Spring/Summer 2015

# The Boreal Forest *eNewsletter*

**Interior Alaska Forest Science, Management Practices and News of Interest from the University of Alaska Fairbanks Cooperative Extension Service**

***From the editor:***

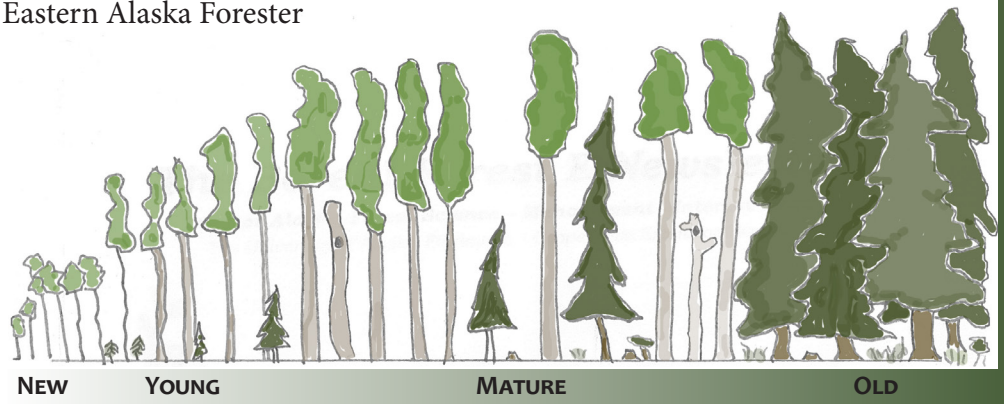
Spring is finally in the air in most of Interior Alaska after a relatively mild winter with little snow in most places. Many woodcutters prefer the long, cold days of early spring to get their next season's firewood. No bugs, gardening, hunting or fishing — early spring is the best time for getting firewood and keeping it clean and out of the mud.

Firefighters and forest fire managers are trying to figure out what the winter season will mean with regard to the coming wildland fire season. We will have a better report on that in the next newsletter! Suffice it to say, with little snow to recharge surface moisture, it could be another active year for wildfire throughout the state. Be careful out there!

In this edition of the newsletter we will look at the balsam poplar tree in Interior Alaska. There is also a new section about citizen science opportunities; articles about which trees to cut for forest/yard improvement, spring pruning, den trees for wildlife; and information about classes on log cabin building, becoming a tree steward and two tree sales in Interior and South-central Alaska.

Have a great spring and summer! Be careful with fire — this year could be a bad fire season!

Glen Holt
Eastern Alaska Forester




## What's Inside



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## Managing Your Forest Den Trees

*Glen Holt, Eastern Alaska forester, UAF Cooperative Extension Service*

So, how many dead trees should you leave, and where should you leave them? The answer depends on the part of your forest that has wildlife-loving trees that can be left and on your commitment to nongame wildlife management.

Larger den-dependent mammals prefer tall snags that are over 15 inches dbh (diameter at breast height). Larger climbing mammal species seek cavities that are created by woodpeckers. Many trees have basal or bole cavities from past injury and wildfire. Some wildlife prefer those cavities.

You should try to leave as many snags as possible on your land, remembering that a larger den tree will also stand longer, decay more slowly and have a greater benefit on the local ecosystem than smaller snags. Snags can often be too dangerous to cut down, and snags of the softer woods like aspen or poplar make poor firewood and are often rotten. However, dead standing spruce can make excellent firewood and building logs.

**Retaining dead snags for nesting habitat is good forest wildlife management.**

**Northern hawk owl**

Consider the amount of snag decay when making your own forest management decisions. Depending on the animal species in your area, you may decide to leave a variety of spruce and hardwood snags. Some animal species need trees that are partially alive, so a really poor looking tree may have more value as a den tree than as firewood. Most den trees are living trees where the heartwood has decayed to create cavities or dead trees that are rotten enough that cavity nesters can make homes within the trunk. Some cavity nesters cannot make their own cavity, so they rely on the larger woodpeckers to construct a cavity that they can move into when the woodpecker moves on.

### Tips for Locating Your Den Tree

Here are some suggestions that may help you improve wildlife nesting opportunities in your forest.

- Maintain two to four large den trees per acre if possible to benefit wildlife.
- Leave more snags to decrease competition for nesting, foraging and roosting sites.
- Retain living trees with existing cavities.
- Leave about 10 to 20 smaller ( less than 12 dbh) cavity tree candidates per acre for the future.
- Do not leave logging debris deeper than 8 inches near wildlife den areas.
- Determine if a snag presents a substantial hazard to forest workers or property.
- Install nest boxes as cavities for some species.

Species of wildlife that depend upon snags and the cavities for reproduction include:

- Birds such as woodpeckers, chickadees, nuthatches
- Red and flying squirrels
- Honeybees and wasps
- Tree-nesting waterfowl
- Small hawks and owls

## Prune in Early Spring

*Stephen Nickel*

Winter is still holding on in Alaska, but the days are getting longer and many of us are eager to get outside. Now is the time to get out and prune your young trees and take advantage of their leafless canopy (deciduous trees, anyway). Though the weather may not be as inviting as it is in the summer months, from the trees' health perspective this is the best time of the year to give them the training they need.

The goal of training trees while they are young is to establish evenly spaced scaffold branches, create strong structure and reduce future maintenance needs. It also minimizes the injury to the tree by creating smaller wounds that close more easily.

With the leaves gone, it is easy to inspect all of the branches and how they attach to the trunk or parent branch. Generally, the closer the angle of attachment is to 90 degrees the stronger it will be. Look for and prune out branches that have very narrow angles of attachment or those with included bark (no branch bark ridge). It is also easy to identify and remove any crossing or rubbing branches in the crown that can cause repeated injury to the tree.

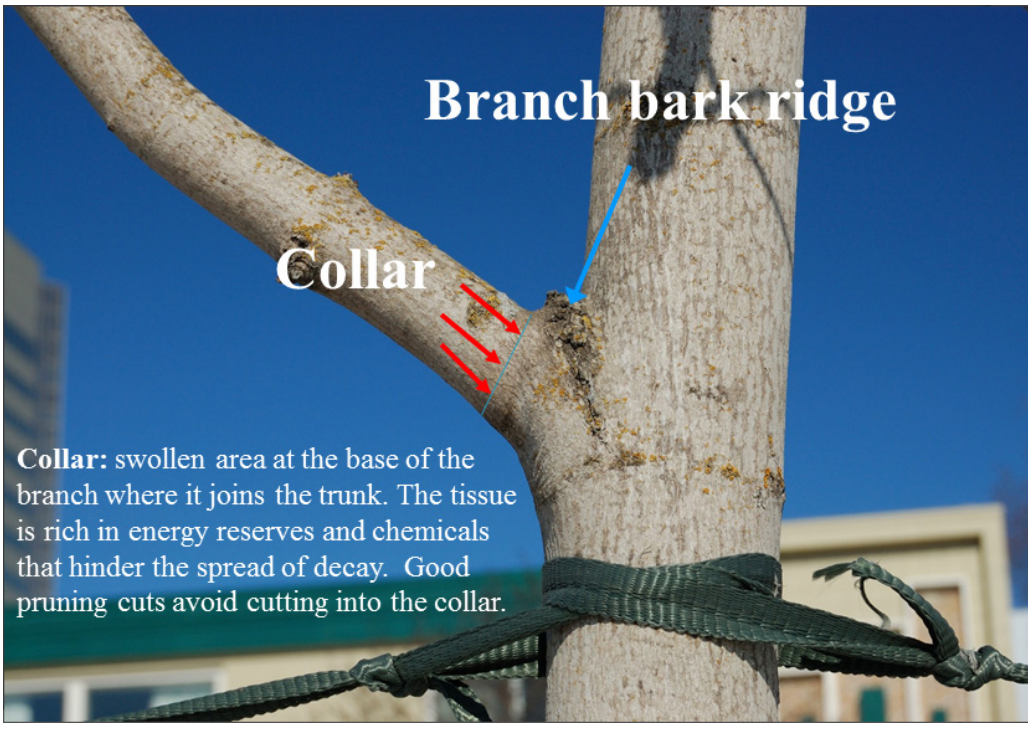
The key to any pruning is to preserve the tree's natural shape,while establishing well-spaced scaffold branches, strong branch attachments and a strong central leader. When pruning off branches, it is important to make a proper cut. The final cut should be made outside of the branch collar (the swelling at the base of the branch where it enters the trunk or parent branch) and preserve the branch bark ridge (the ridge of bark pushed up between the branch collar and trunk or parent branch).

Trees in the urban environment or residential settings need special care because we live work and play under and around them. For this reason they must be trained to grow into structurally sound trees. A young tree should be pruned three to five times in the first 15 years after it is planted, depending on its growth rate and species. Remember that training a tree takes time, and you cannot fix everything all at once.

More information about planting and caring for trees can be found on the Alaska Division of Forestry Community Forestry Programs website at http://forestry.alaska.gov/community/publications.htm.

*Stephen Nickel is the community assistance forester and Mat-Su stewardship forester with the Alaska Division of Forestry. He is an ISA-certified arborist and is ISA tree risk assessment qualified.*

*Funding for the Alaska Community Forestry Program and Forest Stewardship Program is provided by a grant from the USDA Forest Service.*



## Log Cabin Building Class

The University of Alaska Fairbanks Cooperative Extension Service will hold a hands-on class in building an energy efficient, green, full-scribe log structure May 6-29 in Palmer.

The workshop will be taught by Robert Chambers, an authority on handcrafted log home construction. The classes are facilitated by UAF assistant professor Valerie Barber. Basic procedures and techniques will be described and practiced to help even the novice get started with a project. Building an energy-efficient log home requires the highest level of craftsmanship to meet modern standards of airtightness, indoor air quality, safety, comfort and durability.

Instruction includes safety, chain saw use and maintenance, a cutting demonstration, practicing notches, ripping and scribing logs, and building roof trusses. The final product will be a log shell with roof trusses. Cost of the workshop is $2,000 and registration is available here.

Chambers has been building log homes since 1983 and teaching log construction since 1988. He is the author of the bestselling log home construction textbook and DVD, *Log Construction Manual*, and the inventor of log construction methods, products and machinery.

The workshop will be held at the Matanuska Experiment Farm, 1509 S. Georgeson Road. For more information, contact Val Barber at 907-746-9466 or vabarber@alaska.edu.

**A log cabin built at a previous workshop**

## Which Tree to Cut?

*Glen Holt, Eastern Alaska forester, UAF Cooperative Extension Service*

Forest landowners in Alaska often find they have trees they can use for firewood or other products. Preserving trees forever seldom works in the natural world. I am often asked, "Which trees should I cut to improve my forest and provide some firewood or saw logs".

Trees naturally succumb to wind throw, snow bending, insects, old age, rot and disease. Individual trees do not remain forever, even as the whole forest may continue.

Many landowners enjoy a diversity of forestland interests and have enough trees/property to provide far more than a woodpile. On small acreages it may be impossible to provide an entire season's worth of firewood, but having forestland provides the owner with a safety net, energy security and a means to turn dead and damaged timber into firewood and other useful products.

Forest landowners often own their land for privacy, wildlife watching, hunting, gathering plants and berries, scenic and aesthetic qualities and personal space to recreate, etc.

During site visits I encourage the owner to first cut those trees that have fallen, are snow bent, have been killed by insects, are declining due to rot or old age, or are a threat to their home and buildings. As the forest grows, we can look at other trees to harvest later on and discuss the results of overharvesting the woodlot.

Creating and maintaining defensible space from encroaching wildfire is an important consideration. In addition to around your home and buildings, don't forget to create defensible space on either side of your driveway. Firefighters can't save your home if it is too dangerous to get to.

Call Glen Holt, Extension forester, at 907-474-5271 to do a free forest site visit with you on your property.

Following is an article by a newsletter reader showing us how to manage our woodpiles to maintain a steady supply of seasoned firewood without mixing them up. Thank you, Nancy!

## Labeling Numerous Woodpiles

*Nancy Hummel*

Materials:

- Large lids from margarine container, nut can, yogurt container
- Hole-punch
- Twist ties
- Large permanent marker
- Packing tape to cover/protect the permanent marker from "evaporating"
- ½-inch-thick stick, 1-2 feet long



**Photos by Nancy Hummel**

Procedure:

1. Use the hole-punch to make a hole, as far in as you can, on the lid.
2. With a thick permanent marker, write the winter dates that the wood will be dry and able to be used (20% or drier). Maybe you've found it takes only one year to season, so put label it 15-16.
3. Cover the permanent marker writing with packing or book tape so the ink doesn't disappear.
4. Put the twist tie through the hole in the marked lid.
5. Put the lid around the end of the stick with the twist tie.
6. Place the stick into the woodpile about half-way up the pile (above snow depth but below tarp convergence) so you can read it all year long.

### Community Forestry

**Trees** add more than color and beauty to our towns. Trees and other plants reduce runoff, prevent soil erosion, and keep the water in our rivers and lakes clean. Stands of trees divert the force of strong winds and filter dust and other air pollutants.

Trees provide screening, absorb noise, and can act as buffers between different land uses. Forests provide homes for birds and wildlife and natural places to recreate. They bring nature into our neighborhoods.

**Community (urban) forestry** is the care of the forests and trees that share space with humans. Urban forestry includes aspects of arboriculture, ecology, horticulture, landscape architecture, and urban planning.

**Community Tree Stewards** provide care that is crucial to the health of community trees and forests, share information, and promote the benefits of urban tree management.

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Alaska Community Forestry Program

**Supporters of the Fairbanks course**

Alaska Community Forest Council
UAF Cooperative Extension Service

*The Alaska Community Forestry Program receives financial support from the USDA Forest Service*

## Tree Feature: Balsam Poplar

*Populus balsamifera*

An increasingly important tree species within the hardwood forest of Interior Alaska, the balsam poplar, reaches its greatest size and abundance along flood plains of large, meandering glacial rivers. It can also be found on road sides, abandoned agricultural areas, cleared lots, gravel pits and mine tailings, where exposed, well-drained, permafrost-free mineral soil occurs.

Balsam poplar invades newly deposited sand bars on river channels; the cottony seed needs to land on bare mineral soil to regenerate.

At best, poplars grow quickly to 80 to100 feet tall with a diameter of 24 inches or more. Older stands thin out and are replaced by white spruce, which grows up beneath the shade of the poplar. Stands of poplar typically do not live as long as white spruce. After 80 years, poplars gradually decline in vigor, succumbing to trunk rot and top damage. However, in certain locations along the Susitna and Yukon rivers stands can reach 200 years of age (it is seldom possible to measure their age accurately because of rot and hollowness). Large poplar are often confused with cottonwood, which grows farther south than Interior Alaska.

Commercial stands of balsam poplar occupy 2.1 million acres, primarily along the Yukon, Tanana, Susitna and Kuskokwim rivers. In the Susitna Valley, balsam poplar is often mixed with by black cottonwood or hybrids of the two species. Cottonwood, however, do not grow much farther north than Southcentral Alaska, in the Susitna Valley.

On poor soils, at higher altitudes and farther north in its range, balsam poplar stands are medium-sized, averaging 30 to 50 feet tall with trunks 4 to 9 inches in diameter. These smaller stands are the farthest-north-growing tree in Alaska; balsam poplar is the northernmost American hardwood.

Leaves have slender petioles 1 to 2 inches long. Petioles are round and finely hairy. Leaf shape can

**Balsam poplar leaves have two tones top & bottom**

**Winter balsam poplar twigs**

range from oval to broadly lanced shaped, 2½ to 4½ inches long and 1½ to 3 inches wide. The leaves are mostly pointed at the tip, rounded at the base, hairless, shiny dark green above and pale green to rusty brown beneath.

Twigs are red brown and hairy at the tips of branches when young and they have prominent raised leaf scars that show three dots in the center. More mature twigs are gray colored.

Winter buds are large, often shiny and nearly 1 inch long in some cases. They are long-pointed, sticky or resinous and covered with shiny brown scales, and they give off a pungent balsam odor that permeates the air in spring.

Bark is a light gray to gray on twigs and younger growth tree trunks, becoming rough, thick and deeply furrowed at the base of the tree and up the trunk as the tree matures and becomes larger.

Flowers form in catkins up to 6 inches long from late May through June and give off cottony seed that blows throughout the area in early summer.

Balsam poplar outgrow all other tree species in the Interior, producing more wood and biomass in a shorter amount of time than other tree species. Poplars require full sunlight to grow best. Large poplars may become important nest sites for bald eagles. Stands are often found in association with white spruce, birch and aspen. Non-commercial stands are also found in and north of the Brooks Range, growing best along river bottoms and in small, wet, upland areas in association with willows.

**Seed forms in cottony catkins that fall or blow from the tree.**

Poplar grows back well after clear cutting because of its ability to resprout from stumps and roots and its need for full sunlight. Logging to take advantage of sprouting is best done in winter, when much of the sap is back in the root system. Clear cutting is the preferred method of harvest. Summer harvesting suppresses the ability of the stand to regenerate by sprouting, so site preparation treatments to expose mineral soil to seed fall/germination is critical when logging a poplar stand in summer.

Non-rooted, dormant winter cuttings do well when planted in mineral soil before spring leaf out. Stem cuttings stuck in bare mineral soil will root and grow if soil moisture is available in the early stages of root development.

**Unrooted cuttings harvested in winter and kept in a freezer are ready to plant the following summer.**

Balsam poplar is rated as the least-preferred moose browse species in Alaska. Bark stripping by moose occurs on some poplars in times of winter food shortages. Snowshoe hares will browse older stems and twigs. Beavers use the species for food and building materials.

Balsam poplar is an underutilized timber tree species. It has the potential to provide renewable supplies of wood biomass, replacing expensive fuel oil for heating. Where it is found growing well, it has the potential to out-produce every other tree species in Alaska by weight and volume. This species is highly sustainable when harvested in winter, and stands have been known to produce trees 18 inches in diameter in only 35 years.

Researchers with the University of Alaska Fairbanks and the State Division of Forestry are currently looking into growing stands of artificially regenerated balsam poplar as short-rotation woody biomass for use in wood heating systems. Research is also underway to determine which varieties of hybrid poplar common to the northern U.S. and Canada will work in Alaska's harsher and cold-limiting climate.

Balsam poplar is used in Alaska for lumber, fencing, siding, cabin logs, crating and firewood. Uses in the Lower 48 include pulp, particle board, veneer, furniture core stock, boxes, crates and wafer board. Balsam poplar is also used for soil stabilization and windbreaks.

## References

Viereck, L.A. and E.L. Little. 2007. *Alaska Trees and Shrubs*, 2nd Edition. University of Alaska Press.

Zasada, John C. and Howard M. Phipps. 1990. *Populus balsamifera* L. Balsam Poplar in *Silvics Manual of North America, Vol 2*. R.M. Burns and B.H. Honkala, U.S. Department of Agriculture, Forest Service, Agriculture Handbook 654.

**Harvest dormant poplar cuttings taking stout sticks about 8 inches long with good buds.**

# Citizen Science Programs

Increasingly, Alaskans are interested in what they can do to add to increase our knowledge of the natural world. Some projects help forest managers and scientists gather information about the Alaska landscape. This is called citizen science. In this edition of the Boreal Forest eNewsletter, Nicholas Lisuzzo, a Fairbanks-based biological science technician with the U.S. Forest Service, talks about a program that may be of interest to private citizens and students throughout the state. For more information about the program, Check out the link at the bottom of the article. Thank you, Nick! There is also an article about Alaska Department of Fish and Game grouse surveys in the Tok region of Alaska.

## Early Detection of Bark Beetles

Early Detection Rapid Response (EDRR) monitoring for exotic bark beetles began in 2002 as a cooperative effort between the Alaska Division of Forestry and the USDA Forest Service. Beetle traps baited with attractive compounds were initially concentrated near potentially high-risk sites in Anchorage, Fairbanks and Juneau.

In 2009, an effort was made to expand monitoring to land and water ports of entry outside the main population centers with the help of additional partners from Animal and Plant Health Inspection Service/ Plant Protection and Quarantine, Customs and Border Protection, Fish and Wildlife Service, Alaska Division of Agriculture, Alaska Native corporations, Natural Resources Conservation Service, private citizens and others. Currently, there are 14 EDRR beetle trapping locations throughout Alaska, from Juneau to Dillingham to Fairbanks and numerous places in between. Each is monitored for invasive bark beetles following the methods developed by the national EDRR program. Approximately 100,000 bark beetles and wood borers have been identified to the species level since the start of the program.

Non-native bark beetles have not yet been detected in Alaska. However, given the extensive transportation of people and goods from the Lower 48 and abroad, there is a substantial risk for the introduction of new pests. We only have a handful of tree species in Alaska. If we get a pest that really hurts one of them, it could dramatically change the landscape.

Are you interested in learning more about our native bark beetles? Do you want to help with the early detection of non-native bark beetles? If so, there is a great citizen science program called Backyard Bark Beetles. Check the website for instructions on how to build your own bark beetle trap and get an expert to identify your samples. You, too, can help protect Alaska from exotic bark beetles!

Find out how at www.backyardbarkbeetles.org/.

**A beetle trap with pheromones installed to catch bark beetles. Volunteers collect the bugs and send them to Forest Service Scientists for evaluation.**

## Forest Grouse Surveys in Tok: a Citizen Science Opportunity

*Glen Holt, Eastern Alaska forester, UAF Cooperative Extension Service*

The UAF Cooperative Extension Service has been partnering with the Alaska Department of Fish and Game Small Game Program to do road and trailside forest grouse surveys for the last three springs, from mid-April through mid-May, near Tok, Alaska. The surveys look at the effects of fire and logging on forest regeneration and grouse habitat. The object is to determine grouse population trends and responses to wildfire and additional logging.

Much of the landscape around Tok was burned by large wildfires within the last 25 years. More frequent and severe wildfires in many parts of the Interior are affecting wildlife habitat, and this research is focused on the long-term effects of wildfires.

**Millions of acres of forest burned from near Tok to the Canadian border in 2004.**

With increased wildfires and logging, forest and wildlife managers want to determine the effects of both on the abundance of grouse, which people utilize locally for subsistence and recreational sport hunting.

**If you are interested in participating in spring grouse surveys, contact the small game biologist Cameron Carroll in Fairbanks at 907-459-7237.**

**Left: Ruffed grouse prefer mixed young forests of hardwoods including aspen that regenerate after fire and logging. Right: Sharp-tailed grouse prefer open-brushy/muskeg areas including openings created by fire.**

**Spruce grouse prefer mature spruce forest.**

Surveys, which take place one-half hour before sunrise and two hours before sunset, include looking and listening for ruffed grouse drumming and sharp-tailed grouse hooting, and doing lek counts. Forest grouse surveys occur the last week of April and the first two weeks of May, generally. In some years, the counts may be a little earlier or later, depending on weather. The amount of daylight is the most important factor in determining grouse mating and display times.

Information from grouse surveys is compiled for each location and compared to data from previous surveys. This helps wildlife and forest managers determine population cycles and habitat conditions as the forest continues to grow and mature.

This project is an excellent opportunity to participate in a very useful citizen science activity, and spring is a great time to be out in the woods! Your assistance would be valuable!

## Spring Tree Sales

### Society of American Foresters

The Society of American Foresters have tree seedlings for sale, including lodgepole pine, Siberian larch, Colorado blue spruce, white spruce and paper birch. Cost is $25 per bundle of 20 seedlings, which are typically 8 inches tall. You can download a form at www.forestry.org/alaska or contact the sales coordinator at reburnsi@gci.net to place an order. Orders forms must be mailed before May 1 for pickup on Saturday, May 16 from 9 a.m. to noon. Pickup will be at REI in Anchorage or Sportsman's Warehouse in Wasilla.

### Fairbanks Soil & Water Conservation District

The FSWCD will hold its annual tree and shrub sale May 30 from 11 a.m. to 4 p.m. at the Tanana Valley State Fairgrounds in the Kiwanis Ag Hall. All plants are $5 each and are bare-root and 12 to 30 inches tall (except birch and white spruce). Pre-orders are due by May 15; place your order early to get the best selection. Trees and shrubs for sale include Alaska birch, iris, silverberry, Amur maple, late lilac, American cranberry, white spruce, Siberian larch, hedge cotoneaster, Saskatoon serviceberry, Ranetka crabapple, Boyne raspberry, tundra rose, rose tree of China and Siberian dogwood. Go to www.faibankssoilwater.org to view the brochure, or call 907-479-1213, ext. 108 for more information.

A tree care workshop will be taught by Glen Holt, forester with the UAF Cooperative Extension Service from 1 to 2 p.m. at the Kiwanis Ag Hall.

## Community Tree Stewards

***a special volunteer corps trained to care for Alaska's community trees and forests***

**The Community Tree Steward course will be offered in**

**Fairbanks**

**on**

**Tuesdays and Wednesdays**

**May 5 - May 19, 2015**

**5:45 - 9:00 pm**

**UAF Cooperative Extension Service Office**

The University of Alaska Fairbanks Cooperative Extension Service Field Forestry Program partners and cooperates with other agencies, organizations and the private sector to address forest-related needs and questions posed by the public. Extension forestry is currently working with the State Division of Forestry, the USDA Forest Service, the Bureau of Land Management, the Alaska Department of Fish and Game, the USDA Natural Resource Conservation Service, various Soil and Water Conservation districts, a number of private non-government organizations, the Fairbanks North Star Borough, UAF affiliates, rural development organizations, community groups and others to provide information about the management, biology and social interests relating to Alaska boreal forest through workshops, newspaper articles, radio and television interviews and more.