Spring 2014

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 upon us and we have survived another Interior Alaska winter. Thankfully, this year it was not as cold or as long as last.

I continue working with questions on an array of forestry topics. Many of my workshops since last fall dealt with how to cut and season firewood and chainsaw use and maintenance. Greater efficiency, cutting less wood, less strain on the resource and your back, and less air pollution are all reasons to season your firewood by cutting, splitting and stacking it under a top covering or in a woodshed.

Extension partnered with the Yukon Chapter of the Society of American Foresters last February to put on a firewood workshop. Topics ranged from how to cut and season firewood to wood stove efficiency. Fifty people attended the 4-hour workshop on the UAF campus.

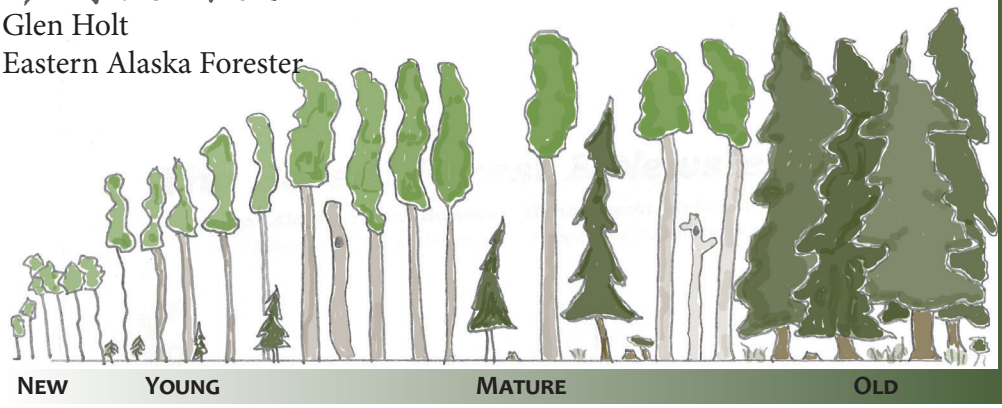
Special thank-yous to the Fairbanks business cooperators who donated door prize items, including the Outpost, The Woodway, The Great Alaskan Bowl Company, Alaska Industrial Hardware and Kathryn Pyne. Thanks for making this workshop a huge success!

If you are looking for forestry outreach or a site visit or if you have a forest pest question or would like a forest management/stewardship plan or assistance, please contact me.

Have a great spring and summer! Be careful with fire!

Glen Holt
Eastern Alaska Forester

What's Inside



Glen Holt, Eastern Alaska Forester
UAF Cooperative Extension Service
907-474-5271 or ggholt@alaska.edu

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Birch Sap Season

Glen Holt, Eastern Alaska forester, UAF Cooperative Extension Service

Collecting birch sap is a popular rite of spring in areas where birch is prevalent, and vast areas in Interior Alaska are often blessed with an abundance of birch.

Birch sap runs each spring from the roots through the whole tree during the spring freeze/thaw cycle. When sap begins to flow, it can be collected for use. To collect birch sap, a spout, called a spile, is inserted into a hole drilled about 1½ inches into the tree trunk using a clean drill bit about 7/16 of an inch diameter. I use a sharp screw-lead auger bit and a hand brace. Collect sap in a sterilized container with a cover on top to keep impurities, birch seed and bugs out of your sap. I have used two-gallon zip-style bags to collect sap, but a sterilized bucket with a lid on it works well.

The season is generally three weeks long or less starting around mid-April. Collecting sap is a great way to get out in the spring forest. People drink fresh birch sap from the tap and others store it preserved at around 41°F for up to six days. Some folks freeze it as ice cubes! Others use it for coffee, tea and various beverages.

Collecting sap with zip-style bags

I used to collect sap in the Mat-Su area and sell it to a syrup maker. This was fun, and it was my nephew's first source of income. Together we tapped 100 trees and delivered approximately 70 gallons of sparkling-clear sap every day or two. Some days the sap flowed more than others.

Taps may be purchased locally in Fairbanks. Tapping only a couple of birch trees may yield a gallon or more of sap each day. Select only healthy birch trees that are eight inches diameter or larger. Pull your taps when the sap becomes less than sparkling clear. Foggy looking sap is called "buddy sap" and signifies the end of tapping season.

When the sap season ends, pull your taps and clean and store them in a covered container. You don't have to plug the tap hole, but some people do, using a dowel or cork plug. The hole drilled in the tree will heal well on its own. Contact me if you have any other questions about birch tapping. Have fun with it!

For more information, see Extension's new publication, *Backyard Birch Tapping Basics*, FNH-00150.

Fairbanks Soil & Water Conservation District Tree Sales

Glen Holt, Eastern Alaska Field Forester, UAF Cooperative Extension Service

Spring is a season of planting, and summer is for growing. The Fairbanks Soil and Water Conservation District will be holding its annual tree and shrub sale Saturday, May 24, from 10 a.m. to 2 p.m. You can pre-order plants or take your chances and see what they have available at the tree sale. Pre-orders may be picked up at the Fairbanks office, located at 590 University Avenue, Suite 2.

Tree and shrub selections this year include American cranberry, Amur chokecherry, Amur maple, birch, dwarf Russian almond, iris, late lilac, prickly rose, 'Ranetka' apple, russet buffaloberry, Saskatoon serviceberry, Siberian larch, silverberry, white *Rugosa* rose and white spruce.

These species include a variety of native and ornamental trees and shrubs that have an excellent history of hardiness in Interior Alaska weather.

Check out the FSWCD website at www.fairbankssoilwater.org. For questions or more information, email them at FSWCD.trees@gmail.com or call them at 907-479-1213, ext. 107.

Birch leaves

Ruffed Grouse Surveys Near Tok

Glen Holt, Eastern Alaska Field Forester, UAF Cooperative Extension Service

While I was working in the Tok area it became apparent that fire and timber harvesting were creating the kind of forest disturbance that certain wildlife rely on for a healthy habitat. The ruffed grouse thrives on early serial stages of forest regrowth that occur after harvesting or wildfire.

Ruffed grouse sitting on a snow berm

Since wildfire is unpredictable when it come to determining how much forest is regenerated, logging can be another way to manage diversity and provide habitat requirements of wildlife like ruffed grouse, which clearly need part of their habitat in the young age classes. Moose, snowshoe hare, lynx, certain species of song birds and other wildlife also need a mix of forest types to thrive.

This spring will be my second season working with the Alaska Department of Fish and Game, Wildlife Division doing forest grouse surveys in the Tok area. This research helps the Wildlife Division determine a baseline for forest grouse activity. The information will be helpful if additional logging to harvest biomass for heating and/or generating electricity occurs in the Tok district. The Tok area of Alaska has high heating fuel oil costs and very expensive electrical generation that is based on using diesel-fueled generators.

I will be working in the Tok area the third week of April and the first week of May doing forest grouse surveys. Data on grouse is collected in the early morning and late evening as ruffed grouse begin their drumming activity and sharp-tailed grouse are in "leks," groups of male grouse that gather to engage in competitive displays at this time of day to attract females.

Ruffed grouse make an audible drumming sound by rapidly flapping their wings so that it sounds like progressively faster drumming. Sharp-tailed grouse in leks make "cooing" calls and a clattering noise as they strut and shake their tails. The data gathered helps biologists determine population trends and habitat selection.

The information will also help the State Division of Forestry and ADF&G jointly determine whether forest management through logging is working to help regenerate the harvested — rather than burned — forest back to a less fire-prone hardwood stand that includes aspen and willow, which are preferred tree and shrub species for grouse as well as moose and other wildlife that prefer a younger mixed forest.

If you have ruffed or sharp-tailed grouse in your area and would like to get involved with surveys, let me know and I will put you in contact with the small game biologist and the ADF&G program.

Male sharp-tailed grouse strutting on its lek

Logging in the Delta Area for Wood Pellets

Glen Holt, Eastern Alaska Field Forester, UAF Cooperative Extension Service

Recently, Dr. John Yarie of the School of Natural Resources and Extension at UAF and I toured a logging operation south of the Delta River and 10 miles west of Delta Junction. We crossed the Delta River on an ice road and traveled four miles to the site where Logging and Milling Associates out of Dry Creek harvested white spruce, which they sold to Superior Pellet Fuels in Fairbanks.

This timber sale by the State Division of Forestry is a 117-acre unit adjacent to and buffered along the Delta River. The winter roads were well-maintained to the logging project. Pole-sized and small saw logs were being harvested in a well-stocked stand of white spruce approximately 130 years old. Similar timber bordered the unit, providing for seed stock, older growth habitat and forest diversity.

This stand has been slowing in growth for a number of years and exhibited a high incidence of rot, wind damage and silt laden bark. Allowing longer growth probably puts stand dynamics more at risk than harvesting would at this time because of environmental and biological factors.

The unit laid out by the State Division of Forestry is long and narrow and was being logged efficiently by

Feller buncher harvesting timber

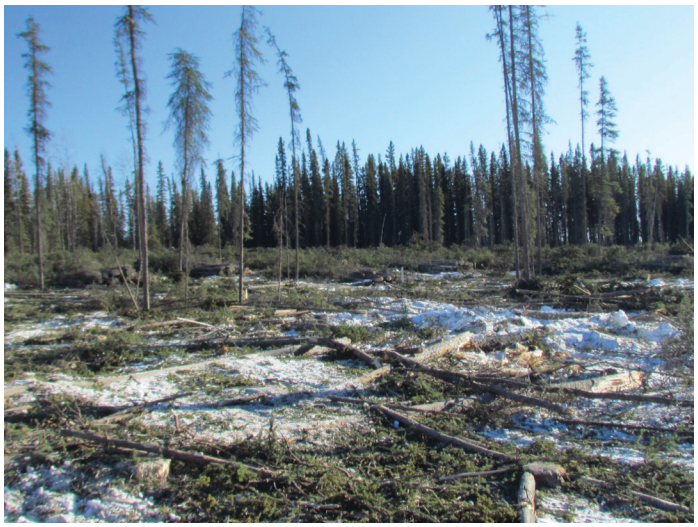
cutting three to five acres per day with a single feller buncher using a saw blade rather than a shear. Trees were cut, bunched two to five at a time and laid down in bundles large enough for the grapple skidder to make an efficient "turn" from the forest to the processor, which was located about 300 yards away along the main winter haul road.

We observed the cutting, skidding and processing activities and also truck loading and hauling. Processed timber was being loaded on each of five log trucks that made two trips a day to Superior Pellet Fuels in North Pole, about 90-miles west.

The processor delimbs trees and cuts them to length.

The processor took each turn as it came in from the skidder and limbed the trees, cut off the tops and stacked the logs for later loading onto the trucks by another log loader. Tops and limbs were piled out of the way to be gleaned by personal-use firewood cutters or stacked in piles to be burned when snow falls next winter. The processor was also able to sort beetle-killed firewood from better-quality saw logs to sell to other mills or in the community as log-length firewood.

Plenty of limbs, tops and tree parts on most portions of the logged unit will decay back into the soil after logging. Many parts of the unit appeared to be partially scarified by a combination of the feller buncher tracks and the skidder tires, which had all four tires chained up. Scarification helps expose mineral soil to improve forest regeneration and the growth of white spruce, poplar and willow.



Harvest area with seed trees

Log trucks from Superior Pellet Fuels were taking 10 to 12 loads a day to North Pole. Logging and Milling and Superior Pellet Fuels are working long days to take advantage of the great logging and trucking conditions.

This method of logging appears to be as high-volume as it gets so far in the Tanana State Forest. We noted that research opportunities could include time activity, fuel consumption and equipment suitability studies to monitor efficiency and measure equipment productivity. This logging system in this type of timber at this time would closely mimic the kind of operation needed to approach best efficiency while harvesting biomass-sized timber.

Trucks loaded with small logs for biomass

Tree Feature: Alaska Birch

(*Betula neoalaskana*)

Alaska Birch is the featured tree in this issue of the newsletter. Birch in Interior Alaska are also known as paper birch, western paper birch and Alaska paper birch. Recently, scientists have combined the names, and birch in Alaska is generally referred to as simply Alaska birch.

In the Kenai Peninsula and some areas of South-central Alaska, there is also a variety named Kenai birch, but the predominant birch found in Interior and the rest of Alaska is the Alaska birch.

Alaska birch is a deciduous tree 20–80 feet tall and 4–24 inches in trunk diameter. The main distinction between a birch and other hardwoods found in Alaska is the papery bark. Bark color may vary from white or pinkish white to grayish white or yellowish white.

Birch bark can be easily peeled off of the darker inner bark in late spring and early summer. This papery bark is used for making a variety of products, including bowls, vessels, cups, lampshades, utensils, shoes and, in the past, birchbark canoes.

Birch is predominantly used for firewood. The lumber is a moderately dense hardwood that often needs to be drilled prior to nailing in order to prevent the wood from splitting. Birch can be kiln dried to make beautiful lumber for cabinets, trim, molding, novelty products, bowls, utensils, furniture, flooring, plywood, veneer, etc.

Crystal-clear sap flows profusely in spring from the middle of April into May. Good sap years seem to depend on weather and snow presence.

People in northern and boreal parts of Europe and Asia, where birch may also be found, have been using sap for hundreds of years for beverages or to boil down to make birch syrup. Birch sap has a different sugar composition and content than maple and it takes more than twice as much birch sap (1:100) as it does to make maple syrup (1:35). It would take 100 gallons of carefully boiled birch sap to yield approximately one gallon of syrup.

Birch is not a long-lived tree species and it gives way after only 100 years to white spruce trees that have been growing slowly in the shade. As birch trees decline due to old age and damage, they make room and provide more sunlight for better white spruce growth. Birch needs full sunlight to prosper and is termed shade-intolerant. Birch trees come

back quickly in thick stands of the same age after wildfire and logging that exposes mineral soil to seed fall and germination.

Timber harvesting systems appropriate for regenerating a birch forest are "seed tree cuts" and "clear cuts" narrow enough to provide an adjacent seed source. Both harvest systems must, however, be coupled with mechanical site preparation or controlled burning.

Birch forests must also successfully regenerate beyond the ability of moose to completely browse all the regenerating birch seedlings and saplings. Harvesting only small units (about an acre) in areas with a dense population of moose won't work because all the birch regrowth will be browsed by moose. In those areas, small clear cuts and infrequent harvesting ensure that growing birch will become browsed to death and the forest will revert to a white spruce stand without the early successional stage that normally includes birch.

Fairly complete harvesting in larger cuts with site preparation that exposes mineral soil and excludes profuse grass growth for two to five years is a better method of re-establishing a birch forest after harvesting. This method most closely mimics the affects of wildfire.

The sapling-sized stage is important to birch regeneration; after 20 years or more, the birch saplings have normally grown beyond the ability of moose to browse them.

Alaska birch is:

- A deciduous hardwood with papery bark that is variably white, grayish or yellowish white.
- The twigs are covered in raised, resinous dots. Winter twigs are reddish and wispy-looking at a distance.
- The leaves are dark to yellowish green and up to three inches long and two inches wide. Leaf margins are coarsely toothed wedge-shaped.
- A birch forest grows best on warm, well-drained soils but is also common, although less vigorous, on cold, north slopes and poorly drained lowlands in a mixture with white or black spruce.
- Birch trees are shade intolerant. Birch regrowth rapidly declines when trees are over-topped and shaded by other trees. Birch is not a long-lived tree and declines due to trunk rot fungus, snow and wind damage, and frost cracks and after partial harvesting.
- Birch is used for firewood, lumber, wood chips, bark products, sap and wildlife browse.
- Birch regenerates best after fire or with mechanical scarification that exposes mineral soil to seed fall in areas large enough to overcome excessive moose browsing.
- Birch seedlings need full sunlight to grow and reach maturity. Later in a stand's age, birch is shaded out and replaced by white spruce.
- Seed tree cuts or clear cuts with pockets of residual birch create conditions for birch regeneration if the site is also well-scarified to expose mineral soil and if lots of grass hasn't already taken over the understory.

Source: Viereck, Leslie A. and Elbert L. Little, Jr. 2007. *Alaska Trees and Shrubs,* 2nd edition. University of Alaska Press.

Burning in Alaska

Glen Holt, Eastern Alaska forester, UAF Cooperative Extension Service

As spring progresses, the snow will leave and be replaced with dead grass that will soon become tinder-dry and a serious spring wildfire hazard. Landowners everywhere need to know about safe burning practices and how to prevent an escaped burn that could become a wildfire. The Alaska Division of Forestry writes the following:

- Most wildland fires in populated areas are caused by careless human activity.
- Alaska's fire season is from April 1 to August 31.
- A burn permit is required during fire season for all open burning, with few exceptions.
- State laws and regulations pertaining to burning practices apply statewide all year (AS 41.15.010-41.15-170 and 11 AAC95 Article 6).
- Burn permits are subject to restrictions, suspensions and closures.
- Experience has shown that 75 percent or more of burn barrels do not meet burn barrel specifications. Noncompliant burn barrels are subject to burn permit requirements and burn suspensions. Citations may be issued for violations. Penalties may also apply for unsafe burning.
- You are responsible for any fire you set or cause until it is "dead out."

Fire at Millers Reach, 1996, in Big Lake, Alaska

The following link takes you to a YouTube video from the Alaska Department of Natural Resources, *Safe Burning Series—Burn Barrels*: http://youtu.be/aIU5D-Nb11R8.

Industry Corner

As part of the Alaska Wood Energy Conference in April, I joined a field trip to Superior Pellet Fuels near North Pole, Alaska. SPF showed us the improvements it has been making in its yard organization and in perfecting its premium-grade pellet, which is sold and used locally in Alaska. Homeowners report about a 50 percent savings using wood pellets over using diesel home heating fuel oil.

Superior also showed us its new product — which is being consumer tested at this time — called the "pellet log." This compressed fiber wood log may be burned in a standard wood stove; the most efficient stoves work best with this new product. The log is three inches in diameter and handles well packed and on pallets for easy delivery. Recent reports indicate this product works well mixed with seasoned fire wood and alone as a viable alternative heat source.

— *Glen Holt*

Northern forest industries are encouraged to send in a 200-word introduction with their company name, logo, if any, what they do, make or produce, and how they may be reached by those viewing the e-newsletter.

Announcements & Classifieds

Send in your upcoming forestry presentations, workshops, seminars and meetings so that we can announce them in this newsletter. All announcements will be subject to UAF Cooperative Extension Service editorial protocols.

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.