are obtained only after the tree has been downed during timber harvesting operations. Trees are - and should NOT be harvested just for the tops.
- 2. Are insects/disease a factor in the quality of birch tops?**
Some manufacturers of artificial trees have stated that they prefer the birch tops be fumigated before they will purchase the tops. This is not always the case among manufacturers.
- 3. Can I buy birch tops?**
Yes. There are web sites on the internet that frequently have birch tops for sale. Check out www.specialforestproducts.com. It may also be possible to purchase tops from a traditional timber harvester in your area. An advertisement in the newspaper or word-of-mouth may help to locate tops. You can also check with your local county, state, or federal forest management office to find out if a traditional harvest of birch is occurring in your area. You may have opportunity to purchase the tops from the buyer of the timber sale. ■



Introduction

The Biology of Cedar

Northern white-cedar, known by botanists as *Thuja occidentalis*, has a fragrant wood. This wood is prized for its use in cedar chests and as a siding in sauna construction. Cedar also makes an excellent decay resistant post, shingle shakes for roof construction, and the foliage adds a wonderful aroma to Christmas wreaths.

“Arbor Vitae” or northern white cedar is found growing throughout the Minnesota forested landscape, lining the edge of lakes and streams, in upland settings, but more frequently in lowland sites or ‘swamps’. The best stands of cedar occur on fairly rich sites, often having soil derived from limestone. In lowland swamps, cedar grows mainly where there is movement of water, such as a small stream or an underground flow. Across the landscape, cedar provides valuable wildlife habitat, primarily offering winter thermal protection for white tail deer, as well as, a variety of products used by mankind over the centuries.

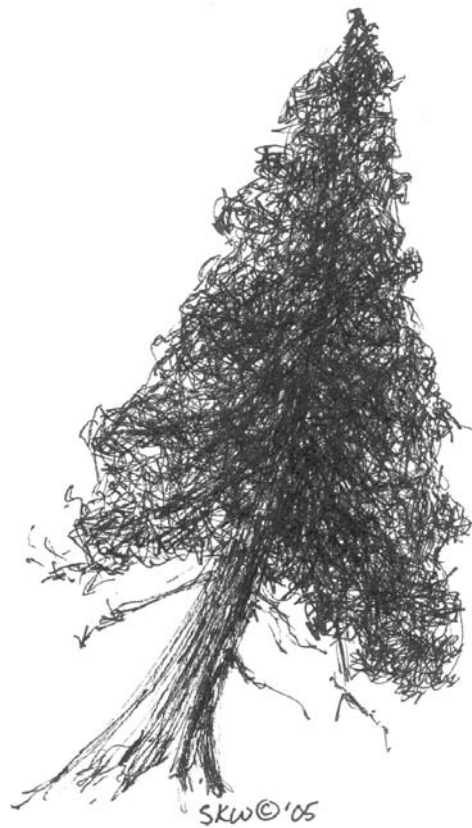
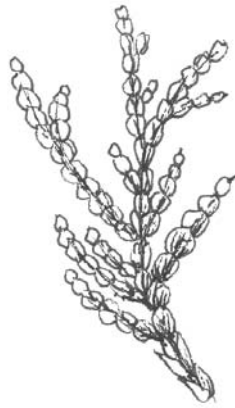
Northern white cedar is interesting because of its unique properties from every portion of the tree. From the evergreen leaves from its small crown, the gray colored bark, the disease resistant wood, all the way down to the roots, every portion of this tree has been important to people and their livelihoods. The scale-like foliage are collected for decorative boughs, the needles are distilled to produce oil used for perfumes, candles, cleansers, disinfectants, liniment, room sprays, soft soaps and as an insect repellent. Native Americans created a ‘winter tea’ from the foliage, and it is recorded that this ‘tree tea’ spared famed French explorer Jacques Cartier & his crew from scurvy. To honor the cedar tree, the crew dubbed it ‘arbor vitae’ or ‘the tree of life’.

Cedar bark has been used extensively by the Ojibwa, the inner bark has been cut into stripes, prepared by boiling and woven into bags to store wild rice and it was frequently woven into mats for flooring. The inner bark, has also been used to make cordage or string. Historically, twigs and barks have been used medicinally by Native Americans. Roots have also been used, being pulled up from the ground of standing trees, sometimes 20 feet long or

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Cedar



more. The roots were ‘skinned’ removing the outer protective covering before being split and woven into a basket or to help build a canoe.

Cedar wood has significant characteristics, with the wood being decay resistant, lightweight wood that lacks resin or pitch. Typical uses have been for cabin logs, lumber, poles and shingles. It's a perfect, natural material for a dock, fence posts and due to its flexible nature, the wood has been use for canoe ribs, while small diameter tops & limbs are frequently used for spindles for furniture. Cedar does not have resinous pitch like pine or spruce, making it ideal for saunas. Cedar character wood, individualistic pieces of wood with original shape and form, are highly sought by specialty forest products specialists that sell to markets showcasing unique wood products.

The biology of northern white cedar is also unique, being a long-lived tree, standing 400 years or more. This moderately tall tree has a shallow root systems is wide spreading and can be easily damaged through compaction. It is a “late bloomer” in terms of reproduction, producing seed at age 30, but with best seed production beginning at age 75 producing a good seed crop every 2 to 5 years. The seed is light in weight, and able to be disseminated by wind or by animals.

Northern white-cedar also reproduces vegetatively -- that is without seed. Have you ever noticed cedar trees that literally hang over stream or lake banks? These trees have literally fallen over and have sprouted roots along their bole to anchor themselves in the soil while their curved bole grows out over the water. Not surprisingly, northern white-cedar can be an important tree species in shoreline restoration and stabilization programs. Branches from cedar trees also have the capability of sprouting and producing “vegling” – identical replicas of their parent. This mode of reproduction is much more common with western red cedar that grows in the coastal rainforests of the Pacific

Northwest. But, when the right combination of conditions exists – namely adequate moisture – northern white-cedar “vegling” can become full-sized trees in northern Minnesota.

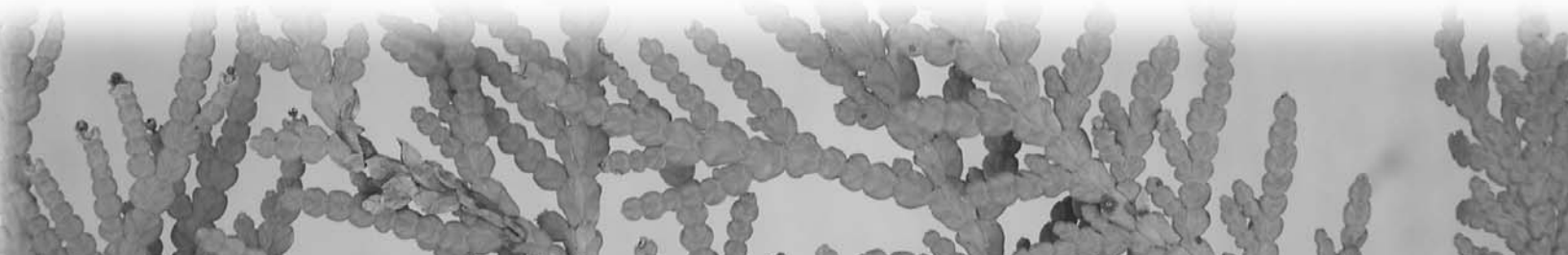
Of course, one cannot mention cedar without mentioning deer. Cedar is the preferred browse species by deer for browse and offering critical habitat during severe winters. Sites are typically over-browsed which can impede growth and more frequently kills young trees. Additionally, cedar offers habitat for a variety of other mammals and birds.

Harvesting Considerations

The most important consideration for cedar is the recognition that it is a limited resource and there exists the need to use it wisely. Harvest coordination options may be explored with landowners prior to harvesting. During an appraisal, the site may be assessed for options that compliment harvesting timber, laying the ground work for multiple harvests over the lifetime of a forest.

Applicable Laws

Private, as well as public lands (federal, state, and county) have differing regulations, permits, and trespassing authorities. It is critical to contact the appropriate landowner/agency. A platbook can serve as an important reference tool. ■



Introduction

“Diamonds in the rough!” Diamond willow is renown among artisans who craft the beautiful wood into cribbage boards, walking sticks, furniture, and wooden carvings. Do this know this ‘diamond willow’ is actually willow stems with abnormalities in the shape of diamonds?



The Biology of Willow

Diamond willow may grow to be 20 feet tall at maturity and have a trunk approximately 4"-5" in diameter. Branches as small as 1" in diameter are used for various crafted items. Diamond willow has been used historically by Minnesotans as a craft wood for making walking sticks, lamp stands, crosses, letter openers, utensil handles and other items.

Diamond willow is not one particular species of willow, but rather it seems to be the result of attack by one or more types of fungus on several species of willow, thus creating a diamond like pattern to the wood. The occurrence of “diamond” willow can be locally abundant with many stems in a clump exhibiting this growth pattern. However, not all stems in individual clumps are affected, indicating that the diamond shape is probably not a genetic trait characteristic to a specific willow species.

Cankers, or diamonds, form as a result of the tree’s response to the fungus. The diamonds are shaped like elongated ovals with pointed ends. The cankers seem to result from the tree “growing away from” the site of attack. This

usually happens at the crotch of a branch on a larger branch or main stem. If the branch is relatively small it seems to die very quickly. If the branch is larger, it may



continue to grow and the “diamond” is formed on the branch and the stem. As new layers of growth occur further and further away from the site of the fungal attack, the affected area gets larger and deeper.

There are over 100 species of willow in North America. It is found throughout much of Alaska, the Great Plains, the parklands, and the boreal forest. In general, willows, grow in low lying, wet areas. Diamond willow can be found along riverbanks and lakeshores, near bogs and swamps and in farm dugouts. No species is scientifically classified as diamond willow, rather several species have been found to form these shapes.

Diamond willow is an excellent wood to work with. For carving and making craft objects, the irregularity of shape add to the esthetic appeal of the item. The species that form diamonds seem to grow quite slowly, so the grain is closely spaced. The heartwood is similar to basswood in terms of how it feels to carve and the amount of detail that can be achieved.

Another feature of diamond willow is the presence of boring insects and the tunnels they create in the wood from their boring activities. The "tunnels" created between the bark and the wood can create some interesting patterns. The holes that have been eaten directly into the wood are usually black and also add distinction to the wood.

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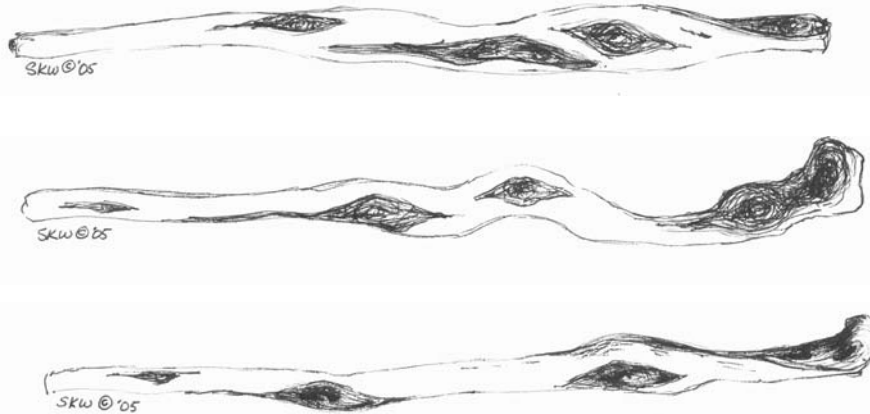
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Willow

"I love many types of carving - but the diamond willow and now cottonwood bark are really fun - I guess it's called "found" wood - as mother nature shares it with anyone who can find the beauty in it -

Peeling a diamond willow stick to get it ready to carve is like opening a Christmas gift. You can sort of guess what's underneath - but you never really know how great a stick is until you pull the bark off and see what's underneath! Then the goal is to keep it looking as natural as you can - the wood is so beautiful and the contrast of the white willow against the red diamonds makes each stick a beautiful work of art."

Karen Henderson



Harvesting Considerations

The best places to find willows with good diamonds are locations where growth is slow and stands dense. Thus, valley bottoms rather than hillsides likely will yield the best diamonds. The willow can be cut any time of year, but if cut in winter and dried slowly the wood will not check or crack so easily.

A long time harvester in Minnesota shares that she harvests "wherever I can find a swamp that's accessible and on land, and where it is admissible for me to cut.

"I like to harvest in the spring and early summer - so a person has to watch when and where the water gets in the way of reaching the best sticks. Have some friends with swamp areas on their farms - and a 4-wheeler - makes it easier.

"It is not difficult to find - once you learn what it look for. I find that I watch the sides of the road, particularly in northern Minnesota near Lake of the Woods. There, the willow seems to be everywhere.

The key is having legal access (and boots. . .because the best diamond willow is in the standing water)!"

Applicable laws

The Minnesota Department of Natural Resources is considering harvest regulations on state land, with the idea of seasonal harvest restrictions in wet areas

where motorized travel will be allowed. In all cases, however, and with all species - ASK PERMISSION. Private, local, county, state, and federal trespass laws and access rules differ among them. For public agencies, visit the natural resource office closest to the area in which you wish to harvest. Regulations and/or permitting rules will be available to you.

Frequently Asked Questions

- 1. When is the best time to harvest diamond willow?**
The ideal season for harvest may be springtime, as the bark strips more easily then.
- 2. What features in the wood do you look for?**
Watch for trees that are straight, and 1 1/2" to 2 1/2" diameter. A crooked one should not be overlooked - it will have lots of character. The "diamonds" are visible with the bark on - so the more diamonds - the better. Especially nice are the ones where there are diamonds across from one another on the stick; the diamonds will open up to one another and leave open spots on the stick. The willow is strong enough that it still has enough integrity to be a walking stick - even with holes in it and the holes really add to the uniqueness of the stick. Many times you can cut a stick right at ground level - sometimes you need to look toward the sky and cut them up higher for a straighter stick - depends on the stand of willow. ■

Birch Field Card

For more information: www.specialforestproducts.com • 1-888-414-0374



- Never cut a live, standing tree to obtain the tops. Tops should be collected from the downed timber of a traditional timber sale. The Department of Natural Resources is considering an attempt to coordinate birch top harvest in areas where timber harvest or precommercial thinning is planned. The U.S. Forest Service is beginning to set up birch harvest permit sales, prior to allowing traditional sales on forested land.
- Most desired are trees around two inches in diameter and up to 12 feet high.
- In all cases, however, and with all species - ASK PERMISSION. Private, local, county, state, and federal trespass laws and access

See reverse

Cedar Field Card

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- Cedar is a limited resource; regeneration does not come quickly or easily. Use cedar wisely.
- If harvesting cedar boughs, state law in 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



See reverse

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Willow Field Card

- The best places to find willows with good diamonds are locations where growth is slow and stands dense. Thus, valley bottoms rather than hillsides likely will yield the best diamonds.

Willows, in general, like low lying, wet areas. A rule of thumb is: where the mosquitoes are worst, there you will find willow! Good diamond willow can be found along riverbanks and lakeshores, beside sloughs and farm dugouts, and in bogs and swamps.

See reverse



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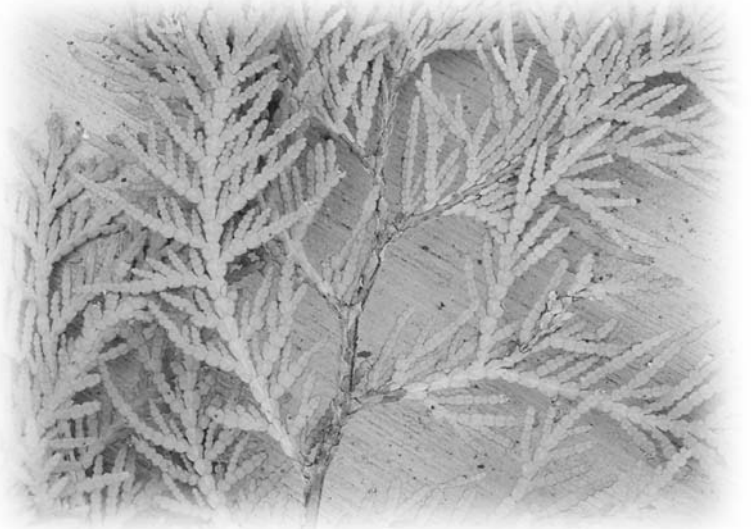


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- Explore the options of obtaining the cedar resource in areas and locations where it may be already destined to be harvested or destroyed for other reasons, such as traditional timber harvest, housing development, road and highway right-of-ways.
- In all cases, however, and with all species - ASK PERMISSION. Private, local, county, state, and federal trespass laws and access rules differ among them. For public agencies, visit the natural resource office closest to the area in which you wish to harvest. Regulations and/or permitting rules will be available to you. ■



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