

Summer 1995

SMALL-SCALE Woodlands

FRDA II Small-Scale Forestry Program: a newsletter to assist private landowners

Tree planters for a day Fort Fraser Elementary students take a field trip



Silviculture professionals Dave Van Dolah (left) and Mike Zaluski provide tree planting assistance to: Darren Lindenberger, Cody Adams, Blake Gammond and Tyson Thon.

The children at Fort Fraser Elementary School know what it's like to plant trees. Some have older brothers and sisters who plant in the region every spring, while others plant trees through organizations such as Girl Guides and Boy Scouts. The majority, however, had never picked up a planting shovel or seen a seedling until Pam Scholty invited the entire elementary school to plant trees on her property.

Scholty owns 1200 acres of land in the Prince George Forest Region near Fort Fraser. The FRDA II Small-Scale Forestry Program enabled the Scholtys to hire treeplanters to plant 30,000 seedlings on a half-section of her property, roughly 550 acres. She also thought it would be a good opportunity for the students at Fort Fraser Elementary School to become actively involved in the growth and development of local forest lands.

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Tree planters... *continued from pg. 1*

"Not all the children belong to Boy Scouts and Girl Guides," says Scholty. "This way, every child has the opportunity to plant a tree." The Scholtys live twenty minutes away from the school, a short bus ride for the 120 children who arrived to plant trees on May 2. An area was ribboned out for the school planters and local and regional forestry experts were on hand to help the students plant the trees properly.

"We each took a group of eight students and explained about tree planting, and trees that grow around the area, and the care that must be taken," says Cathy McClary, Forestry Development Officer with the Canadian Forest Service. Also present at the event was Brian Walker, a local industry forester with Fraser Lake Sawmills; project implementation contractor Dave Van Dolah; Woodland Extension Forester with the Small-Scale Forestry Program Kristen Arnett; the tree-planting contractor; and several students from Holland participating in a work-study term with the Canadian Forest Service. With each tree planted, a plastic tree tag was attached and personalized with the student's name.

"Years from now, they can take their children to the area and show them the tree they planted when they were young," explains Scholty. "They can see whether the tree survived or didn't survive, as well as the growth progress." Altogether, 18,000 spruce trees and 12,000 Douglas-fir were planted on the half-section of land.

The Small-Scale Forestry Program supplied Scholty with the names of a variety of forestry experts they could consult for advice and guidance. With their help, Scholty, along with her husband and two children, implemented various prescriptions on their property, including manual brushing and tree planting. "It was definitely a learning experience. One thing I

learned is you always have to be a year ahead of everything," recalls Scholty.

The reforestation was carried out close to the Nechako River. Keeping in mind the delicate ecosystems around the Nechako, Scholty and her family were dedicated to preserving the ecological balance of this setting. "When we purchased this land, a lot of it had been logged already," says Scholty. "We picked areas that didn't need any herbicide spraying to avoid the possibility of

chemical run-off into the Nechako River." She also planned the forestry work around the many deer habitats in the area, explaining that "the Nechako River is a natural corridor for these animals."

Scholty's dedication to ecologically-sustainable forestry has been bolstered by the Small-Scale Woodlands Program and the much-needed support of her family. "This is a long-term family piece of property. This is why we are managing it properly and getting everyone, including the children, involved."



Nicky Irwin, left, and Danielle Melo planted 14 trees together

Some like it hot

British Columbia is blessed with one of the widest varieties of conifer species in Canada. Tree species have evolved unique strategies to compete with other trees and vegetation according to many different environmental factors. One of those factors is shade from overstory trees. Each tree species differs in its ability to tolerate shade. The graphic illustrates the relative shade tolerance of common tree species.

Shade Intolerant Tree

Species: As the name implies, shade intolerant species grow poorly in shade. They tend to be "pioneer" species, which "sprint ahead" of the competition, by growing rapidly in full sunlight to fully occupy a site after some kind of disturbance (historically, fire). Examples of relatively shade intolerant species include western larch, lodgepole pine, ponderosa pine, and western white pine.

Shade Tolerant Tree

Species: Shade tolerant species survive under shade better than other species. Their strategy is to "outlast" the competition. Shade tolerant species tend to grow slower than shade intolerant trees, but they are in it for the long haul and often

"release" (grow faster) after shade intolerant trees have died, eventually taking their place in a process called succession.

Note, I said shade tolerant, not "shade loving". There is no such thing as a shade loving tree, but there are shade tolerant trees. All trees struggle to capture as much sunlight as they can. You may see western redcedar in a shaded understory, but that is not because it "loves shade". Cedar out-competes other tree species in a shady environment. A shade tolerant tree will do as well (usually better) under full sunlight as it does under a canopy. Where heavily-shaded cedar gets "burned" after an overstory is removed, it is more due to the abrupt change in condition than to any affinity cedar has for shade.

Why is shade tolerance important? Understanding the relative shade tolerance of tree species has important implications, particularly when choosing between harvest systems. If you rely on harvest/regeneration methods that leave more trees, such as shelterwood or selection systems, you tend to create shadier environments that favour more shade tolerant species. Is this what you want? It may be, if you are on a relatively

Shade intolerant species	western larch
	lodgepole pine
	ponderosa pine
	western white pine
	Douglas-fir
Shade tolerant species	Engelmann spruce
	subalpine fir
	grand fir
	western redcedar
	western hemlock

wet site that can support grand fir, cedar, and other shade tolerant species over the long term.

However, if you are on a drier site, or for other reasons want to favour shade intolerant species, such as larch or white pine, you may want to use clear-cuts or seed-tree harvest methods which allow more sunlight to reach the understory. Or, you may want to modify selective harvests and thinnings to take out a higher percentage of shade tolerant trees to counter-balance the competitive advantage you are creating for them.

Adapted from an article by Chris Schnepf in Woodland Notes, published by the University of Idaho Cooperative Extension System

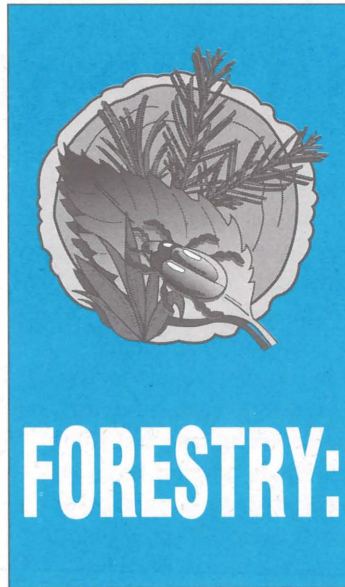
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Workshop profile

Peter and Evelyn Braunschmidt moved to Vancouver Island five years ago from Toronto. With no forestry-related experience, they purchased thirty-one and a half acres of land in Sooke, forty minutes outside Victoria. "We didn't buy the land for its economic value, but for the beauty of the land," says Evelyn.

The Braunschmidts plunged into their new role as small-scale woodland owners, teaching themselves how to care for the land, learning about forestry the hard way. A year after buying the property, the Braunschmidts discovered the Small-Scale Forestry Program, a joint federal/provincial management initiative under the Forest Resource Development Agreement (FRDA II). Peter says they received a lot of help from the Canadian Forest Service under the Small-Scale Forestry Program, but when it came to getting the right answers, they had to first know the right questions.

Last May the Braunschmidts had the opportunity to participate in a workshop developed by the Canadian Forest Service called *Forestry: From the Ground Up*. The workshop was developed to familiarize private landowners and interested individuals with the basic concepts of forestry.



from the ground up

"Many forest landowners in B.C. have a limited understanding of the basic concepts of forestry," says Kelly Finck, Extension Coordinator for the Small-Scale Forestry Program. "If we developed workshops on specific forestry topics, many landowners would probably not attend because they don't have a basic understanding of forestry and may feel intimidated."

Finck explained that *Forestry: From the Ground Up* will boost landowners' forestry knowledge, which will make it easier for them to attend future, more specific workshops.

With landowners such as the Braunschmidts in mind, *Forestry: From the*

Ground Up was designed to build a platform of knowledge that participants can use to further their forestry awareness and education, something Peter and Evelyn could have used years ago. "It was an extension of the knowledge we already had, but it was a very helpful program," says Peter. "This workshop should be mandatory for everybody involved in the Small-Scale Program," adds Evelyn.

A pilot session of *Forestry: From the Ground Up* was held the first weekend of May with thirteen people, mostly forest landowners, in attendance. Starting on the Friday evening, the workshop lasted a total of fifteen hours, ending on noon the following Sunday. The trainer led the group through ten different modules, covering topics such as how forests develop and grow, silviculture, forest harvesting systems, forest health and protection, and integrated resource management. The workshop is targeted at private forest landowners and other interested groups, including woodlot associations.

While the workshop covers the basics of forest management, it also provides a wealth of resources for first-time landowners. "I'm not a forester by any stretch," claims Susan Stacey-Paul, one of the pilot workshop

participants. Stacey-Paul owns thirty acres of land near Nanaimo, an area she manages on her own. "I had a little bit of knowledge going into the [Small-Scale Forestry] Program," she says. "But the workshop hugely reinforced what I'd already read and researched." Through the workshop, Stacey-Paul had the opportunity to communicate and share information with other small-scale landowners on topics such as spacing, tree planting, and pruning. "It opened up other avenues for information. Talking with the other participants was really good."

Along with the course manual, participants receive two resource books:

..... *Managing Your Woodland: A Non-Forester's Guide to Small-Scale Forestry in British Columbia*; and *The Tree Book: Learning to Recognize Trees of British Columbia*. These resources are a helpful reference guide once the participants leave the workshop and begin to apply their knowledge on the land.

Nearly two hours of the workshop is spent on integrated resource management, a module Stacey-Paul found of special interest. "I'd like to eventually be able to have a market garden along with a forest, and maybe an orchard as well," she says. One of the goals of *Forestry: From the Ground Up* is to encourage participants "to

..... investigate other forestry concepts in more depth." This means creating a base of knowledge for small-scale landowners such as Stacey-Paul.

Workshops are expected to be delivered in the fall of '95 and winter of '96. They will be held in various communities throughout British Columbia including, Dawson Creek, Burns Lake, Smithers, Prince George, Williams Lake, Quesnel, Nelson, Cranbrook, Kamloops, Kelowna, Chilliwack, and Courtenay. For further information, please contact Nello Cataldo at (604) 363-0614.

Evelyn
Braunschmidt
with her two
children, Peter-
Max and Astrid





Pruning for healthy growth

Branches: your tree's first line of defence

by Tom Smith, Ph.D.

This article originally appeared in "Forest Times", a publication of the Nova Scotia Dept. of Natural Resources.

In a landscape, people like to see different species of straight stemmed trees, spaced to give a variety of views. Mature trees in the forest usually have long, slender, straight stems. Because of competition from other trees, their lower branches die from lack of light when they are small. When we bring trees into our more "spacious" urban environment, they lack competition from adjacent trees and tend to have short, thick stems and large lower branches. Often, it is necessary to give urban trees some tender loving care to ensure their survival.

Trees do very well at protecting themselves without the aid of man. When wounded, they develop a ring of thick cells to wall off and isolate damage from attacking insects or diseases. In the case of branches,

trees have mechanisms in place to isolate non-living tissue, shed dead branches, and to stop and/or contain attacks from insects and diseases. Moreover, they have cells ready and waiting to promote the fast healing of branch scars. When people prune, they may destroy the tree's defensive setups. Proper care of trees starts with an understanding of how branches are attached, and what the tree has in place to defend itself.

Branches are joined to the stem in a ball-and-socket arrangement. In the spring, the branch tissue grows before the trunk tissue starts to grow. At the junction of the branch and the trunk, the branch tissue turns at a right angle and spreads down the trunk in a spearhead-like manner. When branch growth slows down, trunk tissue growth speeds up and grows over and eventually encloses the branch tissue. The swollen trunk tissue around the

branch tissue is called the branch collar. In the branch crotch, the bark from the twig's bark and the stem's bark push together and upward to form a ridge which is called the branch bark ridge. Its location is one of the keys to proper pruning (Fig. 1).

The first line of the tree's defence comes from the way that liquids move from the branch to the tree trunk. Any food made in the leaves travels downwards: down into the branch tissues embedded in the stem below the branch, then across to the inner bark and down to the roots. The upper part of the twig tissue does not pass or receive liquids from the surrounding trunk tissue. This solid barrier of cell walls forms the first line of defence for the tree as it prevents any upward spread of diseases that may be invading the branch stub.

The second line of defence comes with aging of

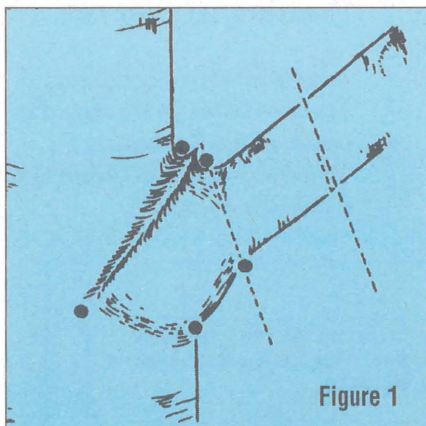


Tree pruning in the Kalum Forest District

Pruning for healthy growth

the twig. As the twig gets older, the cells in the base of the branch become filled with chemicals — a protection zone which resists the spread of diseases. Internally, this protection zone is thickest at the base of the branch where the branch joins the branch collar. In conifers, the protection zone quickly decreases with distances away from the branch collar whereas in hardwoods it is usually flush or slightly depressed into the branch at the trunk. Any insect or disease will find this barrier difficult to penetrate, and so they will remain exposed to the elements.

The third line of defence comes with the healing process of shed twigs. The protection zone is structurally weak and normally branches drop off at the



branch collar. Cells at the bottom and the top of the branch collar begin to produce wood, called woundwood, to cover the stub. Soon, cells at the sides of the

branch collar become active and produce woundwood. Any disease is effectively walled off and isolated. For urban trees, it may take several years to cover a large cut with circular patterns of woundwood growth.

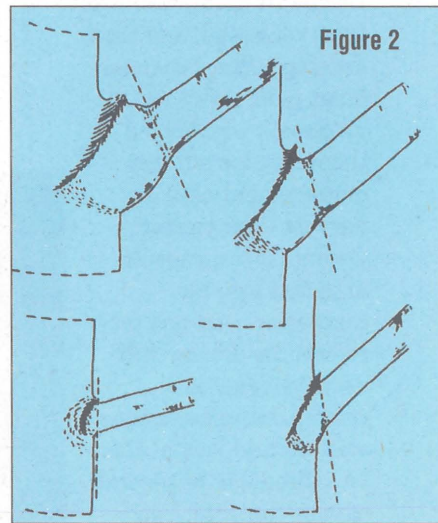
Proper pruning leaves the tree's natural defence system in place and fosters the tree's defence response. The following are important points to remember:

1. The proper pruning of a living branch is a cut as close as possible to the branch collar. There is no set angle for a proper cut as different tree species have different angles (Fig. 2). Never cut through the branch bark ridge. Cutting through the branch collar will destroy the tree's defensive system.

2. Leave a living stub of a centimetre or more. By doing so, the tree's defense system will not become activated and the stub will not be left open to invasion by insects and disease.

3. Do not paint wounds. Painting pruning cuts will decrease the tree's defensive system, and foster the growth of disease.

4. Use a pruning saw. Pruning shears tend to



crush the branch wood, leaving microscopic wounds deep in the inner parts of the twig. This breaks the tree's natural defences.

5. Clean your pruning saw. It can spread disease from one tree to another.

A video entitled "Pruning Second-Growth Stands" is available by contacting the Ministry of Forests, Silviculture Branch, 31 Bastion Square, Victoria, B.C. V8W 3E7. Tel: 604-387-1191.

Tom Smith, Ph.D. is a Forest Entomologist with the Nova Scotia Department of Natural Resources. His references for this article were: A New Tree Biology and Tree Pruning — A World Wide Photo Guide by Shigo, A.L. 1989, Shigo and Trees Associates, Durham, New Hampshire, U.S.A.

So you want to sell your timber?

Do your homework.

Decide what it is you want from your land, and then develop a forest management plan. Ask your neighbors who helped them develop a forest management plan or harvest their timber. Contact forest consultants and logging contractors and ask for references. If they will not give you 3 to 5 references, call someone else. Go and look at the last three jobs of several of your contacts. You would gather this type of information before hiring a plumber or electrician, why not your logger or forest consultant? Keep up with current timber prices.

Follow a plan. Keep your timberland objectives in mind. Use your forest management plan to guide your management decisions. If you do not have a forest management plan write one or have one written. Contact a private forest consultant for help. A clear, well

thought-out management strategy, with maps, will allow you to communicate more effectively with anyone working on your land.



Procure a written contract. Before signing the contract, consider having it reviewed by an attorney skilled in this type of contract. Go over the legal document thoroughly with your contractors, and make sure they know your expectations. Secure a bond to insure that the contract is followed exactly as is written.

Be involved. Inspect the harvest site frequently. Keep records of all management activities. Talk to the head of the contracting crew to make sure they know what you want and that they are abiding by your contract.

Timber harvesting is a big decision, financially and ecologically. Take the time to thoroughly plan and research all aspects of the operation. If you have questions, do not hesitate to ask others who have more experience than you. The following publications may help you:

* *Managing Your Woodland: A Non-Forester's Guide to Small-Scale Forestry in British Columbia.* B.C. Ministry of Forests, and the Canadian Forest Service.

* *Forestry Handbook for British Columbia, Fourth Edition.* The Forestry Undergraduate Society, University of British Columbia, Vancouver, B.C. V6T 1W5.

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