

# Woodland NOTES

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### Strengthening Forest Stewardship Skills: Summer, 2006

Looking for a few good workshops or perhaps a field day or two? Look no further! Our *Strengthening Forest Stewardship Skills* program has many summer offerings to choose from. Flyers for all events are available on our website at <a href="https://www.cnr.uidaho.edu/extforest/StewSkills.htm">www.cnr.uidaho.edu/extforest/StewSkills.htm</a>

**Landscaping for Fire Prevention.** Sessions of this program can be scheduled for interested groups of 10 or more. To arrange a workshop, call Chris Schnepf at (208) 446-1680 or Randy Brooks at (208) 476-4434.

**Habitat Field Day**, Coeur d'Alene, ID. Friday, June 9, 2006, 8:30 am to 4:00 pm. To Register call (208) 446-1680.

### **GPS Field Day.**

- Moscow, ID, Friday, June 2, 2006. 8:00 am to 4:00 pm. To register call (208) 476-4434.
- Coeur d'Alene, ID, Saturday, June 10, 2006.
  8:00 am to 4:00 pm. To register, call (208) 446-1680.

Forestry Shortcourse, Sandpoint, ID. Wednesday mornings, (9:00 am to 12:00 pm) from June 14 to July 19, 2006. To register, call (208) 263-8511.

**Pruning for White Pine Blister Rust**, Coeur d'Alene, ID. Friday, June 16, 2006. 9:00 am to 5:00 pm. To register, call (208) 446-1680.

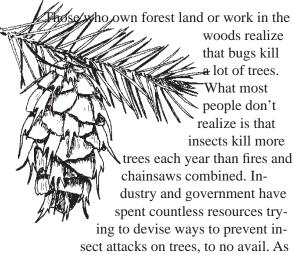
**Thinning and Pruning Field Day**, Sandpoint, ID. Saturday, June 17, 2006. 8:00 am to 4:00 pm. To register, call (208) 263-8511.

**Managing Forest Organic Debris**, Priest River, ID. Friday, June 21, 2006. 8:00 am to 5:00 pm. To register, call (208) 446-1680.

### **Forest Insect and Disease Field Day.**

- Moscow, ID, Friday, July 21, 2006.8:00 am to 4:00 pm. To register, call (208) 476-
- Sandpoint, ID, Friday, August 4, 2006. 8:00 am to 4:00 pm. To register, call (208) 276-8511.

## Can Forest Insect Pests Be Managed? Randy Brooks



forest landowner, at some point (if not already) you will be confronted by an insect pest and, as a result, may find yourself in a quandary. The final decision as to whether or not the problem can be ignored or should be addressed by deliberate action on your part should be determined by your management objectives and economic factors related to these objectives.

Regardless of how you approach the problem, bear in mind that good forest stewardship should include an element of protection. In order to develop and maintain a healthy and productive forest, one must be aware of potential pest problems and be ready take steps to ameliorate them. It makes little difference whether your primary reason for owning forest land is to maximize timber production, to produce wildlife habitat, to provide aesthetics or some combination of the above. In order to attain any of these goals, one must occasionally deal with the threat of insect damage.

### **Economic Considerations**

For many owners of forest land, knowing what to expect in terms of the potential immediate and long-term economic consequences of damage that may be caused by a particular pest will have a major influence on their decision. This knowledge is fundamental to determining if you have a problem to begin with. Generally, the more intensively you manage your forested land the less damage you are likely to tolerate. For example, landowners are less likely to tolerate

insect damage in a Christmas tree plantation that required several hundred dollars per acre to establish, than in a naturally established forest that is held solely for recreational purposes.

#### What is a Pest?

Any animal, disease-causing organism, or weed that prevents you from optimizing your management objective(s) is a pest. By definition, what one forest owner views as a pest may seem unimportant and be tolerated by a neighbor. Following the same line of thought, the term outbreak refers to a situation where a pest reaches a population level that causes unacceptable damage to the landowner. Otherwise, populations of the pest are said to be sparse (or below economic threshold). Subsequently, landowner views may differ in terms of what constitutes an outbreak. The reason for this disparity is that different landowners may have completely different values and management objectives.

### **Preventative Maintenance**

Deliberate forest management is often the most effective means by which landowners can develop and maintain forests that are less susceptible to pest outbreaks and/or less vulnerable to damage if an outbreak occurs. Under most conditions, forest pest problems can be minimized by encouraging the right tree species on a given site (soil, exposure, microclimate, etc.), removing damaged or low-vigor trees, and minimizing between-tree competition for water and nutrients by *thinning* the stand at appropriate intervals. History has taught us that under most circumstances a biologically diverse forest community is often less susceptible to outbreaks or more resilient to disturbance than a relatively simple community. Unless your management objectives demand a single species condition (monoculture), try to aim for multiple species. In any monoculture situation, structural diversity can be enhanced by maintaining a mixture of age classes. Generally, different age classes of trees (e.g., seedling, sapling, pole, sawtimber) are subject to different types of problems. The key

CONTINUED ON PAGE 4

### **Idaho's BIG Trees**

Ron Mahoney

#### **Magnificent Idaho trees**

What makes a tree remarkable, memorable, or a real eye catcher? For some, it may be its size, strength and wild setting. For others, it may be the character and form gained from years of pruning, the way the tree sets off a building or neighborhood, or maybe the significance of the origin of the tree its uniqueness or the history surrounding it. Others may see a tree as a way to connect generations with an appreciation of the wonders of nature, or the product of generations of land stewardship. Idaho's extensive wild forests, pioneer farms, ranches, communities, and historic sites are the setting for some of the most magnificent trees anywhere, a marvel to see and treasure.

You usually have to know something special about the smaller, less attractive trees for them to capture your attention, but the really BIG

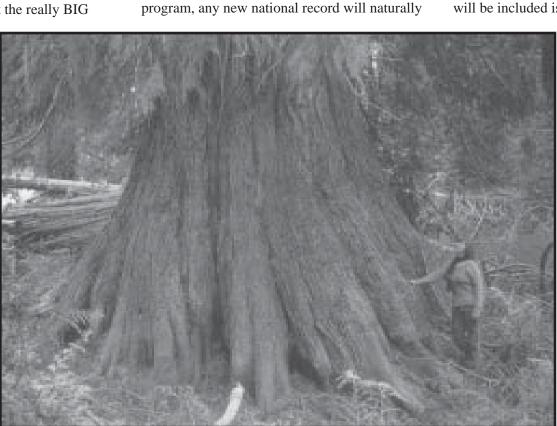
trees in Idaho are hard to ignore, unless no one has ever seen them....a real possibility in the vast and rugged backcountry that characterizes so much of our state. One tree in Idaho that tops the list of big ones is the whitebark pine in the Sawtooth National Recreation Area, a giant growing in a harsh environment, clinging to life despite a huge fire scar and mostly dead limbs. This tree happens to be both the Idaho and the National Champion tree of its species. Some 14 miles by steep trail from the nearest road, this tree, over 9 feet in diameter, has seen few visitors since it was measured 25 years ago in 1980. The other notable big tree in Idaho is a western red-

cedar at a whopping 18 feet across its diameter and some 177 feet tall when it was last measured in 1979. While it is not the National champion of its species (the record, in poor health, is in Washington) this tree is the largest tree of any species in the entire United States, outside of the giant redwoods and other huge trees on the Pacific coast and the giant sequoias in California's Sierra Mountains. Idaho's giant cedar gets lots of visitors, so many that a boardwalk has been built around it to protect the root systems from hundreds of visitors every year. The tree is a short distance from the northern Idaho town of Elk River, a short hike of ½ mile on a paved, handicap-accessible trail.

### The Idaho and National BIG TREE Programs

As Director of the Idaho Big Tree Program (on the Web at <a href="www.cnr.uidaho.edu/extforest">www.cnr.uidaho.edu/extforest</a> then click on the Big Tree Program icon), I have the enjoyable task of documenting the species and measurements of big trees submitted by people all over Idaho, updating the records, and sending certificates to nominators and owners of new records. Records that tie (within 5 points of the current record) or exceed the current record of that species in the National Register of Big Trees (<a href="http://www.americanforests.org/resources/big-trees/">http://www.americanforests.org/resources/big-trees/</a>) are sent on to the national program. Just this year, we submitted new national records for

a huge Engelmann spruce, and a relatively small but nonetheless new record beaked hazel. At the national register site, you can view the current champions list, search the list, read about and make nominations online, and also contact the state coordinators. While the National Register also is published in a nice glossy magazine format and sent to members of the American Forestry Association (but still available online to everyone), in Idaho we keep our current records online, where you can search the current records, print the list, and download and print instructions and forms for nominating a big tree as a new or co-champion for Idaho. If anyone reading this article does not have internet access, you can contact me at 208-885-7642 with your name and address and I will be glad to mail you copies of the Idaho records and nomination forms. Although you can submit directly to the National



be a new state record too, and you can just submit the tree through the Idaho program and we will send your nomination on.

There are several local programs to recognize BIG TREES in Idaho, including the cities of Lewiston, Coeur d'Alene, and Boise, which have published records of historic as well as large trees in their communities. There is also a national program called "Tree City USA" which can be found at <a href="https://www.arborday.org/programs/treecityusa.cfm">www.arborday.org/programs/treecityusa.cfm</a>. This program recognizes incorporated communities that meet specific standards for caring for the trees that make up their "community forest". Presently, some 68 towns in Idaho are recognized as "Tree Cities". More recently, Nez Perce County became the first in the nation to establish a "Tree County USA" program, and Twin Falls County is in the process of becoming the second.

### What is a BIG TREE and how do you measure one?

Even this enjoyable program has its challenges and controversies. In Idaho, we have had a consistent process for making the measurements on a tree, and verifying the species or qualified variety of a species. Of course, we think we do it all correctly, and most of the other Directors and programs in other states have a very similar set of standards. However, the National Register, and its leaders has undergone a number of changes in procedure and personnel, leaving the

National Register and its instructions for measurements and nominations with a lot of inconsistencies. One contention has been the use of a book published in 1979 "Checklist of Native and Naturalized Trees in the United States" by Dr. A. Little, as the only authority for including species at the national level. The book, a remarkable work in its time, is certainly out of date and is too limiting for the purposes of the program. The problem is being addressed by a new National Big Tree Advisory Committee with regional representation of state directors (I represent the Intermountain region), and we expect to have a more appropriate, inclusive set of standards soon. By the time you read this article, the newly clarified measurement standards should be on the National Registry website, and they will be very close to what we use in Idaho for measurements. The discussions and resolution of what species will be included is ongoing.

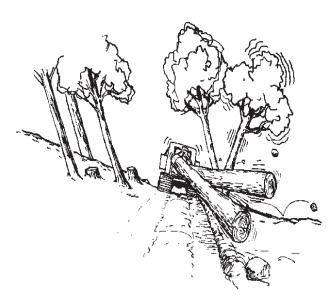
> In any event, the *Idaho* BIG Tree Program will recognize any verified tree species from anywhere in the world, or universe for that matter, including scientifically established varieties, as long as it meets the minimum standards and ties or exceeds the current state record. Historically, we separate native and cultivated trees but may go to a listing of wild and cultivated trees, with a note whether the tree is native or introduced. Some of our native tree species records are growing in cultivated situations, and some introduced species are wild "escapes". The standards for minimum qualification to be recognized as a tree at the national level are the same for every state: 9 ½ inches circumference (3 inches diameter), 13 feet tall with

a "definite" crown. The circumference is measured at 4 1/2 feet above the ground (called DBH by foresters...diameter breast height) in inches, giving one point for each inch. The challenges of measuring trees that fork or have a deformity at dbh, or for trees on slopes, were one controversy we worked on, and we settled using the clear instructions for the Idaho program....measuring the smallest circumference below 4-1/2 feet, making sure you are dealing with a single tree that does not fork as it comes out at ground level. Height is measured to the highest point on the tree, regardless of whether that part of the tree is alive or not, with one point for each foot of height. The crown measurement is taken at the widest distance across the dripline of the crown, then across the crown perpendicular to this measurement (this is a new, simplified procedure we have changed on the National and Idaho programs), the two measures are averaged and then this number is divided by 4, giving 1 point for each foot. As with height, all parts of the crown are considered whether dead or alive. [What if the whole tree is dead? Then, it is firewood or wildlife habitat, NOT a tree for the records!]

If you measure and nominate any Idaho and/or National record tree, you will receive a nice certificate suitable for framing, and the landowner will also receive a certificate as the "Owner and Protector" of all Idaho record trees.

### Best Management Practices (BMP's) for Timber Harvesting in Idaho.

Yvonne C. Barkley



As a refresher, Best Management Practices (BMP's) were developed as recommendations for Idaho's forest owners and managers to follow, not only to comply with the Idaho Forest Practices Act, but also to enable us to be better land managers and stewards. BMP's have been determined to be the most effective and practicable means of preventing or reducing the amount of non-point pollution generated by forest practices. BMP's apply to all aspects of forest management – road planning, design, construction, and maintenance, timber harvest planning and execution, and streamside management. Second in this series, this article will address timber harvesting BMP's for Idaho and cover harvest design as well as slash treatment and site preparation. Next month, the third article of the series will cover BMP's for Idaho roads and stream crossings, as well as some miscellaneous concerns such as disposal of hazardous materials. Part I of this series, Best Management Practices for Idaho Riparian Areas appeared in the Fall/Winter 2005-2006 (Vol. 17, No. 1) of Woodland NOTES.

### **Harvest Design**

Spend time planning your timber harvest – it involves much more than just cutting trees! The way you harvest your timber can have long lasting effects on a number of important forest resources. Consider what effects your harvest will have in the watershed and how these effects combined with management activities on other parcels may compound problems, such as increased sedimentation and water yields and decrease water quality. Identify erosion hazards – some soils are more easily erodible than others and as slope increases, so does erosion potential.

How will your harvest affect wildlife habitats? Consider the three components necessary for wildlife to thrive – food, water, and shelter. By removing one or all of these components you could be displacing resident wildlife populations. Know what you want your forest to look like after the harvest – what species of trees you want and what other plants you have that may need to be protected to ensure survival. Plan on leaving the healthiest trees of each desired tree species to provide seed for future generations. Ensure these trees do not become damaged during the harvest by marking them as leave trees and not establishing skid trails and landings close by.

Look at the characteristics your site and determine the best harvest method. Some pieces of ground will require a combination of harvesting systems. It is best to use a topographic map as well as walking the ground when making harvest system decisions.

On flat and gentle slopes, harvesting by tractor, skidder, or even horses are common choices. Planning the location of your skid trails is impor-

tant. Up to 40% of an area can be covered with skid trails if they are not planned and marked in advance. When planning skid trails and landings:

- Designate skid trails to minimize soil disturbances and compaction.
- Minimize the size and number of logs landings which allow for a safer and more economical operation.
- Limit the grade of your skid trails to 30%, especially on geologically unstable, saturated, highly erodible, or easily compacted soils. In Idaho, ground based skidding on sites with more than a 45% slope and which are immediately adjacent to Class I or II streams may not be conducted except with an approved variance from the Idaho Department of Lands.
- Locate skid trails away from natural drainage systems and on stable areas to prevent the risk of material entering streams. Skid trails are not allowed in Stream Protection Zones (SPZ's).
- Plan your skid trails so they divert runoff to stable areas, not concentrate runoff and creates breaks in grades. Plan, install, and maintain drainage systems for each landing and skid trail that will control the dispersal of water and prevent sediment from entering stream systems.
- Install cross ditches on skid trails where needed.
- Plan for revegetation of skid trails and landings before the next growing season.

For sensitive areas, mechanical harvesters called feller-bunchers are a good choice. These machines are capable of both harvesting and piling trees into bunches. They can reach into sensitive areas and harvest individual trees without damaging remaining trees, degrading water quality, compacting soils, or disturbing wildlife habitat.

As the terrain becomes more rugged and steep, other options such as skyline and cable harvesting come into play. Skyline operations usually operate from a road at the top of the unit and use a suspended cable (skyline) to reach down the hillside and pull suspended logs up to designated landings located along the road. By moving logs with a skyline system you eliminate the need for skid trails and reduce soil disturbance and compaction.

### **Slash Treatment and Site Preparation**

The law requires fire hazard reduction by treating your slash. Planning what you will do with your slash and how you will prepare the site for the next generation of trees before the harvest will save you time and money.

The Idaho Forest Practices Act states "Within 10 days, or a time mutually agreed upon ..., the department shall make a determination of the potential fire hazard and hazard reduction and/or

hazard offsets, if any, to reduce, abate, or offset fire hazard." This determination is based on a point system that can be found in the Idaho Forest Practices Act (Subsection 070.03e).

Slash should never be pushed into Stream Protection Zones (SPZ's). All debris associated with harvesting will need to be located so it does not enter streams via erosion, high water, or other means. Whenever possible, trees should be felled, bucked, and limbed so that material does not enter Class I streams. Remove slash from Class I streams as it occurs. Removal of harvesting debris from Class II streams is required whenever there is a potential for stream blockage or if the stream has the ability for transporting debris to a Class I stream or other body of water.

Dozer piling slash is a common practice and piling brush and scarifying soil surfaces is best done when soil is dry or frozen to minimize soil compaction and displacement. Most tree species need bare mineral soil for seedling germination and the removal of slash from the forest floor will enhance germination results. Prescribed burning is another way to treat slash and prepare sites for seed germination, but for private landowners it is a method best planned and handled by experienced commercial operators or consultants.

Residual stocking and reforestation are other requirements set by the Idaho Forest Practices Act, and specifies "a minimum number of trees per acre, the maximum period of time allowed after harvest for establishment of forest tree species, and for sites not requiring reforestation, to maintain soil productivity and minimize erosion." Acceptable post-harvest stocking levels are shown in Figure 1.

If stocking levels do not meet requirements after three growing seasons after the harvest, seeding and/or planting may be required. These activities will need to be completed by the fifth growing season following the harvest. If suitable seed or seedlings cannot be found, or if inclement weather interferes with reforestation plans, you may apply to the Idaho Department of Lands for an extension.

For more information on the Idaho Forest Practices Act and Forestry BMP's, contact your local Idaho Department of Lands Forest Practices Advisor (listed in your phone book) and request a copy of "Rules Pertaining to the Idaho Forest Practices Act, Title 38, Chapter 13, Idaho Code". You may also contact the UI Extension Forestry office at (208) 885-7718 and request a copy of the publication titled "Forestry BMP's for Idaho".

Figure 1. Acceptable Post-Harvest Stocking Levels.

8		
Average Size Class Diameter at Breast Height (DBH) in	Average Number Trees Per Aore	Average Spacing in Feet
Inch⇔		
29 and smaller	170	16 × 16
3.0 and greater	110	20 × 20
5.0 and greater	60	27 x 27
8.0 and greater	35	35 x 35
110 and smater	20	47 × 47

#### **INSECT PESTS CONTINUED**

is to make it as difficult as possible for a pest to reproduce, disperse, and become established in a suitable host. Another thing is that some pest problems are created by human activities that inadvertently create conditions for an insect or disease (wrong species on wrong site, etc.).

### **Chemical Control - a Necessary Tool**

A large number of pest problems are due to natural conditions that are favorable to the pest and which landowners may have no control. Weather that favors pest survival (e.g., a mild winter that enhances survival of gypsy moth eggs), drought that renders trees more susceptible to invasion by certain bark beetles, or conditions that may be detrimental to populations of the pest's natural enemies are examples of events over which the landowner has little influence. Landowners are often left with no choice but to intervene directly with a pesticide. Chemical use is not necessarily bad and can often be part of a good stewardship plan. To take no action and let the problem "run its course" may result in an unhealthy and unproductive forest. In many instances, pest problems that go unattended for apparently valid environmental concerns create situations that may detract from the environmental and economic quality of forested land for years to come.

### Pesticides - a Balancing Act

The vast majority of pesticides applied to forested land are for weed control during reforestation efforts. Few chemicals are labeled for forest insect control and very little insecticide is applied annually to very few acres of forest land. Insect control efforts are typically aimed at defoliators with the intent of saving foliage. Defoliation (similar to the tussock moth outbreaks a few years ago) reduces tree growth or weakens the tree to the point where it is unable to defend itself against potential mortality-causing agents such as root diseases and bark beetles. We often refer to these as secondary agents, because typically they thrive only on the heels of other agents that affect the tree when it is in a relatively vigorous condition. Secondary agents are so called because ordinarily they are unable to become established in healthy trees. They are secondary only in an ecological sense but are important because they are usually the ultimate cause of tree mortality. Severe defoliation may also kill a tree outright, as usually happens following a single defoliation of conifers.

Chemical control of bark beetles is possible, but more feasible on individual high value landscape trees. Currently, the only chemical labeled for bark beetle (mountain pine beetle) control in the Pacific Northwest is carbaryl. Since the beetle is found under the bark, the bark must be saturated prior to beetle flight. Control on a larger acreages is difficult (accessibility is an issue) and not very

Landowners should consider chemical applica-

tion when it is acceptable economically and ecologically, and when the consequences of not treating may prevent the landowner from reaching management objectives. If properly applied (to include an assessment of need, selecting the correct product, formulation, dosage, method of application and timing) chemical insecticides are a prudent and appropriate stewardship tool.

#### **Biological Options**

A significant amount of research has been conducted towards biological control of pests. Many biological controls exist for weed management. Currently, biological controls do not exist for bark beetles. Two biological options that may be appropriate for defoliating insects are a bacterium known as Bt (Bacillus thuringiensis) and a molting inhibitor called Dimilin. The former affects a wide range of caterpillars that inadvertently consume the spores. The latter has a wider spectrum of influence. It may kill any insect that is in the process of molting and has a major impact on populations of aquatic insects. There are additional stipulations associated with these biologicals, but when applied properly under appropriate conditions they may be more compatible ecologically than a chemical. Most biologicals affect a narrow spectrum of organisms relative to most chemicals and this is their appeal.

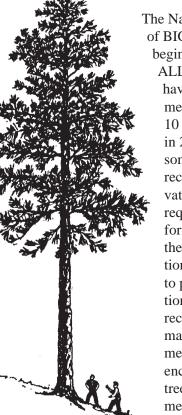
#### **Tough Decisions**

Sound forest management requires many decisions. The landowner must be the decision maker when it comes to their forest. Seek guidance from professionals and obtain the information required to make informed decisions about potential pests in your woods. Develop a forest management plan and include a list of preventative and direct control strategies available for dealing with pests you might encounter. A well written management plan and active forest management are vital ingredients for good stewardship. To answer the question, can forest pests be managed - yes, they can. But active forest management is the key, and as we extension foresters like to say, thin, thin, thin!



**BIG TREES CONTINUED** 

Where to find new champion trees in **Idaho** 



The National Register of BIG TREES will begin to phase out ALL records that have not been remeasured within 10 years, starting in 2008. While some of our Idaho records are on private land and will require permission for me to give out their exact location, I will be glad to provide locations on any of our records that you may want to remeasure. I want to encourage local big tree hunters to remeasure Idaho records that have not been measured in a

long time. Several of our state records are nearly 40 years old! Anyone can re-measure and submit a new nomination for existing Idaho records, whether state or national, but original Idaho nominators will still be recognized along with the new person(s). There are also a few open records on Idaho native species, and many on introduced species. County courthouse grounds, older parks and private residences, and particularly older rural homesites and homesteads are good places to find record trees. So are many managed forests and wilderness areas. Local foresters and other managers of private and public lands often know where the BIG trees are, and can also help you with measurements.

In the Coeur d' Alene City Park, towards the west end near the playground equipment, are three magnificent American chestnut trees, nearly 4 feet in diameter and well over 100 feet tall. Decimated by the introduced chestnut blight, this species that once dominated eastern hardwood forests is honored and sustained by these impressive Idaho champions. From Franklin County in SE Idaho, to Owyhee in the SW, and up to Boundary County on the northern border, champion Idaho BIG TREES are part of our state and national heritage. Let's take care of them, and find more of these remarkable living legends!

We hope that you have find Woodland NOTES useful. If you have any comments or topics you wish to see addressed please contact us. We would appreciate your participation.

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