

Optimizing Non-Timber Resources

What are Non-Timber Resources?

Many people own land in Maine to generate income from the sale of timber. However, land is also valuable as a source of non-timber products and resources. To a small landowner, these non-timber products and resources can be incredibly important. They include wildlife, scenery, recreational opportunities, products like maple syrup, and more. Use the information provided in this chapter as you begin to discover the non-timber resources on your property.

Improving Your Woods for Wildlife

Viewing, enjoying, and providing wildlife habitat are the most important goals of many woodland owners. Some are avid birdwatchers and know every species of warbler that arrives in May. Some enjoy spending fall mornings in a deer stand or walking trails for grouse. Others listen for the chorus of wood frogs and peepers on rainy spring evenings. Whether you're a long-time wildlife watcher or just beginning to identify common species, improving your woods for wildlife can be fun and rewarding.



Ruffed grouse. Photo: MFS

Woodland Features Important for Wildlife

The landscape in Maine is highly variable and every woodland provides wildlife habitat; however, certain features can greatly increase the value of your property for a variety of wildlife species. Some of the woodland features that are especially valuable to wildlife include forest edges, **riparian areas**, **vernal pools**, **mast trees and shrubs**, **snags**, the **forest floor**, and

leaf litter. If you have any of these features on your property, you've found a good place to start looking for wildlife.

The place where two different habitat types meet is called an edge. Examples of edges include the zone where a field changes to woods or where a spruce plantation changes to a hardwood stand. Edges usually have greater plant diversity and are home to many species of animals. Brushy edges between woods and fields tend to have excellent **cover** and food for birds, small mammals, deer, and medium-sized mammals.

One of the most important habitat features occurs at the edges of ponds, streams, and wetlands. This habitat, called the riparian area, has both terrestrial and aquatic species. Many songbirds, ducks, and amphibians rely on riparian areas for breeding and nesting. Mammals often use the cover that such areas provide to travel in concealment. In addition, many animals that live upland also make regular trips to the riparian area for water and food.

Vernal pools are small, temporary wet areas that are frequently found in the Maine woods. These pools are created in small depressions, by melting snow and rain in the spring, and often dry up by late summer. They don't contain fish, which makes them ideal for frogs and salamanders to lay their eggs (which fish like to eat). Because these amphibians are a vital part of the food chain, it is important to protect vernal pools when working in your woods.



Vernal pool. Photo: Carla Fenner

Mast trees and shrubs are very important habitat features. They produce fruits, nuts, seeds, and berries eaten by wildlife. Oak, beech, pin cherry, birch, serviceberry, nannyberry, winterberry, hawthorn, and dogwood are good examples of mast species common to many woodlands. Some wildlife, like turkeys and black bears, rely on mast for a large part of their diet—especially when they’re putting on fat for the winter. The healthier the tree or shrub and the more resources it gets, the more mast it will produce. Therefore, mast species can be encouraged to produce more food with proper pruning and by removing nearby trees and shrubs competing for sun and water. Planting a mast tree or shrub can be a fun and rewarding family activity.



**Bear eating an apple while climbing an oak tree.
Photo: Kathleen Wheeler**

Standing and fallen dead cavity trees also provide very important habitat. Standing dead trees, or snags, provide homes for many species of wildlife in Maine. Woodpeckers, chickadees, and other birds pick insects out of the decaying wood, and bats often roost under loose bark. Some snags have hollow centers that serve as nesting sites for owls, squirrels, and other animals. In addition, dead trees and woody material on the forest floor provides essential habitat for many small mammals, birds, and amphibians. As snags and downed woody debris decompose, they add nutrients to the soil and encourage new plants and trees to grow. Many tree seedlings start on rotting logs in the nutrient-rich decaying wood.



Cavity tree. Photo: Dan Jacobs

Although cleaning out snags and underbrush is sometimes aesthetically pleasing, dead wood is very important for wildlife and the future productivity of a woodland. You can maintain or improve the wildlife habitat of your forest by leaving dead and decaying materials in areas where they aren't safety hazards.

The forest floor is an important feature of the woods in your backyard. It is home to small woodland flowers, bushes, tree seedlings, small mammals, ground-nesting birds, insects, amphibians, and many other forms of life. Small mammals like voles use fallen, rotting logs for hiding places and escape routes. Ruffed grouse (commonly known as partridge) use them as “drumming” logs during the spring courtship season. One of the most important but most overlooked pieces of the woodland puzzle is decaying wood and leaves, known as leaf litter. This material is home to earthworms, beetles, and microscopic organisms that recycle organic matter back into nutrient-rich soil.

As you explore your woodland, you will find many other features that provide important habitat for wildlife.



Leaf litter. Photo: Dan Jacobs

Habitat Components

The abundance and diversity of wildlife on your property is due, in large part, to the available habitat. Habitat is simply the living requirements that wildlife need to survive—access to food, water, cover, and space. Each species has its own habitat needs, which can range from very specific (habitat specialists) to very broad (habitat generalists). The easiest and most

effective way to encourage wildlife on your property is to provide good habitat conditions.

Food needs vary from one species to another and may even be different for one species at different times of the year. Many species of songbirds eat insects in the spring and summer and seeds, fruits, and buds in fall and winter. Some animals have very specific diets; others are far more general. For example, snowshoe hare make up over 75% of the Canada lynx's diet, while coyotes are scavengers and will eat almost anything.

Water availability is crucial for wildlife. Every species needs access to water in some form. Fortunately, Maine has a lot of water and access to it is not normally a limiting factor. Even if your property doesn't have a pond or stream, there may be a spring or small pool that provides water to wildlife. Keep in mind, species such as waterfowl and amphibians require larger bodies of water.

Cover is where animals can safely rest from predators, bad weather, and other threats. Examples of cover include a stand of evergreen trees used by deer in the winter, a rocky hillside with voids for fox dens, or dead leaves on the forest floor where wood frogs can overwinter.

Space is the area that supplies an animal with food, water, and cover. The amount of space an animal requires varies from species to species. Generally, large animals need larger areas. In addition, many animals move from place to place throughout the year. Some, like white-tailed deer, go only a short distance to find more cover in the winter. Others, like Maine's migratory birds, travel thousands of miles on an annual basis.



White-tailed deer. Photo: Dan Jacobs

Improving Wildlife Habitat on your Property

Working to improve habitat on your property can increase the amount and diversity of wildlife. However, it is important to distinguish between habitat improvement and feeding wildlife. Artificially feeding wildlife can cause more harm than good, because animals can easily become dependent on concentrated food sources. Diseases can also spread rapidly at feeding stations, and some artificial foods are difficult for wildlife species to digest.

Improving wildlife habitat should start with gathering information. Walk through your woodland, identify some of the wildlife species you have, and note what kind of habitat they're using. Keep in mind, you have to work with what you have and be reasonable about what types of wildlife your property can support. If you want to encourage a specific species, research its habitat needs or consult with a wildlife biologist or forester.

Protecting and enhancing certain woodland features can be very beneficial to wildlife. To encourage interior-forest songbirds, like the scarlet tanager, you can maintain mature forest and **canopy** cover. If you notice deer congregating in a dense softwood stand in the winter, protect this area during any timber harvests and maintain it for shelter. As we mentioned before, you can also plant native species of mast trees or improve the health of existing mast

sources to increase the food supply. Further, planting native nectar-producing flowers and shrubs around your yard will attract hummingbirds and butterflies. In short, there are many ways to increase the amount and diversity of wildlife on your property.



**Honey bee, ruby throated hummingbird, and eastern tiger swallowtail butterfly.
Photos: Cheri Bellavance**

For specific recommendations on habitat improvements for your woodland, consider consulting a private wildlife biologist or a Maine Department of Inland Fisheries & Wildlife biologist (see Primary Resources, page 4).

Endangered and Threatened Species

When doing work to improve your woodland, it is important to be mindful of endangered and threatened species of plants and animals. These species often have special protection under state and federal law. Working to protect the habitat of endangered and threatened species is an important part of being a responsible woodland owner. A list of endangered and threatened fish and wildlife species can be found on the Maine Department of Inland Fisheries & Wildlife website at <https://www.maine.gov/ifw/fish-wildlife/wildlife/endangered-threatened-species/listed-species.html>.

A list of rare plants can be found on the Maine Natural Areas Program website at https://www.maine.gov/dacf/mnap/features/rare_plants/index.htm.



New England cottontail.
Photo: MassWildlife

Family Pets and Wildlife

Efforts to increase wildlife numbers and diversity are more successful when landowners keep household pets under control. Even the sweetest and laziest family pets can have devastating impacts on wildlife. This is especially true during the nesting season for birds. Each year, thousands of ground-nesting birds are killed by household pets. Keeping your dogs and cats from roaming in the woods between May and late July is one of the best actions you can take to protect wildlife. In addition, small pets are just another link in the food chain when they step outside the door. Larger animals like hawks, owls, coyotes, and bobcats see them as prey. As a thoughtful landowner, consider how your pets can impact or be impacted by wildlife.

Beauty and Adventure Out Your Backdoor

Visiting natural areas makes us happier and healthier. Although all that is necessary to enjoy the outdoors is time and appreciation, there are many options to enhance your woodland and your outdoor experiences. You can use some of the suggestions below or follow your own path to enjoying the woods in your backyard.

Creating a Colorful Edge

Your lawn is really a clearing in the forest that will eventually fill in with trees if left alone. You probably like your lawn, but mowed lawns have little ecological value. If you are interested, you can improve the beauty and diversity of the open space around your home by modifying small sections of your yard.

Planting native trees and shrubs in your yard, either around the edges or throughout the lawn, can provide a variety of benefits. Trees and shrubs reduce road noise, block wind and snow, and provide summer shade. The added food and shelter that the trees offer will attract many wildlife species close to your home. Think about planting trees and shrubs in groups to be aesthetically pleasing and to make mowing easier.

If you'd like to keep open areas around your home, consider not mowing part of the lawn and allowing native grasses and wildflowers to grow in. Many species of birds use grasslands to breed and find food. You'll be amazed at the beauty of wildflowers and the diversity of wildlife that you'll attract to even small patches of unmowed lawn. To maintain the area as grass and prevent tree growth, mow once or twice a year in early spring or fall. Be careful not to mow in late spring and early summer, when many birds are nesting in the long grass.

Another place to concentrate on improving aesthetics and habitat is the edge between your yard and the woods. The yard edge can do double duty by attracting wildlife and providing year-round beauty. For instance, our native winterberry bushes retain showy red



Winterberries. Photo: Jan Santerre

berries that are eaten by many species of birds through the winter. A diverse edge can provide pale green leaves in the spring, bright flowers in the summer, blazing leaves in the fall, and showy berries in the winter.

You may also focus some effort on improving the beauty of the interior of your woods. Planting woodland wildflowers inside your woods, or in small openings in the woods, can add color and increase plant diversity.

Transplanting woodland wildflowers is not recommended, because success rates are generally low. Further, some wildflowers are protected by law. Do yourself a favor and plant woodland wildflower seeds and seedlings that are purchased from established garden centers.

When planting new trees, shrubs, herbs, and wildflowers, keep in mind that not all species grow well in every location. Consider soil type, drainage, sunlight, and other conditions before you decide what to plant. Guides to landscaping, wildlife habitat improvement, and native gardening will help in planning. Local garden centers and landscapers can also be helpful resources.

Before beginning to plant any trees, shrubs, or wildflowers, you should gather some information about native and non-native plants. The latter have served horticultural purposes for centuries and growing them is sometimes alright. However, some non-native plants become invasive. These plants grow very aggressively, outcompete native vegetation, and hurt ecological health. Even if they're not invasive, non-native plants often don't provide the same habitat benefits to wildlife as native vegetation. You can find more information in the "Invasive Species" section of this book (page 73).

Viewing Wildlife

You can easily integrate wildlife-viewing spots into the woods in your backyard. Projects can be as simple as hanging a nesting box at the edge of your backyard or as complicated as constructing a boardwalk over a small wetland. Some wildlife species, such as frogs and robins, are not easily disturbed by the presence of humans. Other species, however, require a sense of safety before they'll nest or den. They may even abandon their attempts to raise a family if disturbed.

If you know of a wildlife gathering place in your woods, consider building a natural looking blind from sticks and brush. Blinds are camouflaged viewing areas useful for both birdwatching and wildlife photography.

If you don't have a particular viewing spot in mind, think about creating a blind that allows you to observe a small field or a superior mast tree. These

structures can range from extremely simple to very elaborate. How much time and effort you put into creating a blind is up to you. For more information about wildlife blinds, visit the Audubon website and check out the great article on this topic at <https://www.audubon.org/magazine/summer-2017/windows-another-world-take-tour-bird-blinds>.



Wildlife blind. Photo: Shane Duigan

Creating Scenic Views

Sometimes, landowners remove all underbrush, rotting logs, and dead lower tree limbs in order to create a “park-like” look in their woods. Although this practice may make the woods look “tidy,” it discourages many wildlife species by removing the cover that is an essential part of their habitat. It also decreases the amount of nutrients available to return to the soil and can negatively affect tree and plant health.

Some ways to create views while maintaining wildlife habitat include:

- ❁ Select small portions of your woodland for **understory** clearing. Leave more complex stands adjacent to ones “aesthetically” improved.
- ❁ Create small openings to view landscapes and convert the openings to food plots for wildlife. This is simply an opening where grasses and herbaceous vegetation dominate.
- ❁ Properly prune mast-producing trees to enhance views, improve aesthetics, and keep trees healthy.

A Path Through the Woods: Creating Trails

With a little planning, a simple walking or cross-country ski trail requires little work to build and maintain. A loop trail that takes advantage of terrain features such as dips, slopes, and rocky outcroppings will allow you easy access to your woods. Even on small properties, a trail can provide intimate access into the woods and an opportunity to view wildlife and scenery close to home.



Walking trail. Photo: Dan Jacobs

The following are some tips to consider when planning a trail:

- ❁ Assess the trail location in the fall and spring to determine the need for surfacing material or a boardwalk in wet areas.
- ❁ Keep in mind, low areas may become wet and muddy.
- ❁ Winter use may require the pruning of trailside trees to a greater height.
- ❁ Ski trails should be designed with gentle curves for easy turning.

If your property is adjacent to existing trails or is part of a larger woodland, your neighbors may be interested in helping to create a longer community trail.

Simple Enjoyment

Although you can actively work on your woodland in many ways, from gardening to creating vistas and trails, you needn't do any of these things to enjoy the natural beauty. Simply going into the woods to look, listen, and take in what is around you can be a tremendous joy and a source of peace. In fact, many people just enjoy looking out their kitchen window at a beautiful tree. In short, take the opportunity to enjoy your woods whenever you have extra time or need a break.

Producing Specialty Products

Specialty products are non-timber commodities that can be derived from the forest and sold. There are many products, such as medicinal plants and maple syrup, that fit into this category. In this section, we will focus on wreath brush, maple syrup, and Christmas trees.

Wreath Brush

Balsam fir is the most popular species for making wreaths in Maine and it grows very well across much of the state. If you have balsam fir trees growing on your property, you may be able to gather wreath brush to sell or for personal use. There are many large and small wreath makers located around the state and finding one to purchase your brush should not be too difficult. Many wreath makers attend local craft fairs to sell their products and to network. Attending one of these events and talking to wreath makers may be a good place to start your journey.

To find quality balsam fir trees on your property, look along field edges or in open areas within your woods. If you are lucky, you will find a group of balsam fir trees with easy-to-reach, live lower branches. Under the right conditions, these trees can provide you with brush for years to come. Making sure that each tree has plenty of room to grow and is receiving good amounts of sunlight, is essential to producing quality brush into the future. If you do not have balsam fir trees growing on your property, you may consider planting some in an open field or a little-used section of your lawn. For suggestions on planting balsam fir, review the “Christmas Tree Production” section of this book (page 42).

Gathering wreath brush, or tipping, is very easy and can be a good way to get outside and enjoy nature. You can start collecting wreath brush around the beginning of November when the trees are dormant.

Needles that are mostly flat are preferred for wreaths. Fortunately, these types of needles are often found on branches that are within five feet of the ground. When gathering brush on cold days, the tips of



Collecting wreath brush. Photo: Nick Woodward

branches can be broken off quite easily. If they are not easy to break, you can remove the tips with pruning clippers. Keep in mind, you only need to remove one to three feet of each branch when gathering brush for wreaths. Because wreath brush is usually purchased by the pound, you will probably need a pickup truck or trailer to deliver it to a buyer.

If you have softwood trees growing on your property, and you are frugal, you might consider leaning some evergreen brush up against the side of your house for insulation. When the snow finally comes, this will protect the basement wall and lower section of your home from winter winds. If you're a gardener, brush can be used in place of straw to cover bulbs in the fall. Whatever use you find for evergreen brush, it's abundant in Maine and will likely remain in great supply for generations to come.

Please keep in mind that collecting wreath brush on someone else's property requires written permission. More information on this topic can be found in the MFS publication *The Forestry Rules of Maine* (see page iii).

Maple Syrup

For New England's earliest settlers, maple sugar was often the most available sweetener. Although probably a myth, people have said that a Pilgrim breakfast sometimes included popcorn in milk sweetened with maple sugar. Today, syrup and other maple products from Maine are sold to people all over the world. Maple syrup production is a growing industry, and small woodland owners can participate in this rewarding activity and the expanding maple marketplace.

The raw ingredient of pure maple syrup is sap from maple trees. Although sugar maples are preferable for their higher sugar content and other attributes, the sap of red maples will suffice. For personal use, 12 healthy trees will probably produce 2 plus gallons of syrup per year. A small commercial operation requires at least 1 or 2 acres stocked with 50 to 75 maple trees on each acre.



Sugar maple. Photo: MFS

To gather sap, drill a small hole approximately 2 to 2½ inches deep in a live tree and hammer in a spout (also called a tap or spile). The size of the drill bit will be 5/16 or 7/16 inches and depends on the size of spout used. This activity is known as tapping. You should only tap trees larger than 10 inches in diameter and install one tap per tree. People frequently gather sap with special buckets or bags that hang from the taps. Commercial producers typically use a tubing system, that operates by gravity and vacuum, to collect large volumes of sap.

Sap runs in the spring when the nighttime temperature is below freezing and the daytime temperature is above freezing. This “rule of thumb” is a very simplistic description of the conditions necessary for sap flow, because other weather-related factors also play big roles. In Maine, the sugaring season typically starts in March and ends in April. The timing varies.

The amount of sap required to make a gallon of syrup depends on the sugar content. For sap with a 2% sugar content, you’ll need 42 gallons to make 1 gallon of syrup. Generally, an average sugar maple will yield about one quart of syrup per year.



Collecting sap. Photo: Allison Kanoti

To produce syrup, boil raw sap until it has the desired sugar content. In Maine, sap becomes syrup when it reaches approximately 66% sugar. Two widely-used methods for measuring the sugar content of “syrup” are described in Bulletin #7036 (see information on the next page). Because making syrup requires large quantities of sap, boiling must take place outside or in a dedicated building called a sugarhouse. Professional sugarmakers use special equipment, such as evaporators, to boil sap. Small producers often use large kettles or flat pans to boil sap on an open fire. In addition, many sugarmakers produce a range of maple products from their syrup including candy, cream, and jelly.

To sell maple products in Maine, you must obtain a license from the Department of Agriculture, Conservation and Forestry. All license holders must follow syrup grading and labeling requirements. The grade of maple

syrup takes into account the color, density (sugar content), clarity, and taste of the finished product.

For a taste of sugarmaking, visit your local sugarhouse on Maine Maple Sunday—the fourth Sunday in March each year. A list of participating sugarmakers is available on the Maine Maple Producers Association website at <https://mainemapleproducers.com/>.

Before you start making syrup for the first time, consider reading:

- ❁ MFS’s “Information Sheet 27: Making Maple Syrup for Fun and Profit” at https://www.maine.gov/dacf/mfs/publications/information_sheets.html.
- ❁ The University of Maine Cooperative Extension’s Bulletin #7036 “How to Tap Maple Trees and Make Maple Syrup” at <https://extension.umaine.edu/publications/7036e/>.

Christmas Tree Production

Introduction

With a little planning and hard work, the small woodland owner can grow Christmas trees for personal use or for added income. Balsam fir is the most popular species grown for Christmas trees in Maine. It has a pleasing conical shape, fragrant foliage, and soft needles. Because balsam fir is native to Maine, you may be able to find suitable trees on your property. Many people choose to transplant naturally growing seedlings to raise as Christmas trees. Other people prefer to purchase their seedlings from forest nurseries located throughout the northeast.

Selecting the Planting Site

Small woodland owners often use old fields or openings in the forest to grow Christmas trees. This is easier than working to create an opening in a completely wooded area. The quality of the site used to grow your trees is critical for success. Balsam fir are generally the most healthy on moist, well-drained sites. For the greatest success, you should avoid planting in the following areas:

- ❁ Excessively drained soils prone to drought
- ❁ Poorly drained or wet soils
- ❁ Areas exposed to excessive sun and wind
- ❁ Low-lying areas likely to experience late season frosts

To ensure that your site is fertile enough to grow Christmas trees, you may consider sending a soil sample for analysis. You can get a soil testing kit from the University of Maine Cooperative Extension offices (see Primary Resources, page 5). It is inexpensive and easy to send soil samples for analysis, and the lab will provide suggestions to help you improve your soil.

Preparing the Site

It is common to plant Christmas trees in rows to make caring for the trees easier. Typically, the rows are five feet apart and the trees planted in each row are five feet apart. If you are planning a larger plantation, try to provide a wide path for equipment every few rows. Each planting location will need to be treated chemically or mechanically to remove existing vegetation prior to planting. For chemical treatment, it is often best to hire a licensed pesticide applicator. A list of applicators is available from the Maine Board of Pesticides Control (see Primary Resources, page 4). Mechanical treatment involves removing the sod and weeds from the planting location with a shovel or small tractor. Using either method, treat at least one square foot for each tree. If the area you intend to plant contains woody brush, it must be chemically treated prior to planting. Woody brush is very prone to sprouting when it is mechanically cut, and this makes the use of herbicides almost unavoidable.

Planting Christmas Trees

As mentioned previously, balsam fir seedlings can be purchased from forest nurseries or transplanted from other locations on your property. Containerized seedlings, purchased from established nurseries, offer the best opportunity for success. They can be purchased in trays that contain many seedlings for very reasonable prices. Although they must be watered until planting, containerized seedlings are generally easy to care for.

If you are interested in minimizing costs, you may be able to transplant small tree seedlings to grow as Christmas trees. This means digging up seedlings from around your property and planting them in your Christmas tree plantation or a transplant bed. If you decide to transplant seedlings to grow as Christmas trees, get advice from other growers or from the Maine Christmas Tree Association (see Primary Resources, page 4).

Spring planting is highly recommended for two reasons. First, there is usually plenty of moisture in the soil at this time of year. Second, spring planting allows your trees' roots to develop and build mass prior to the onset of winter. In short, you will have the greatest success by planting in the spring after the last hard frost.

To guarantee that you have trees ready for harvest year after year, it is important to stagger your planting. In other words, plant some trees each year for several successive years. It is also prudent to plant a few extra trees each year to compensate for those that do not survive.



Christmas trees. Photo: Jan Santerre

Videos on proper planting procedures can be found on the Arbor Day Foundation website at <https://www.arborday.org/trees/index-planting.cfm>.

A helpful tree planting publication is Penn State Extension's *Forest Landowners Guide to Tree Planting Success* (see <http://extension.psu.edu/forest-landowners-guide-to-tree-planting-success>).

Tending Christmas Trees as They Grow

The top five items that must be addressed as your Christmas trees grow are fertilization, weed control, protection from pests, corrective pruning, and shearing. The following is a brief description of each:

- ❁ **Fertilization** should start the year following planting. The type and amount of fertilizer applied will be included in the recommendations made by the soil testing lab. Usually a small amount of granular fertilizer (such as 10-10-10) spread around each tree is sufficient.
- ❁ **Weed control** will be necessary each summer. If your trees are planted in rows, you can consider mowing. For landowners growing a small number of trees, a weed trimmer may be sufficient—just be careful not to damage the bark by trimming too close. Herbicides can also be

extremely effective but require the user to follow the product label and safety precautions. You can get guidance from licensed pesticide applicators, the Maine Christmas Tree Association, or the Maine Board of Pesticides Control (see Primary Resources, page 4).

- ❖ **Forest pests** such as spruce budworm, balsam twig aphid, and balsam gall midge can cause significant damage to balsam fir Christmas trees. These insects can damage foliage and make your trees unsuitable for sale or personal use. Contact the MFS Forest Health and Monitoring Division (see Primary Resources, page 3) for assistance with the identification and control of these pests.
- ❖ **Corrective pruning** is often necessary to address growth deformities. It is common for balsam fir to have multiple leaders (tops). With a good pair of bypass pruners, it is easy to remove all but the most vigorous leader. Other corrective pruning measures are learned through experience, research, and consultation with other growers.
- ❖ **Shearing Christmas trees** is similar to trimming shrubs and is done to create trees with a desirable shape. Shearing is commonly done at the end of the growing season. Various tools can be used, but hand shears are probably the safest for beginners. As with corrective pruning, proficiency in shearing will come with experience, through research, and through consultation with other growers.



Shearing. Photo: Callnan Family Christmas Trees

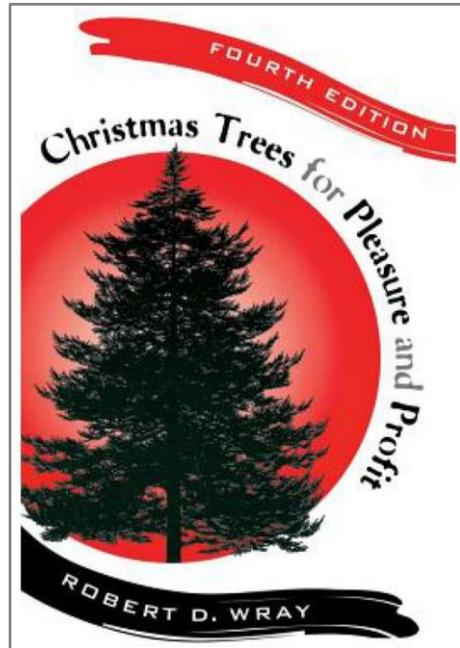
Grading and Harvesting Your Christmas Trees

Once you have quality trees that are large enough, you can begin harvesting for personal use or for sale. It usually takes six to eight years from the time of planting until the first harvest. The grading of Christmas trees refers to rating them for quality. Some trees will have deficiencies in terms of shape, taper, color, or fullness that makes them less appealing and less suitable for sale. Again, proficiency in grading will come with experience, research, and working with other growers.

Christmas trees are typically harvested starting in early November. It is best to cut the trees as low to the ground as possible to facilitate replanting. Once the tree is cut, the lower branches should be removed to create a one-foot long handle. As you are cutting and transporting your trees, be careful not to damage the branches or trunk. Trees with noticeable damage will be much harder to sell. If you plan to produce a large number of trees for sale, you might consider purchasing a **baler**. Balers are specialized pieces of equipment used by commercial growers and can often be found used at reasonable prices.

In short, raising Christmas trees can be fun and profitable. With a little effort, even a small woodland owner has the ability to raise a few trees for personal use.

For additional information, see *Christmas Trees for Pleasure and Profit* by R. D. Wray (2008), available in various formats from online retailers or by asking your local bookseller.



Do You Know?

#2 The name of the highest mountain in Maine?

Answer on page 120

Backyard Family Activity #2: Making Maple Taffy



Aside from profit, a big part of making maple syrup is having fun with your family, friends, and visitors. Most commercial sugarhouses are open to the public on Maine Maple Sunday. Maple producers use this day to educate the public, show off their operations, and sell syrup and other maple products. Products other than syrup that are produced by Maine’s sugarmakers include hard candy, jelly, butter, and granulated sugar. Taffy is one of the easiest maple treats to make, and sugarmakers often give out samples on Maple Sunday. Making taffy with your family is a great introduction to value-added maple products.

Items Needed

- 🍁 A pint of Maine maple syrup
- 🍁 Outside table
- 🍁 Cookie sheet
- 🍁 Snow or shaved ice
- 🍁 Popsicle sticks
- 🍁 A candy thermometer

Getting Ready

1. If possible, visit a local sugarhouse and purchase a pint or quart of syrup. A great time to visit is during Maine Maple Sunday. Get a list of participating sugarhouses at <https://mainemapleproducers.com/>.
2. In the event that your local sugarhouse is closed for the season, you can purchase Maine maple syrup at many grocery stores. Avoid products labeled “pancake syrup”—they aren’t pure maple.

The Activity

In this activity, you will use Maine maple syrup to make delicious maple taffy.

Timeframe

30 minutes with all materials in place.

Steps

1. Place the cookie sheet on a table outside and fill it with two to three inches of snow or shaved ice. You may also use blocks of ice on a cookie sheet.
2. Heat a pint of maple syrup to 234°F on your stove to make taffy on snow or shaved ice. Heat the syrup to 236°F to make taffy on blocks of ice. Overheating will only change the consistency of the taffy.

Tip #1: Use a pot with at least twice the volume of the syrup you're heating.

Tip #2: Have some butter, margarine, or maple defoamer on hand in the event that the syrup starts to boil over.

3. Pour the heated syrup in thin lines or ribbons across the snow or ice.
4. Wind the cooling syrup around a popsicle stick by placing the end of the stick in a line of syrup and rolling it over and over. Doing this will produce taffy on a stick.
5. Eat and enjoy! Don't forget to clean up any spilled syrup to avoid attracting nuisance animals to your backyard.



Making maple taffy. Photo: Spring Break Maple and Honey

Backyard Family Activity #3: Plant a Hard Mast Species



Mast is the botanical name for the nuts, seeds, or fruits of trees and shrubs that are eaten by wildlife. Hard mast includes nuts and seeds such as acorns, hickory nuts, and walnuts. Mast trees can serve as a food source for wildlife while providing you with many other benefits. Planting a mast tree in your yard can provide you with shade on hot summer days and can help beautify your property. Although there are many species that can be planted to provide food for wildlife, planting a native species is the best option for wildlife and for optimal tree growth. For example, northern red oak grows well throughout the state, has red leaves in the fall, and produces nutrient-rich acorns.

Shagbark hickory, black walnut, and disease-resistant chestnuts are other good options. Visit your local garden center to check out some native mast-producing species and don't forget to have fun planting your tree with family and/or friends.

Items Needed

- Tree(s) for planting
- Digging tools (spade, shovel)
- Garden soil
- Compost
- Mulch
- Stakes and canvas webbing (suggested only for trees requiring staking)
- Bypass pruning shears

Getting Ready

1. Select a location. If possible, the planting site should be sunny and not too wet. Assess the site for obstacles by first looking up—avoid planting too close to overhead wires, other trees, or buildings. Your tree will grow. Therefore, select a site at least 3' from pavement or fencing, 15' from buildings or other trees, and at least 25' from overhead electric wires. Check the planting site for underground utilities and contact Dig Safe at 811 (or 888-DIG-SAFE) at least 72 hours before planting.
2. Select a tree. Take time during the winter months to look at online nursery catalogs and tree guides to make sure you select the right tree for your location. It is often best to preorder trees through local nurseries in the winter to get the best selection of species. It is also a good idea to speak with the nursery staff about the types of trees best suited to your

planting site. Many factors, in addition to the site, can also contribute to the species of tree you select. These factors include the type of wildlife you hope to attract (or not attract!), susceptibility to health problems, and tree features such as flowers. While larger caliper trees may make a more immediate impact on your landscape, smaller 10- to 15-gallon containerized trees are best for this activity. One person can transport a smaller tree without large equipment, and the planting hole will be manageable to dig with hand tools. To get the best results, make sure the tree you select is free of common problems such as crossing and rubbing branches, damage to the trunk, and evidence of insect and disease problems.

The Activity

The purpose of this activity is to plant a mast-producing tree that will benefit wildlife on your property.

Timeframe

30 minutes once the tree is at the planting site.

Steps

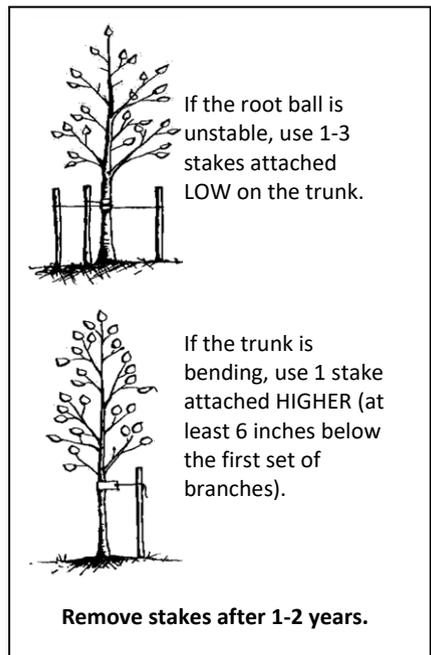
1. Move your tree to the planting location, and remember trees are not 2x4's. Lift or carry your tree by its root packaging, most likely a planting pot, rather than by its trunk or branches. Once at the planting location, remove all trunk and branch packaging including trunk wrap, twine around the branches, and tags. Prune any broken or dead branches while you are able to easily reach them.
2. When you are ready to begin digging the planting hole, remove the root packaging. This is necessary to assess the root ball and take some measurements. These measurements will help you to dig a properly sized planting hole. The depth of the planting hole should be the same as the height of the root ball. The width of the planting hole should be two to



Northern Red Oak. Photo: Dan Jacobs

three times the width of the root ball measured at the widest point. The process of digging an appropriately sized planting hole is described well in the USDA Forest Service's *Tree Owner's Manual* (see <https://www.fs.usda.gov/naspf/publications/tree-owners-manual-national-edition>).

3. Gently place your tree in the center of the planting hole and check that it is straight from two different angles. Backfill the hole with the original soil if possible. If there is not enough, mix the native soil half and half with organic garden **topsoil** and compost. Fill the planting hole to the top of the root ball and break up any soil clods. Then water the root ball and the entire backfilled area.
4. Once the soil is settled at the correct planting depth, add a two- to four-inch layer of mulch over the entire planting area. More mulch is not better, because it can prevent the roots from getting oxygen. In addition, piling mulch on the trunk is an invitation for pests and can encourage decay.
5. If your tree is unstable or in a very windy area, you can use one to three stakes and canvas straps attached loosely on the trunk to anchor it (see the USDA's diagram on this page). Be sure to remove the stakes and straps in one to two years.
6. Watering your tree can be the most important thing you do to ensure its survival. For the first three years, regular weekly watering throughout the growing season is recommended. Apply 1.5 gallons of water for every inch of trunk diameter. Less water is needed during periods of rainy weather.
7. Installing a trunk guard made of plastic tubing or wire mesh will keep small mammals from chewing the bark during the winter. Make sure the guard is not in contact with the bark, and that you remove it in the spring. Finally, review the USDA Forest Service's *Tree Owner's Manual* for guidance on tree care after planting.



Tree stakes. Source: USDA