

A GUIDE TO SEEDLING SELECTION



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University of Idaho

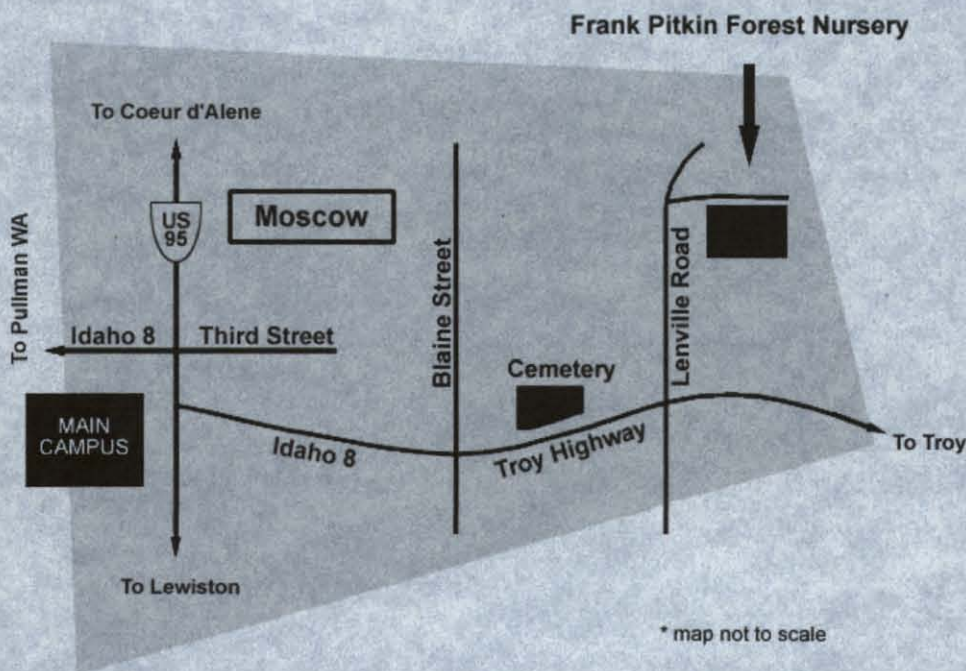
College of Natural Resources



Eagerly serving Idahoans, (L to R): Sue Morrison, Dave Wenny, Annette Brusven, Don Regan, and Mary Schierman.

About Us ...

When the nursery was first established in 1909, it grew bareroot (field-grown) tree and shrub seedlings for conservation. In 1982, container-grown seedlings (grown in greenhouses) replaced bareroot production. Our operation emphasizes teaching, research, and service. We teach students about forest planting and nursery management, conduct research to improve seedling quality and subsequent survival and growth, and grow seedlings for private industry and the public. Almost all the revenue used to meet these obligations is received through seedling sales and outside grants. We are a proud member of the Idaho Nursery and Landscape Association and cooperate with Idaho's private nursery owners through an advisory committee, keeping them up-to-date with our research findings.



Please visit our nursery in Moscow along Idaho 8 (Troy Highway) on the University of Idaho Plant Science Farm. We're open weekdays from 8:00 am until 3:30 pm. Tours for larger groups can be arranged by calling (208) 885-3512.

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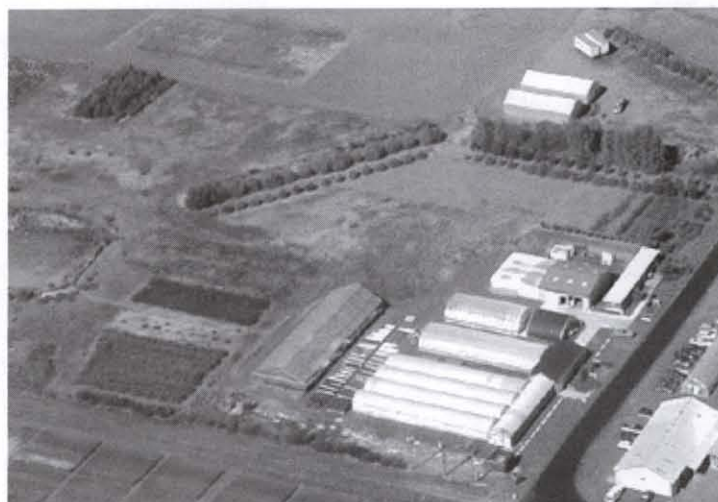
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Center for Forest Nursery and Seedling Research

Frank Pitkin Forest Nursery

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Get Paid to Plant Seedlings!

Cost-sharing is available for tree-planting in Idaho through both state and federal programs. Generally aimed toward rural situations, these programs help cover the costs of site preparation, seedlings, and planting. Often, small acreages are acceptable, so we encourage anyone planning to plant seedlings to check these programs for possible financial assistance.

Habitat Improvement Program (HIP) targets improvements for upland game birds and waterfowl habitat on privately owned lands. Idaho Department of Fish and Game (IDFG) administers this program. Call your nearest IDFG office, and a HIP biologist will help you assess the potential of your land, plan projects to develop your land to benefit wildlife, and share the costs of buying and planting trees and shrubs.

Forest Lands Enhancement Program (FLEP) is a program administered by the Idaho Department of Lands. FLEP provides cost-sharing for a variety of tree-planting projects, including forest plantings, windbreaks, riparian enhancement, and wildlife habitat. For more

information, contact your nearest Idaho Department of Lands forester.

Conservation Reserve Program (CRP) and Environmental Quality Incentive Program (EQIP) are administered through the Consolidated Farm Service Agency. CRP pays owners of erodible, previously cultivated farm lands to remove them from production, and will cost-share tree and shrub planting. EQIP cost-shares tree and shrub planting onto qualifying land. For more information, contact your nearest Consolidated Farm Service Agency office or Natural Resources Conservation Service office.

Why Plant a Windbreak?

Windbreaks are for . . .

- **home energy conservation.** Windbreaks can decrease winter heating costs 10% to 40% and reduce cold air infiltration into your home by 75%.
- **improved crop yields.** Yields are higher on the lee sides of windbreaks — anywhere from 5% to 44%—because lower wind speeds evaporate less moisture from the soil and plants. True, the first few rows next to the windbreak will not grow as well, but the area of best soil and crop protection extends to 10 times the height of the windbreak.
- **reduced soil erosion.** A windbreak will decrease wind speed close to the ground up to 50%, lessening the wind's ability to blow away your topsoil and productivity.
- **better livestock performance.** The energy requirements for beef cows increases 13% for each 10° F drop in windchill temperature below 30° F. That means when it's 10° F and the wind is blowing 25 miles per hour (-29° F windchill), cows use 77% more energy, standing outside, just to stay warm. A windbreak would reduce that consumption by more than half.
- **snow drift control.** A properly placed windbreak will keep snow from drifting across your driveway, farm lane, or access roads — a big advantage when it's time to plow.
- **wildlife habitat.** Wildlife will use windbreaks for cover, food and reproduction. Studies have shown 50 to 80 bird nests per mile of windbreak! Don't forget, birds are important predators of insects and rodents too.
- **increased home value.** Healthy trees around your home add value to your property.

How Long Until I Get Results?

An irrigated, weed-free windbreak will provide noticeable protection within 3 to 4 years and will give effective protection within 7 to 8 years. Dryland windbreaks will give effective protection within about 7 to 12 years, depending on soil and precipitation.

Windbreaks for Winter Wildlife Cover

"Flat Creek Covey"
by Scott Zoellick



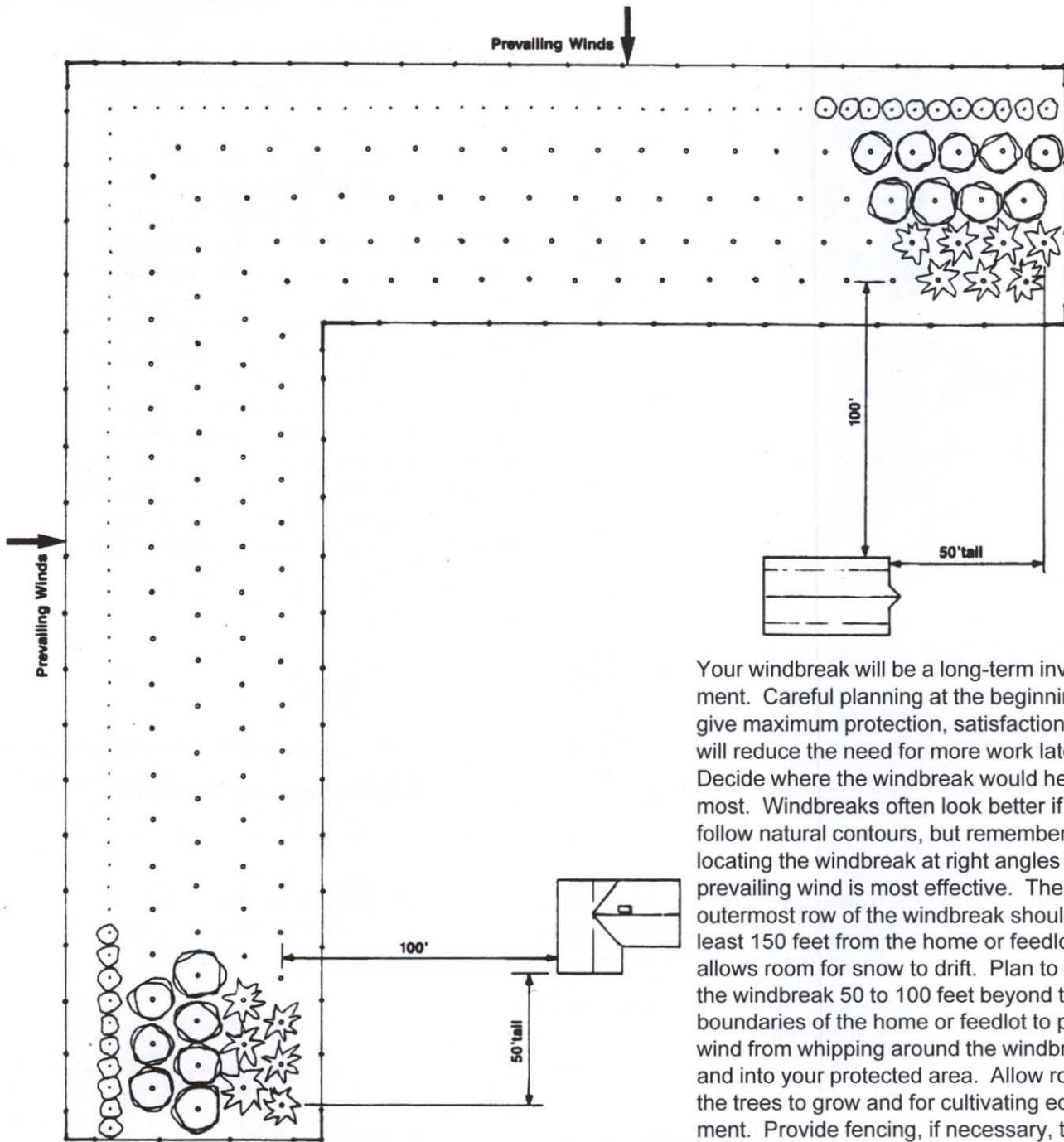
"Under Cover" by
Gary Moss

Good wildlife habitat can be created on as little as ½ acre. An ideal arrangement has at least 5 rows, with the 3 middle rows being evergreen, and the 2 outer rows deciduous shrubs. Windbreaks planted east to west provide the best wildlife benefit. During winter months, sun shines directly on the southern rows. This allows birds and animals to "sun" themselves where the wind protection is often the greatest, thereby lowering their metabolism and putting less stress on them. Plant food-bearing shrubs in the outer rows. Good food-producing shrubs include Nanking cherry, American plum, chokecherry, Siberian peashrub, currants, western sand cherry, oakleaf sumac, native mountain-ash, black hawthorn, and rose. Good evergreens are types that don't grow too tall, but stay dense and bushy. Fine choices include Rocky Mountain juniper, Austrian pine, and blue spruce.

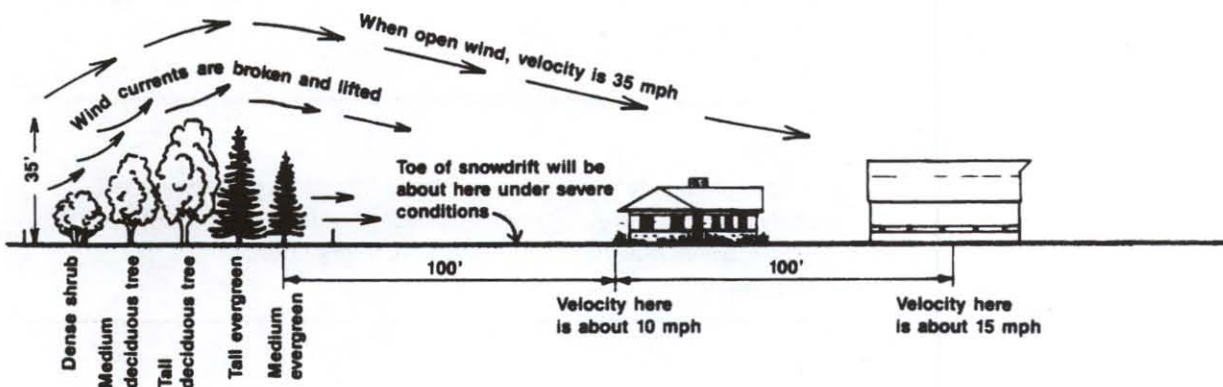
To view and order other neat wildlife prints
see the Pheasants Forever home page at:
www.pheasantsforever.org

Region of Idaho	Recommended Shrubs	Recommended Conifers
Northern	Siberian peashrub, rugosa and Wood's rose, western sand cherry, snowberry American plum, Nanking cherry, serviceberry, black hawthorn, ninebark, golden and red-flowering currant, and Rocky Mountain maple	Rocky Mountain juniper, blue spruce, and Austrian pine
Southwestern	Siberian peashrub, American plum, rugosa and Wood's rose, oakleaf sumac, chokecherry, snowberry, serviceberry, and golden currant	Rocky Mountain juniper, Austrian pine, Scotch pine, and blue spruce
Southeastern	Siberian peashrub, chokecherry, American plum, oakleaf sumac, Nanking cherry, rugosa and Wood's rose, serviceberry, snowberry, and golden currant	Rocky Mountain juniper, blue spruce, Austrian pine, Scotch pine, and Norway spruce

Planning Your Windbreak

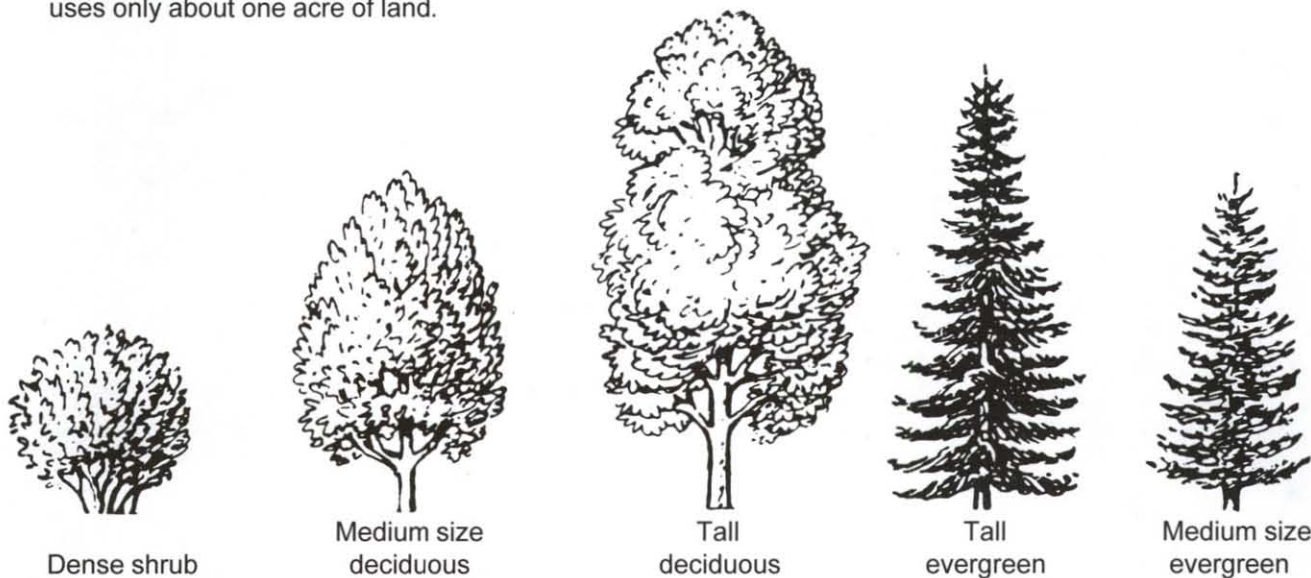


Your windbreak will be a long-term investment. Careful planning at the beginning will give maximum protection, satisfaction, and will reduce the need for more work later. Decide where the windbreak would help the most. Windbreaks often look better if they follow natural contours, but remember that locating the windbreak at right angles to the prevailing wind is most effective. The outermost row of the windbreak should be at least 150 feet from the home or feedlot. This allows room for snow to drift. Plan to extend the windbreak 50 to 100 feet beyond the boundaries of the home or feedlot to prevent wind from whipping around the windbreak and into your protected area. Allow room for the trees to grow and for cultivating equipment. Provide fencing, if necessary, to keep livestock out of your windbreak.



How Many Rows Do I Need?

Plan your windbreak to fit the space you have available. Keep in mind that protection increases with the number of rows planted if the trees have room to grow. A 5-row windbreak provides the most protection, and a 5-row windbreak, 450 feet long, uses only about one acre of land.



See page 12 for an index of species.
Species descriptions start on page 15.

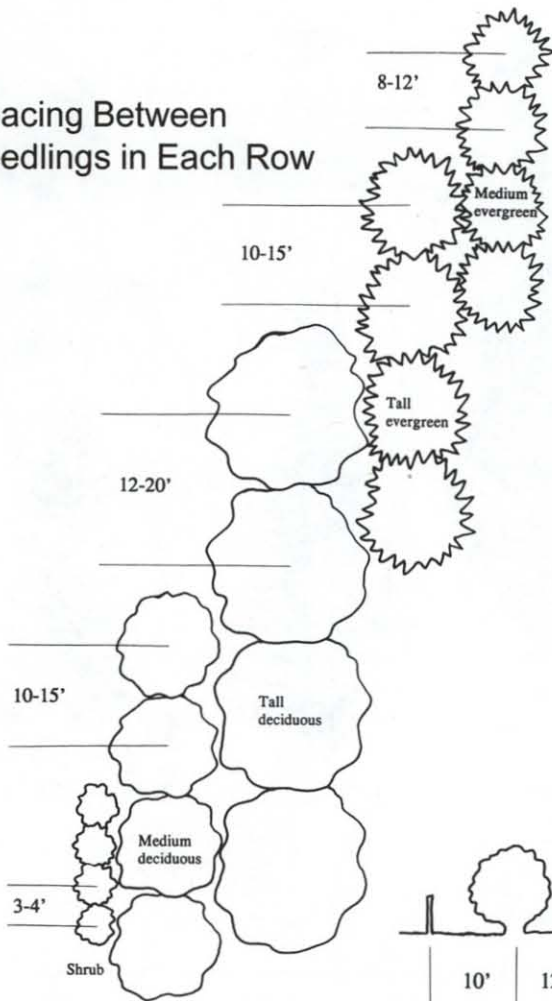
Tree Selections for Windbreaks With Less Than 5 Rows

If limited space prevents planting a 5-row windbreak, use fewer rows rather than crowding the trees. Crowded trees grow more slowly, stop growing at an earlier age, and are more susceptible to insect and disease problems.

If you have room for only	First Choice	Second Choice
4 rows	Dense shrub Medium ht evergreen Tall evergreen Medium ht evergreen	Dense shrub Medium ht evergreen Tall evergreen Medium ht evergreen
3 rows	Dense shrub Tall evergreen Medium ht evergreen	Dense shrub Tall deciduous Medium ht evergreen
2 rows	Medium ht evergreen Tall evergreen	Dense shrub Tall evergreen
1 row	Medium ht evergreen	Tall evergreen

How Far Apart Do I Plant?

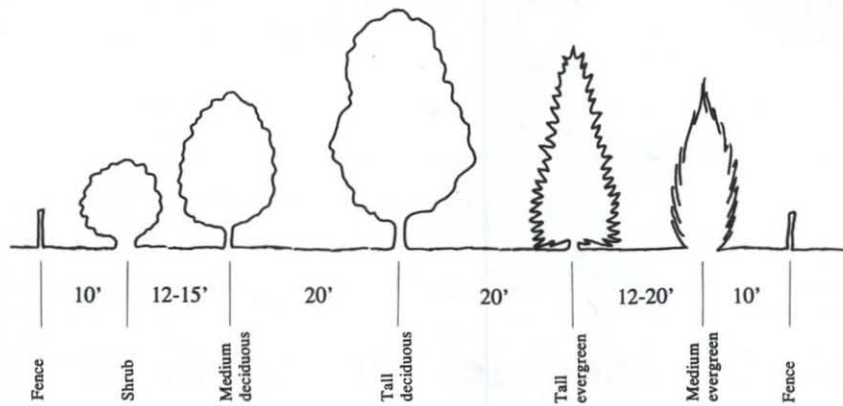
Spacing Between Seedlings in Each Row



Adequate growing space assures a longer, more useful life for your windbreak. The recommended spacings look quite large when planting small seedlings, but the trees will grow rapidly to fill the areas (see figures to left and below for recommended spacings between rows, and between seedlings within the row).

Use wider spacings in areas with lower precipitation. Row spacing should be at least 4 feet wider than cultivation equipment. Tall deciduous trees should be at least 20 feet from shrubs and evergreen trees. Use close spacings in the windward row and in windbreaks with only two rows. Wider spacings will work better in the interior and lee rows of multiple-row windbreaks.

Spacing Between Rows



How Many Trees Do I Order?

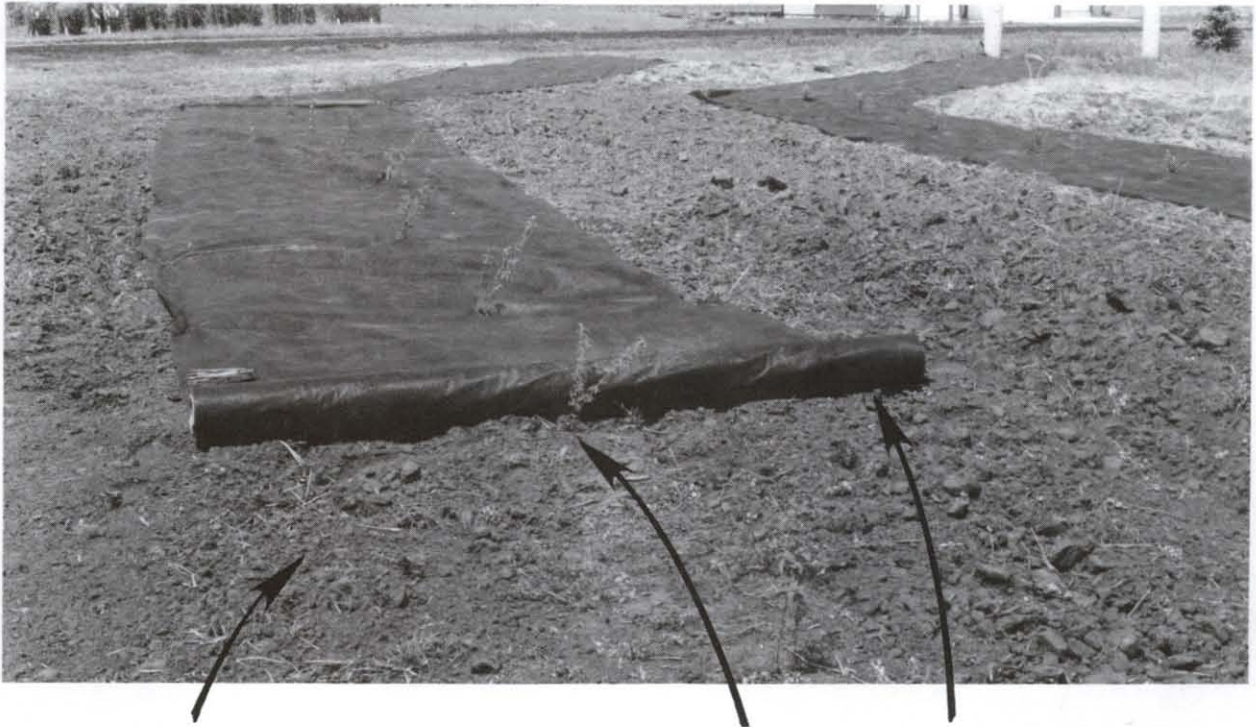
For windbreaks and wildlife winter cover areas, divide the length of each row by the in-row spacing to calculate how many seedlings you'll need per row. For Christmas tree or timber planting, use the general guidelines shown to the right. Remember, the drier the site, the wider the spacing.

	Spacing in feet	Trees per acre
Christmas trees	5 x 5	1,742
	6 x 6	1,210
Timber	9 x 9	538
	10 x 10	436
	12 x 12	303

Want additional information on planning, establishing and caring for windbreaks, shelterbelts and living fences?

We highly recommend the newly released *Trees Against the Wind*. This excellent 40 page publication with color photos is available for \$8.00 from UI Ag Publications. See page 10 for ordering information.

5 Planting Steps to Give Your Windbreak the Best Start



- 1.** Weed competition is the number one cause of seedling death. If weeds aren't much of a problem, clean cultivate the planting area **BEFORE** your seedlings arrive. If weeds are a problem, especially perennial weeds such as thistle or bindweed, herbicide applications may be necessary. Please consult your county agent before using herbicides as carryover effects may damage your seedlings.
- 2.** Plant your seedlings according to the instructions we ship with your order. Plan to have a shovel or hoedad ready to use when your seedlings arrive. We do not recommend dibble planting as dibles often severely damage the soil and reduce seedling survival and growth.
- 3.** Use a weed barrier such as Typar that allows water and air to pass through it but prevents weed establishment. Shown here is a 6-foot-wide strip, the minimum we recommend.
- 4.** Cover the weed barrier with a mulch of wood chips or decorative rock. This will increase the life of the weed barrier, make the barrier more effective, and preserve soil moisture.



- 5.** Use a pre-emergent herbicide such as Pendulum AquaCap to keep weeds from sprouting on the mulch. Always dress appropriately when applying chemicals and follow all label directions. If you don't like chemicals, the weed barrier will keep weed roots from reaching the soil so they'll pull out of the mulch with little effort.

Weeds vs. Seedlings



You'll get larger, healthier trees and shrubs faster if you control weeds and grass. Weeds and grass growing next to seedlings reduce growth and are the number one cause of seedling mortality.

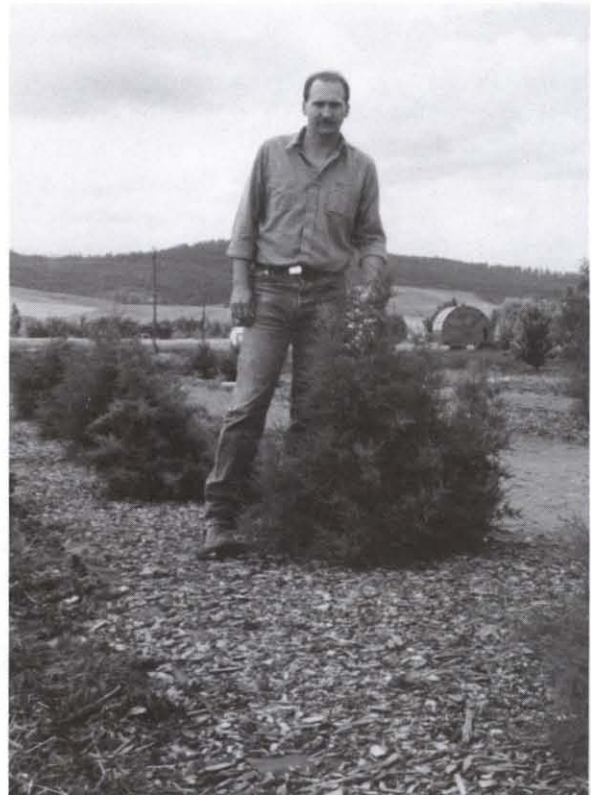
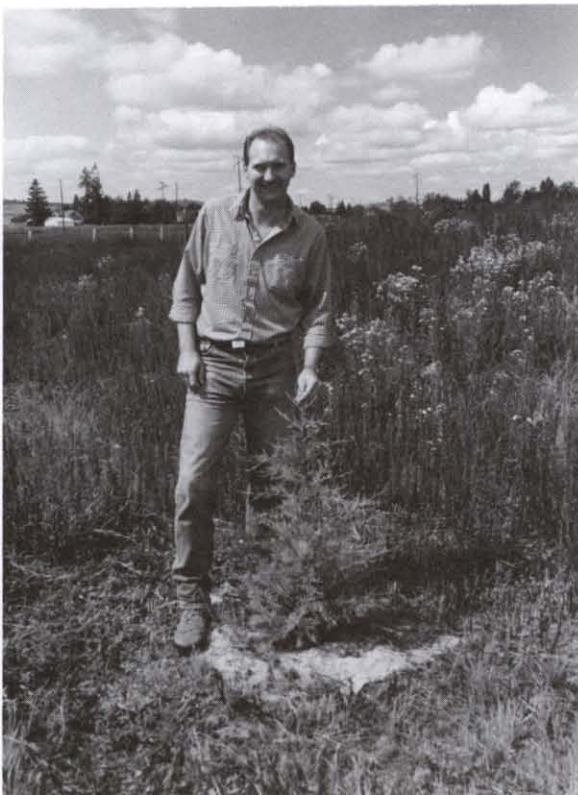
The 2 rows of Siberian peashrub shown in these 1993 photos were both planted in spring 1989 near the nursery. They clearly demonstrate the importance of weed and grass control. In the top photo, former Secretary Linda Golberg poses by a row of peashrub where the lawn grass was allowed to grow within the row. The owners have had a difficult time keeping the row looking neat and the peashrub growth has been slow. In the bottom photo, the peashrub were protected by a 6-foot-wide weed barrier covered with wood chips.



More Weeds vs. Seedlings

Need some more proof that weed control improves seedling growth? Compare these 3 photos (taken in 1993) of Rocky Mountain juniper planted in spring 1990. In the right photo, Kas Dumroese kneels next to a seedling growing in a jungle of grass. Without any form of weed control, this juniper has struggled to about 14 inches in height. In the lower left photo, the juniper looks much better, having benefitted from twice-yearly cutting of the grass and weeds in a 6-foot-diameter circle around it. This tree also had a 3-foot-square weed barrier placed around it at the time of planting. The best looking juniper is in the lower right photo. The combination of a 6-foot-wide weed barrier covered with wood chips and a 3-foot-wide tilled strip on either side of that has allowed this juniper to achieve maximum growth.

Need more proof on the need to control weeds? We highly recommend reading *Enhancing Reforestation Success in the Inland Northwest* by Paul Oester. This publication may be purchased for \$2 from UI Ag Publications. See page 10 for ordering information.



Animal Damage

Seedlings can be damaged by livestock, deer and elk, rodents, or other small animals. Broadleaf species are especially vulnerable to browsing. Here are a few hints to help you protect seedlings from animal damage.

Big Game

Deer and elk can inflict serious damage to seedlings, especially deciduous trees and shrubs. You can protect seedlings with mechanical barriers or by using chemical browse inhibitors.

Mechanical barriers - A 6- to 8-foot-tall fence is an option for keeping big game from your seedlings (see pub below). Another option is tree tubes, but they work well only for deciduous trees (see photo on page 11). Made of photodegradable plastic, tubes come in various lengths; a tube at least 6 feet tall is necessary to prevent deer and elk browsing. Trees grow taller and faster inside tubes. Soon they are above the browse line, and eventually the tube disintegrates. If you'd like more information on tubes, please contact us.

Chemical inhibitors - Your local Idaho Department of Fish and Game officer will have information on chemical inhibitors you spray on seedlings.

Rodents

Voles - Common throughout Idaho, voles attack the base of seedlings and small trees. If the tree is not completely girdled by gnawing, it may be left in such a weakened state that summer stress will kill it. Trees can be protected in several ways: clean cultivation, barriers, poisons, and traps. Clean cultivation is a simple way to keep these pests from your seedlings. Voles don't like to cross bare soil so a weed-free zone around your trees will help discourage feeding. Plowing or tilling a 6-foot-wide strip on either side of the row helps keep the pests away. This also improves seedling growth by reducing competition for water and nutrients by weeds. A piece of 4-inch PVC pipe or plastic drain tile, about 8 to 10 inches long, or a 8 to 12 inch tree tube placed around new seedlings, will help keep the rodents away. Wooden stakes may be needed to keep the pipe from blowing over. Finally, poisoning voles may be necessary when populations are very high. These pesticides often require a pesticide license to buy and apply.

Gophers - Pocket gophers can be a terrible problem. They usually gnaw off the roots, often leaving the above-ground portion of the seedling or tree standing. Sometimes gophers eat seedlings entirely. They are extremely difficult to eradicate from an area. Clean cultivation, as described for voles, will greatly reduce gopher feeding. Trapping and/or poisoning can be effective if you are persistent.

Ordering useful publications

Ag Communications at the University of Idaho has several helpful publications, including information on Christmas tree production, landscaping, fertilization, insects and disease problems, etc. Write them for a catalog at: Ag Publications Building, University of Idaho, Moscow, ID 83844-2240 (telephone 208-885-7982). Their catalog and ordering information can be viewed on the Internet at: <http://info.ag.uidaho.edu>.

Some of the best information we've come across for controlling vole, gopher, mole, and ground squirrel damage is available through Oregon State University. Write them for their Educational Materials List (catalog) at Publication Orders, Extension and Station Communications, Oregon State University, 422 Kerr Administration, Corvallis, OR 97331-2119 (telephone 541-737-2513 or fax 541-737-0817). Their catalog can be viewed, and many publications downloaded, over the Internet at: <http://eesc.orst.edu>.

For information on fences, order *Hardwood Plantations for the Inland Northwest* from Editor, Idaho Forest, Wildlife & Range Experiment Station, University of Idaho, Moscow, ID 83844-1130 (include \$3.00 for shipping/handling) or view on the Internet at <http://www.cnr.uidaho.edu/extforest/Pubs&Workshops.htm>.

If you've any questions or suspect an insect, disease, or planting site problem, contact your local county extension agent, Idaho Department of Lands woodland forester, or give us a call.

Livestock

Your windbreak will grow best if you keep livestock out of it. Livestock trample and eat small seedlings. Once the trees are bigger, livestock can cause damage by rubbing off or eating the bark, and browsing on lower branches. Removal of lower branches by browsing reduces the effectiveness of your windbreak. Fencing is the easiest way to keep livestock away from your windbreak.

Why Buy SuperStock?



Kenneth Quick knows why you should buy SuperStock seedlings. Both of these photos (taken in 1993) show Ken with Austrian pine seedlings planted in spring 1990. On the left he's kneeling by one grown in a 4-cubic-inch container. Compare that with the 20-cubic-inch SuperStock shown in the right photo.



Nursery director and Professor of Silviculture, Dr. David Wenny proudly holds a 20-cubic-inch SuperStock blue spruce (left) and a 4-cubic-inch blue spruce.



Greenhouse manager Sue Morrison likes the growth of this SuperStock Russian-olive, planted in spring 1992 and photographed in 1993. It's growing in a 2-foot-tall plastic tree tube to protect it from rabbit and vole gnawing. Besides providing protection from rodent damage, tree tubes can also protect seedlings from herbicide applications and grass trimming.

Species	Size	Idaho native	Seedling ht (in)	Mature ht (ft)	pg	Zone	Drought hardy	Uses	Birds	Showy flowers
HARDWOOD TREES & SHRUBS										
Alder, sitka	M	x	4-10	10-15	15	4		R, S	C, F	
Alder, thinleaf	M	x	4-8	15-30	15	3		R, S	C, F	
Alder, white	T	x	NA	50-70	15	5		R, S	C, F	
Apple, common wild	M		10-14	25-30	16	3			C, F	x
Ash, green	M		8-14	35	16	3	x	W	C, F	
Ash, native mtn-	M	x	2-8	6-20	16	3		R	C, F	x
Aspen, quaking	M	x	8-14	40	17	2		R	C	
Birch, Western paper	T	x	4-12	80	17	2		R	F	
Birch, water	M	x	4-12	15-30	17	4		R, S	C, F	
Bitterbrush, antelope	S	x	4-8	3-4	18	4	x	S, W	C, F	x
Boxwood, mountain	S	x	6-12	1-4	i*	3	x	H, S	C, F	
Cascara	M	x	4-8	20-30	18	4		S	C, F	
Cherry, black	M		7-16	40-50	18	3		W	F	x
Cherry, choke	M	x	4-10	10-25	19	2		S, W	F	x
Cherry, dwarf sand	G		7-12	1	19	3	x	S	C, F	
Cherry, Nanking	S		9-12	6-10	19	2	x	S, W	F	x
Cherry, Western sand	S		10-16	3-6	20	3	x	S, W	F	x
Chestnut, American	T		10-18	75-90	20	4	x	C, W	F	
Cinquefoil, shrubby	S	x	6-12	4-6	21	2	x	S, W	C, F	x
Cranberry, highbush	S	x	3-7	8-12	21	3		H,S,W	C, F	x
Currant, golden	S	x	7-12	3-6	22	2	x	H,S,W	C, F	
Currant, red-flowering	S	x	4-8	3-6	22	2	x	H,S,W	C, F	
Dogwood, red/yellow	S	x	6-14	6-15	22	2		H,R,S	C, F	x
Hawthorn, black	M	x	6-12	20	23	4		R,S,W	C, F	
Hazelnut, beaked	M	x	3-6	8-12	23	4		R, S	F	
Kinnikinnick	G	x	6-12	1	23	2	x	S	F	
Lilac-common purple	S		4-12	10-15	24	3	x	S, W	C	x
Locust, black	T		8-16	40-75	24	3	x	W	C	x
Locust, honey-	T		10-18	40-70	24	4	x	W	C	x
Maple, bigtooth	M	x	NA	30-40	25	3		C, W	C	
Maple, Rocky Mtn	S	x	5-14	4-15	25	4		R	C, F	
Maple, sugar	T		5-12	60-70	25	3		C	C	
Ninebark, mallow	S	x	6-12	5-7	26	2	x	S, W	C	
Oak, bur	T		6-14	60-75	26	2	x	W	F	
Oak, bur-english	T		5-12	70-80	26	3	x	W	F	
Oak, bur-gambel	M		4-12	20-40	26	3	x	W	C, F	
Oak, English	T		6-14	75-90	26	4	x	W	F	
Oak, Gambel	M		4-8	15-30	26	4	x	W	C, F	
Ocean-spray	S	x	5-8	5-10	27	3	x	S, W	C	x
Peashrub, Siberian	S		7-12	10-15	27	2	x	H,S,W	C, F	x
Plum, American	M		8-14	20-30	27	4		S, W	C, F	x
Poplar, Idaho hybrid	T		10-16	50-80	28	3		R, W	C	
Rose, rugosa	S		6-10	4-6	28	2	x	S, W	C, F	x
Rose, Woods	S	x	6-12	2-6	29	3	x	S, W	C, F	x
Serviceberry	M	x	6-12	20	29	2	x	W	C, F	x
Snowberry	S	x	8-14	3-6	29	3	x	S, W	C, F	
Spirea, Douglas	S	x	5-10	3-6	30	4		R, S	C	x
Spirea, mountain	S	x	4-8	2-3	30	4		R, S	C, F	x
Sumac, oakleaf	S	x	8-12	3-4	30	3	x	H,S,W	C, F	

Species	Size	Idaho native	Seedling ht (in)	Mature ht (ft)	pg	Zone	Drought hardy	Uses	Birds	Showy flowers
HARDWOODS CONTINUED										
Syringa, Lewis	S	x	5-8	6-9	30	4		S, W	F	x
Twinberry, black	S	x	6-10	10	31	3		R, S	C, F	
Walnut, black	T		7-18	50-75	31	4		C, W		
Walnut, Carpathian	T		6-14	40-60	31	4	x	C, W	F	
Willow, Arctic blue	S		12-16	10-15	32	3		H,S,W	C	
Willow, coyote	M	x	8-12	20-25	32	5		R, S	C	
Willow, Drummond	S	x	12-16	9	32	5		R, S	C	
Willow, golden	M		12-16	40-50	33	2		R, W	C	
Willow, laurel	M		12-16	20-40	33	4		R,S,W	C	
Willow, Mackenzie	S	x	12-16	10-12	33	5		R, S	C	

CONIFERS										
Cedar, incense	T		8-15	60-150	34	5	x	S, W		
Cedar, Western red-	T	x	8-14	>100	34	5		H, F	C	
Fir, Algerian	T		NA	40-60	34	5		X	C, F	
Fir, Canaan	M		5-16	40-60	35	4		X	C, F	
Fir, Rky mtn concolor	T		6-12	>100	35	3		W, X	C, F	
Fir, Rky mtn Douglas-	T	x	4-12	60-100	35	4		F,W,X	C, F	
Fir, Europ. silver fir	T		4-10	>100	36	4		X	C, F	
Fir, fraser	M		5-18	40-60	36	4		X	C, F	
Fir, grand	T	x	6-12	>100	36	4		F, X	C, F	
Fir, trojan	T		4-10	>100	37	4		X	C, F	
Juniper, Rocky mtn	M	x	5-12	20-30	37	3	x	H, W	C, F	
Larch, Western	T	x	4-12	>100	37	3		F		
Pine, Austrian	M		4-10	40-60	38	3		W	C, F	
Pine, lodgepole	T	x	5-10	50-100	38	4		F	F	
Pine, ponderosa	T	x	4-12	60-100	38	3	x	F, W	C, F	
Pine, Scotch	T		5-12	40-70	39	3		W, X	F	
Pine, Western white	T	x	3-12	>100	39	3		F	C, F	
Spruce, blue	M	x	5-12	50-60	39	2		W, X	C	
Spruce, Engelmann	T	x	6-12	>100	39	2		F	C	
Spruce, Norway	T		7-14	60-80	40	2		W, X	C	

* = catalog insert

KEY

Size

S = Shrub
M = Medium-sized tree
T = Tall tree
G = Ground cover (< 1 ft)

Uses

C = Specialty crop
F = Reforestation
R = Riparian
H = Hedge
S = Soil stabilization
W = Windbreak
X = Christmas trees

Birds

C = Cover
F = Food

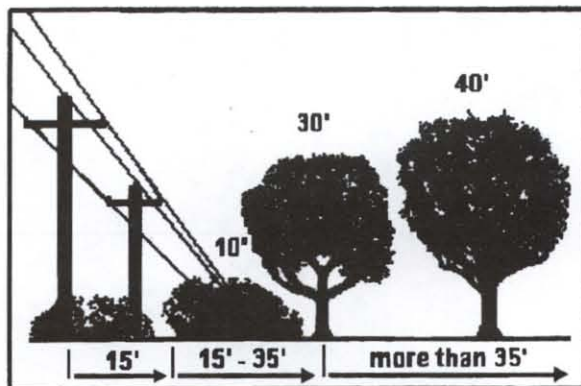
USDA Hardiness Zones for Idaho County Seats and Selected Cities in MT, WA, OR & UT

Aberdeen	5	Malad	4	Missoula, MT	5
American Falls	4	Marsing	6	Libby	5
Arco	4	McCall	4	Hamilton	4
Blackfoot	5	Moscow	6	Dillon	4
Boise	6	Mountain Home	6		
Bonnars Ferry	6	Nezperce	5-6		
Burley	5-6	Orofino	6	Spokane, WA	5-6
Caldwell	6	Paris	4	Walla Walla	6
Cascade	4	Payette	5-6	Pullman	6
Challis	4	Pocatello	4	Kettle Falls	5
Coeur d'Alene	6	Preston	4		
Council	5	Rexberg	4	Pendleton, OR	6
Driggs	4	Rigby	4	LaGrande	5-6
Dubois	4	Rupert	5	Burns	5
Emmett	6	Salmon	4	Ontario	6
Fairfield	4	Sandpoint	6		
Gooding	6	Shoshone	5		
Grangeville	6	St. Anthony	4	Logan, UT	4
Hailey	4	St. Maries	5	Ogden	5
Idaho City	5	Stanley	3	Salt Lake City	5-6
Idaho Falls	4	Sun Valley	4	Portersville	5
Jerome	6	Soda Springs	3-4		
Kamiah	6	Twin Falls	6		
Lewiston	6	Weiser	5		

Average Annual Minimum Temperature for Each Zone	
Zone 2	-50° to -40°F
Zone 3	-40° to -30°
Zone 4	-30° to -20°
Zone 5	-20° to -10°
Zone 6	-10° to 0°

These zones are based on average minimum temperatures. We recommend planting trees and shrubs that are cold hardy to 2 zones below what is indicated above. For example, in Moscow we suggest planting zone 4 species, even though Moscow is shown to be zone 6. This is to compensate for below average temperatures that we sometimes get in the winter. Extreme minimum temperatures indicate most of Idaho is a zone 3.

Look Up Before You Plant!



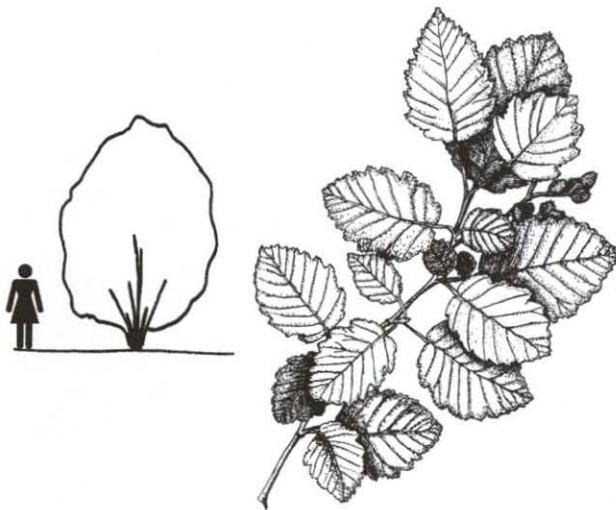
Recommended spacing for trees and shrubs planted near utility lines (taken from *Landscaping and Utilities: Problems, Prevention, and Plant Selection*, written by T.L. Finnerty and others, University of Idaho, College of Agriculture, Cooperative Extension System, Agricultural Experiment Station CIS 991. See page 10 of this catalog for ordering information.)

Species Descriptions

Hardwood Trees & Shrubs



Alder, Sitka (*Alnus sinuata*), an Idaho native, matures into a 10 to 15 foot tall shrub, growing at elevations up to timberline. It prefers moist slopes and streamsides where it will form thickets. Bacteria on all alder roots remove nitrogen from the air which the shrub then uses for growth. It's a good choice for erosion control, planting on disturbed sites, and riparian zone enhancement. **Wildlife benefit:** Seeds are relished by songbirds, including pine siskins, american goldfinches and common redpolls, while the dense growth provides good nesting habitat. Also used by beaver and browsed by deer and elk.



Alder, Thinleaf or Mountain (*Alnus incana* var. *tenuifolia*, previously known as *A. tenuifolia*) is the most common alder in Idaho. It is found throughout the state as a small tree or large bush from 2000 foot to low subalpine. Like other alders, it thrives in moist to wet places, and bacteria live on its roots and provide the tree with nitrogen. Thinleaf alder can reach 30 feet tall and is very useful in riparian revegetation. **Wildlife benefit:** Thinleaf alder provides food for upland gamebirds, songbirds, beaver and hare.



Alder, White (*Alnus rhombifolia*) is one of Idaho's largest, native, broadleaf trees. The biggest specimen in the United States is 70 feet tall and nearly 4 feet in diameter and located in Hells Canyon. White alder has two basic requirements: heat and water — and lots of both! It thrives in the lower Snake, Salmon and Clearwater canyons of central Idaho and tolerates many soil types from sandy to clay. This alder is long lived, fast growing and typically has a single trunk. The wood is moderately hard and is used for pulpwood, veneer and firewood. White alder is being used increasingly more in revegetating disturbed riparian areas. **Wildlife benefit:** Seeds are eaten by redpolls, siskins, and goldfinches. *Not available this year*

Apple, Common Wild (*Malus pumila*), introduced from Europe and Asia, is now commonly naturalized throughout Idaho. With full sun and moderate moisture, it grows to about 25 to 30 feet with a nearly equal spread. It is used in the outer rows of multiple-row windbreaks. Edible apples follow fragrant white flowers.

Wildlife benefit: The apples provide food for bears, chipmunks, robins, woodpeckers, waxwings, pheasants, and deer. If left unpruned, the drooping lower branches provide winter cover for upland game birds.



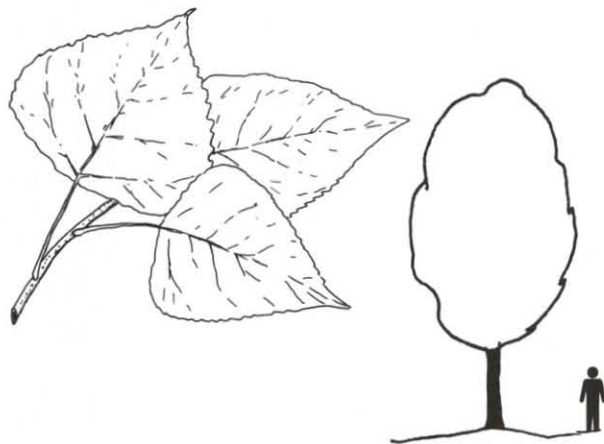
Ash, Green (*Fraxinus pennsylvanica*) is a native to much of the eastern U.S westward to central Montana. It grows moderately fast to 35 feet with an oval, compact, dense crown. Leaves are nearly 12 inches long, made up of five to nine 5-inch-long leaflets. A tough tree, it will take wet soil and bitter cold and is drought tolerant once established. Leaves will burn in hot, dry winds so regular watering is necessary. Green ash would make a good tree for inner rows of multiple-row windbreaks and riparian rehabilitation. **Wildlife benefit:** Songbirds love to nest in these trees and seeds are eaten by birds and small animals.



Ash, Native Mountain-, or Greens Mountain- (*Sorbus scopulina*) grows 6 to 16 feet tall throughout the mountains of Idaho. It shouldn't be confused with the Sitka mountain-ash which also is native, but has rounded leaf tips and is found only in the subalpine zones of northern Idaho. White flower clusters, orange berries, and yellow and orange fall color makes Native mountain-ash a great landscape shrub. **Wildlife benefit:** These multiple-stem trees provide good cover and nesting sites for birds. Robins, waxwings, and grosbeaks find the bright red-orange berries particularly tasty.



*Tree & shrub seedlings are a great gift idea -
Ask us about gift certificates!*



Aspen, Quaking (*Populus tremuloides*) is an Idaho native which quickly grows to about 40 feet. The limbs and trunk are smooth, white to light-green to gray in color. Its leaves are round and "quake" or flutter in even a slight breeze and turn a splendid golden color in fall. Quaking aspen do spread by rhizomes and will form groves over time. Hardy throughout Idaho and not too particular about soil as long as the soil is moist. Our seed comes from northern Idaho. **Wildlife benefit:** A valuable browse species for big game, a favorite of beaver, and often drilled for sap by red-naped sapsuckers.

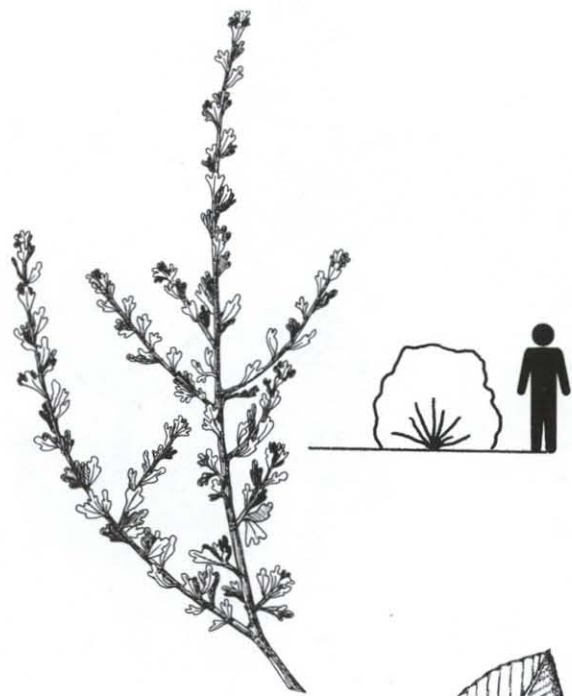


Birch, Western Paper (*Betula papyrifera var commutata*) is native in northern Idaho and may grow to 80 feet. Its crown, more open than on other birches, is rounded or pyramid-shaped with leaves sometimes 4 inches long. The bark turns white and peels in long, narrow, papery, horizontal strips. It is hardy throughout Idaho and not too particular about soil as long as the soil is moist. Lack of moisture during the growing season will make this tree susceptible to borers. Our seed is collected in northern Idaho. **Wildlife benefit:** Songbirds, especially juncos, pine siskins, and redpolls eat the scale-like seeds each winter. *Limited supply - order early!*

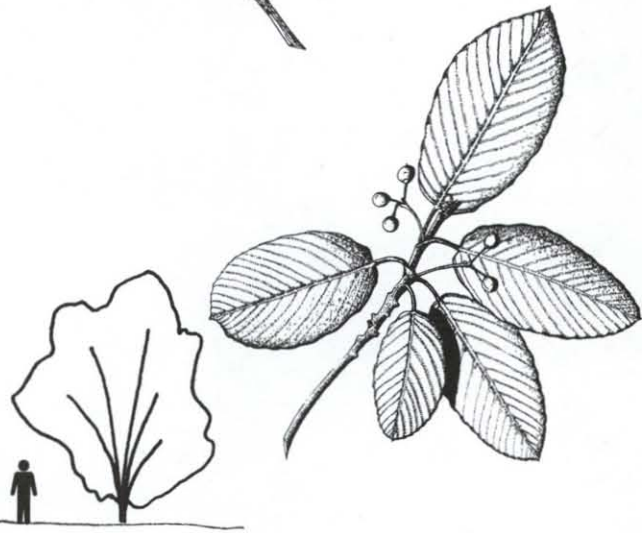


Birch, Water (*Betula occidentalis*) is an Idaho native tree found along our streams. It may reach heights of 30 feet with several trunks, but it is more commonly found as large shrubs with dense thickets of stems which make it a great species for streambank stabilization. The bark is reddish brown to yellowish brown and doesn't peel like paper birch. It does, though, hybridize easily with paper birch which makes for some really interesting hybrids out in the wild. Water birch grows in a wide variety of soils and elevations and is very flood tolerant. The wood is hard and heavy and good for firewood and fenceposts although it doesn't get big enough to use as commercial-grade lumber. This species is more resistant to wood borers than other birches. Our seed is collected from stands in northern Idaho. **Wildlife benefit:** Dense stands provide excellent thermal and hiding cover for many wildlife species. Beavers build dams and lodges with the stems, and catkins, buds, and seeds are eaten by several grouse species, redpolls, pine siskins, chickadees, and kinglets. Hummingbirds and red-naped sapsuckers feed on sap oozing from holes in the bark made by sapsuckers.

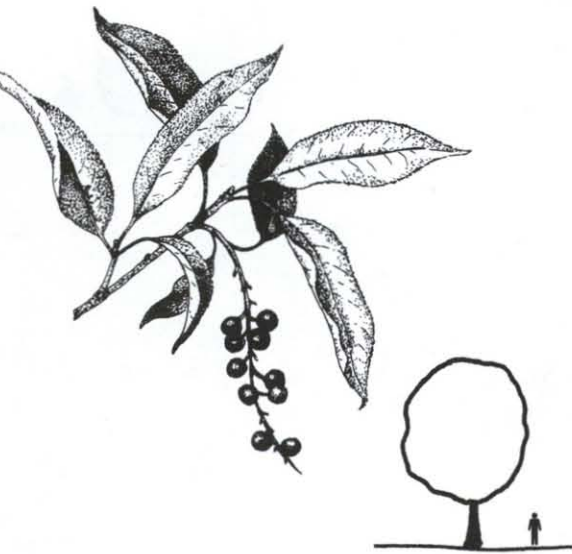
Bitterbrush, Antelope (*Purshia tridentata*) is a very drought and heat tolerant native shrub of central and southern Idaho. It usually grows 3 to 4 feet tall, but in lower elevations can be found up to 12 feet tall. This shrub has a silvery appearance and produces yellow flowers. Antelope Bitterbrush is very long lived and has tremendously long tap roots, reaching 15 to 18 feet deep, which allow it to survive on rocky and arid sites. It is quite adaptable, and is found on all slopes and aspects usually on well-drained soils from 3,000 to 10,000 foot elevation. It is intolerant, however, of shade and soils high in salt. Antelope bitterbrush has been used extensively in land reclamation, watershed erosion control, and habitat improvement. **Wildlife benefit:** It is a very important food source for pronghorn, mule deer, elk, bighorn sheep, and moose, and provides cover for rodents, mule deer, and birds such as sage grouse and Lewis' woodpeckers. The seeds are eaten by rodents.



Cascara (*Rhamnus purshiana*) is a tall shrub found on moist sites in northwestern Idaho at elevations of 3000 feet or less. It is shade tolerant and may reach 30 feet with adequate water and heat. In spring, small greenish-yellow flowers appear, followed by dark purple berries that shouldn't be eaten by humans. Cascara means "bark" in Spanish, and the bark is processed by pharmaceutical companies in the manufacture of laxatives. American Indians in the Northern Rocky Mountains have historically made tea from the bark for this same purpose, hence the common name "chittum." Our seed is collected in northern Idaho. **Wildlife benefit:** Cascara is an important winter browse species for elk and mule deer. The berries provide food for black bear and many bird species including ruffed grouse and band-tailed pigeon.



Cherry, Black (*Prunus serotina*), most commonly known for its use in fine furniture, is a medium-sized tree (40 to 50 feet tall). Growing best in deep, well-drained soils, it has proven to be very hardy in Idaho, easily withstanding late spring and early fall frosts. This species is moderately drought resistant, but may need supplemental water for establishment. Black cherry is one of our most handsome domestic woods, long sought for its excellent quality and high value. With a reddish-brown color and high luster when properly finished, this wood has excellent working qualities, low shrinkage, and freedom from checking and warping, making it a favorite material of cabinetmakers. These wood qualities, combined with its hardness, high wildlife value, and the relative scarcity of this species, make it an ideal tree for planting in plantation and conservation settings. **Wildlife benefit:** Produces abundant, red fruits eaten during the fall by robins, waxwings, finches, towhees, and grosbeaks.





Cherry, Choke-, or Black Choke- (*Prunus virginiana* var. *melanocarpa*) is a very hardy, large shrub or small tree, growing fast to a mature height of 10 to 25 feet. This Idaho native, common throughout Idaho, bears white flowers clustered in hanging spikes that later produce dark, purple fruits. The fruits are a wildlife favorite and make good jellies and pies. Because of its dense growth form, chokecherry is an excellent choice for outer rows of multiple-row windbreaks. **Wildlife benefit:** The fruits are a prime source of food for chipmunks and many songbirds in the fall.



Cherry, Dwarf Sand (*Prunus pumila* var. *depressa*) is a woody prostrate ground cover that is native to the northeastern United States. Creeping stems radiate out from the center, forming attractive, dense mats that are 1 foot high and up to 12 feet wide. This cherry, besides having an extensive underground root system, also forms roots along stems that come in contact with the ground, making it desirable in streambank stabilization and erosion control projects. Dwarf sand cherry is found in sandy soils along streams, but can adapt to most any soil condition. It is quite drought tolerant, likes soils high in calcium, and will also tolerate short periods of periodic flooding. It would also be a useful plant for low-maintenance, xeriscapic landscapes. The leaves are long, narrow and shiny on top, and whitish-pink flowers are produced in May. **Wildlife benefit:** Reddish-purple berries provide food for wildlife.



Cherry, Nanking (*Prunus tomentosa*) from northeastern Asia is an attractive, upright shrub that produces abundant, edible fruit good for making jelly and more. Its fast growth and 6 to 10 feet height make it a good choice for the exterior row of multiple-row windbreaks. Nanking cherry withstands heat, drought, cold, and wind and may bloom 2 to 3 years after planting. **Wildlife benefit:** Produces abundant, red fruit eaten during the fall by robins, finches, waxwings, pine siskins, towhees, and catbirds.

Cherry Dessert Cake

2 cups pitted Nanking cherries
(or other wild sweet cherry)
3/4 cup water
1/2 cup sugar

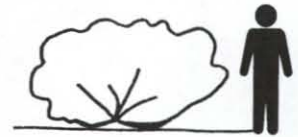
2 Tablespoons butter
1 Tablespoon lemon juice
2 Tablespoons cornstarch
1 yellow or chocolate cake mix

In sauce pan combine cherries and 3/4 cup water. Bring to boil. Lower heat and simmer 2 minutes. Add sugar, butter, lemon juice. Mix cornstarch in 1/4 cup cold water and add slowly, stirring constantly until mix thickens. Pour into a 9x9x2 baking dish. Prepare cake mix as directed on package. Spoon over cherry mixture and bake at 350 degrees for approximately 40 minutes. Serve warm with whipped cream or ice cream.

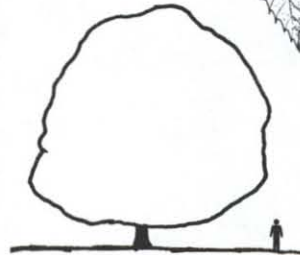
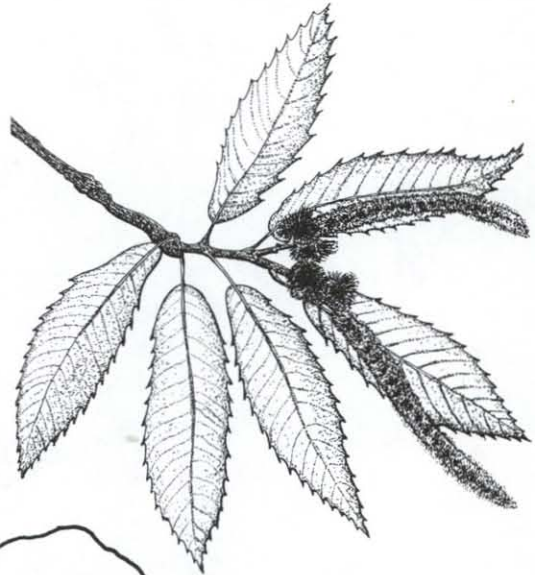
This and other tasty recipes may be found in 'Fruits of your Labor' published by the Colorado State Forest Service Nursery. To order a free copy of this booklet, call 1-970-491-8429.

Cherry, Western Sand (*Prunus besseyi*) is a very hardy shrub that grows 3 to 6 feet tall. This cherry withstands heat, cold, wind, and drought. Spring-blooming white flowers are replaced with large, purplish, sweet cherries good for jams, jellies, and pies. Glossy foliage make it a nice ornamental. We think this species will do well in the outer rows of multiple-row windbreaks.

Wildlife benefit: The cherries provide a great food source for many species of birds.



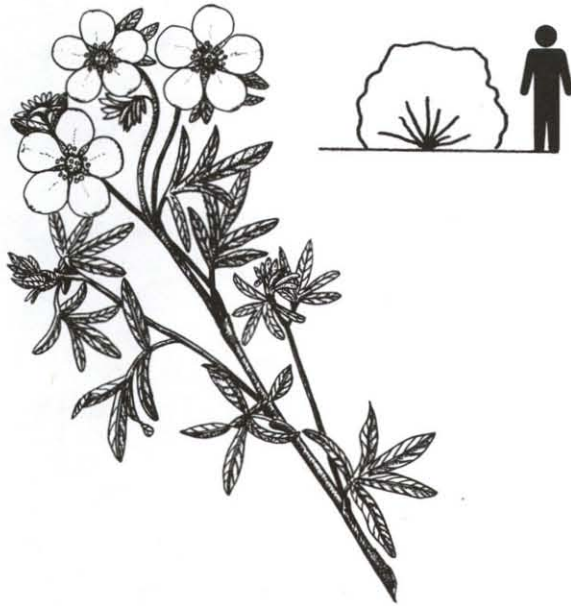
Chestnut, American (*Castanea dentata*) was once considered the queen of eastern American forests but is now reduced to a memory due to the devastating chestnut blight. This great tree grew over 100 feet tall, 4 feet in diameter, with massive, wide-spreading branches and a broad crown. The good news is that it can be grown in the west blight-free! The valuable wood is rot-resistant, light, and durable and used in a variety of ways, from furniture to railroad ties. It prefers a well-drained soil with a pH of 5.5 to 6.5 and will not tolerate high pH or poorly drained soils. Once established they are quite drought-tolerant. The demand for roasting chestnuts was first inspired by the abundance and sweetness of American chestnuts, which are produced in huge quantities every year starting at about age 10. **Wildlife benefit:** The nuts are very nutritious and are relished by bears, deer, squirrels, grouse, and other animals.



Chestnuts have been a part of the human diet for at least 6000 years. They have helped keep entire nations from starvation in times of war and have titillated the palates of nobility over the ages. Enjoy them hot roasted or in any of the other wonderful recipes found in Annie Bhagwandin's "The Chestnut Cook Book" (\$14.45 from Shady Grove Orchards, 183 Shady Grove Rd, Onalaska, WA 98570 or e-mail shadygrove@myhome.net).

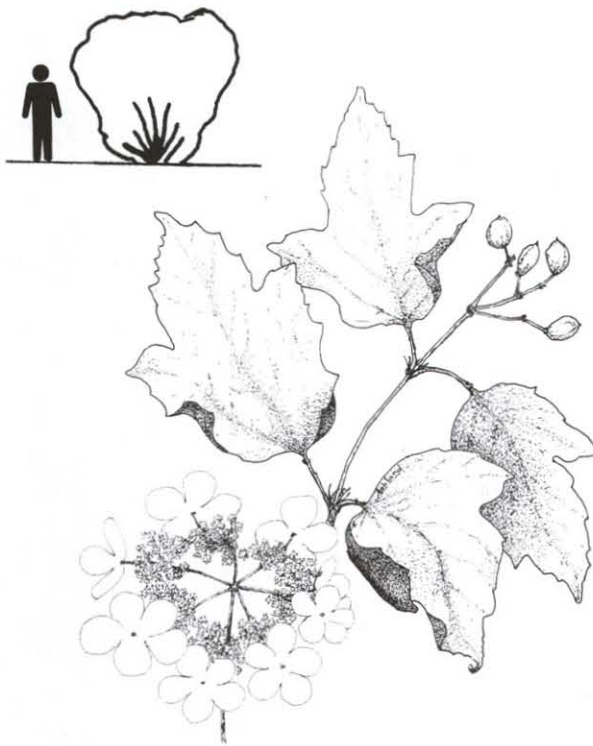
To Roast a Chestnut...

First pierce the shell to create a steam vent by cutting a slit or X with a sharp paring knife through the skin but not into the meat. Roast the nuts by shaking in a chestnut pan or dry skillet over a medium heat for about 15 minutes. The nuts are done when the shell curls away from the cut and the meat turns a translucent yellow, softens and smells sweet. Peel the nuts while they are still hot. Use your fingers to 'pop' the nuts free from the outer leathery shell and its inner papery brown pellicle. For oven roasting place pierced nuts in a roasting pan with a good fitting lid and bake at 400° F for 15 minutes. For microwave roasting place a dozen evenly sized pierced nuts around the outer edge of a paper plate. Cook on high for 2 minutes. Enjoy! **Reprinted by permission of Annie Bhagwandin, Shady Grove Orchards.**



Cinquefoil, Shrubby or Bush (*Dasiphora floribunda* - recently changed from *Potentilla fruticosa*) is a flowering shrub that sounds almost too good to be true! This Idaho native grows from low valleys to mountain peaks — in wetland to upland sites and rock ledges. It is tolerant of cold, heat, drought, flooding, saline, acidic and alkaline soils. It thrives in calcareous soils and full sun, and to top it off, it blooms continuously with inch-wide yellow flowers from June until frost! Shrubby cinquefoil can reach heights of 4 to 6 feet, although at high elevations (>6000 feet), they grow like a cushion plant and may only reach 10 to 12 inches in height. We recommend it for stabilizing streambanks and revegetating disturbed sites, roadcuts, and mine tailings. Shrubby cinquefoil can also be used in the outer row of a windbreak and as a landscape ornamental. According to published reports, another benefit is that it is seldom browsed by deer!

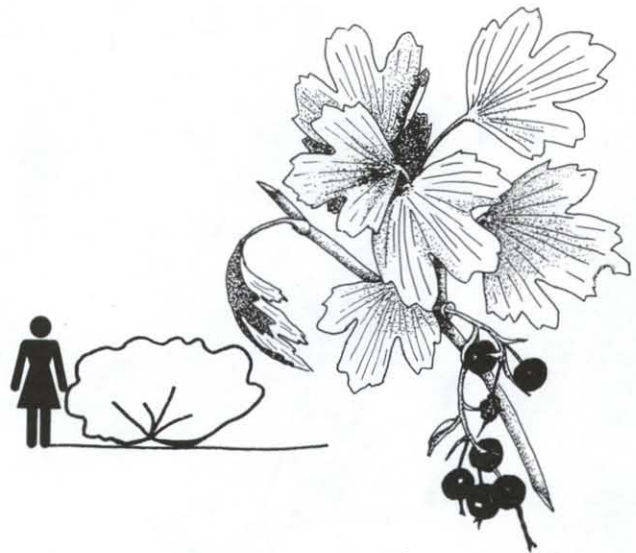
Wildlife benefit: Shrubby cinquefoil provides cover for upland game, birds, and mammals and is an important source of nesting and cover for numerous songbirds. Seeds are eaten by many birds and mammals.



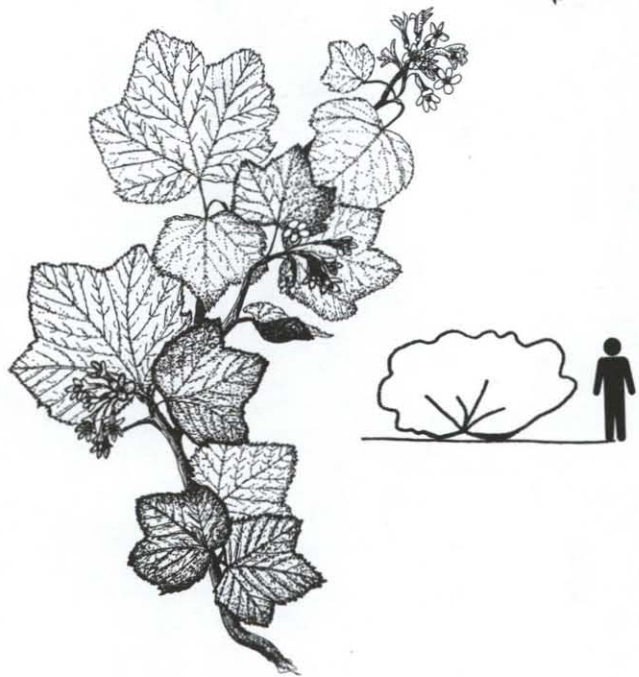
Cranberry, Highbush (*Viburnum opulus*) goes by many common names including bush cranberry and cranberry tree, although it is unrelated to cranberries. It is a very attractive, 8 to 12 foot tall shrub which is hardy throughout Idaho. Sources differ on whether it is actually native to Idaho or not, but either way, it is a useful, non-invasive and beautiful shrub! Showy, white flowers in early summer give way to clusters of red berries that persist into winter. Highbush cranberry can be very colorful in the fall with leaves turning yellow-red or reddish-purple. It is easy to grow, withstands many soil types, and is adaptable to pH ranges of 5 through 8. This shrub prefers full sun and tolerates soils with high calcium deposits, but does not like soils high in salt. The berries, high in vitamin C, can be boiled, strained, and made into jam and jelly. Native Americans used the bark to relieve muscle spasms, hence the common name 'cramp bark.' We recommend this plant for hedges, landscapes, bird habitat, and for the outer row of a windbreak. **Wildlife benefit:** This dense plant provides hiding and nesting places for many species of birds. Cedar waxwings, robins, and other birds eat the berries.

Currant, Golden (*Ribes aureum*) is an Idaho native shrub. This deciduous plant has many desirable characteristics: attractive form, height growth of 8 to 15 feet, yellow flowers very early in spring, edible fruits, no spines, drought tolerant, works well as a natural hedge, good wildlife browse, and is excellent for soil stabilization. This plant would look good in a yard or would be a valuable addition to outer rows of multiple-row windbreaks. Grows best with moderate summer watering.

Wildlife benefit: Provides good cover for upland game birds and the edible fruits are eaten by an assortment of songbirds and small animals. Also browsed by big game.



Currant, Red-flowering (*Ribes sanguineum*) bears pendulous, red flower clusters on 6 to 8 foot shrubs in spring, followed by blue to black berries in fall that are unpalatable to humans. It is most commonly found west of the Cascade and Sierra Nevada mountains, but a few isolated clumps are found in northern Idaho, so we can claim it as a native! Some think this shrub is the most striking of the flowering currants and consider it the best ornamental of the *Ribes* genus. The leaves are maple-like and turn yellow in autumn. This shrub prefers dry to moist, well-drained sites in full sun to partial shade. It would be an excellent choice as a landscape plant, soil stabilizer, natural hedge, or in the outer row of multiple-row windbreaks. **Wildlife benefit:** Provides cover for upland game birds and small mammals. Fruit is eaten by a variety of songbirds and small mammals.

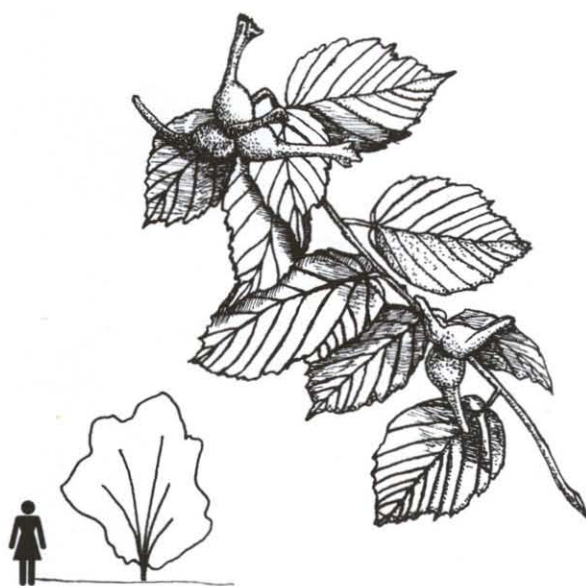


Dogwood, Redosier and Yellowtwig (*Cornus sericea* and *C. sericea* 'Flaviramea'). Redosier dogwood is a very common Idaho native, deciduous shrub that grows 6 to 15 feet tall. It thrives in our coldest areas. Osiers were the thin, supple branches used to weave baskets in Europe, so red osier refers to the bright red twigs that set this shrub apart from many others. This dogwood, unlike domestic dogwoods which have large, single flowers, bears clusters of small, white flowers in spring. The foliage is brilliant red in fall. Redosier dogwood prefers moist, rich soils in either sun or shade. Our seed source is northern Idaho. Yellowtwig dogwood is a cultivar of this species, selected for its yellow stems. **Wildlife benefit:** Small whitish berries are eaten by a variety of birds and small animals, and the multi-stem growth habit provides ideal nesting sites for birds.





Hawthorn, Black (*Crataegus douglasii* var. *douglasii*), or Douglas hawthorn, is a slow-growing large shrub or small tree reaching 20 feet at maturity. This western Idaho native forms dense, thorny thickets that provide excellent soil and streambank stabilization, as well as cover and nesting sites for magpies and thrushes. We think this species would also do well in the outer rows of multiple-row windbreaks. Our seed is collected in northern Idaho. **Wildlife benefit:** Black hawthorn is browsed heavily by big game when young, but much less as the plant ages and grows larger. The black lustrous fruit provides food for grouse, songbirds, and other small animals. This shrub is one of the most important wildlife shrubs on the Palouse.

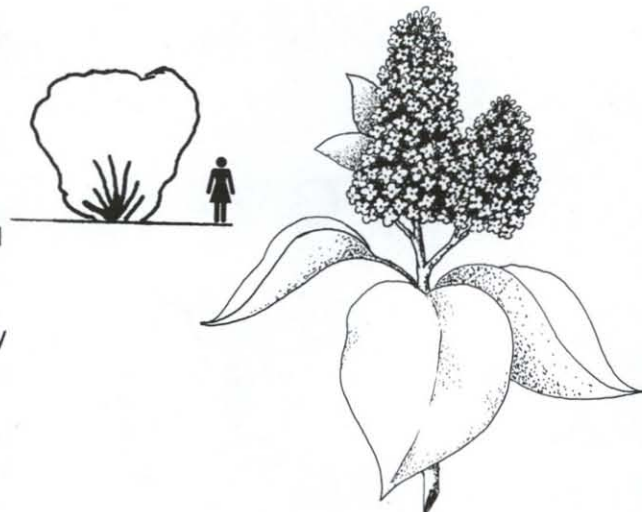


Hazelnut, Beaked (*Corylus cornuta*) is a large shrub native from British Columbia to N. California. In Idaho it is found in the river valleys of the northern part of the state. It grows moderately fast to a mature height of 8 to 12 feet and is found in open forests, clearings and along streams. This hazelnut requires a moist but well-drained soil and will tolerate shade and moderately calcareous soils (limestone-derived soils). It will not tolerate saline or high pH soils. The nuts, also called filberts, are enclosed in tubular green husks which project beyond the nut forming a beak, hence its common name 'beaked hazelnut.' They taste sweet and are commonly collected. The slender young twigs were used to make baskets by Native Americans. Our seed source is from northern Idaho. **Wildlife benefit:** The nuts are a staple food of the Stellar Jay, chickadees, chipmunks, and squirrels. *Very limited quantities - call for availability*



Kinnikinnick (*Arctostaphylos uva-ursi*), also known as bearberry, is a beautiful, spreading, evergreen ground cover. The whitish-pink, bell-shaped flowers are followed in fall by red berries that persist into winter, making the branches useful for fall and Christmas decorating. This common Idaho native has a moderate growth rate, likes the sun, and is excellent for erosion control since it does well on a variety of sites ranging from moist to dry. **Wildlife benefit:** The fruits are eaten by songbirds, gamebirds, including grouse and turkeys, deer, elk, and small mammals. Hummingbirds have been known to take nectar from the flowers.

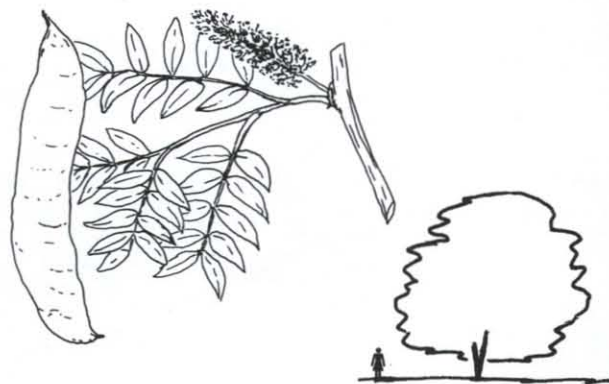
Lilac, Common Purple (*Syringa vulgaris*) has a moderate growth rate and reaches 10 to 15 feet in height. Its dense growth and adaptability to a wide range of environments make it an excellent choice for outer rows of windbreaks. Their large, fragrant blossoms add aesthetic value in spring. Lilacs do well on alkaline soils, are highly resistant to drought and cold and are very long lived. This is not a relative of Lewis syringa, Idaho's state flower (see pg 30). **Wildlife benefit:** Lilac provides cover and nesting sites for many species of birds.



Locust, Black (*Robinia pseudoacacia*) is a rapidly growing tree adapted to a wide range of soils. It does well in hot, dry areas and is very drought tolerant. Black locust's wide-spreading root system is useful in controlling erosion. The roots have nitrogen-fixing nodules that actually release nitrogen into the soil. This "fertilizing" characteristic is very beneficial on disturbed or sterile soils. Nitrogen released into the soil may stimulate growth of neighboring plants in multiple-row plantings. Black locust is a long-lived tree that, at maturity, will be 40 to 75 feet tall. This tree grows best in center portions of windbreaks. Black locust is very dense wood and is rot resistant, making it excellent for fence posts or firewood. It also has extremely fragrant flowers, and is a great friend of bee-keepers! The honey that is produced is some of the finest! It is also important to note, though, that the young leaves, inner bark, and seeds are toxic to humans. Wood borers are killing this tree in some areas of southern Idaho; check with your county agent to see if borers are a problem in your area. **Wildlife benefit:** Good roosting and nesting tree for hawks and owls. Bees actively visit the white flowers in spring.



Locust, Honey- (*Gleditsia triacanthos - inermis*) will grow under a variety of moisture and soil conditions and does well on hot, dry sites. Honeylocust does not add nitrogen to the soil as so many legumes do. We recommend it for center portions of multi-row windbreaks. It's hardy up to 5000 feet in southern Idaho and 3500 feet in northern counties. Honeylocust is a popular ornamental due to its wide-spreading crown and relative freedom from insect and disease problems. The strain *inermis* does not produce the 2- to 14-inch long thorns found on other varieties of honeylocust. **Wildlife benefit:** Good roosting and nesting tree for hawks and owls.



September 2004 to June 2005

Seedling Order Form

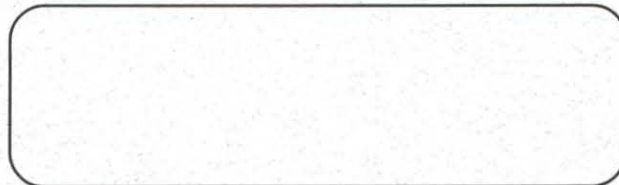
Please remove this center section and fill it out completely. Keep this first page for your records and return the following page with your check or money order to:

***UI Seedlings
College of Natural Resources
PO Box 441137
Moscow, ID 83844-1137***

**Questions? Call (208) 885-3888 or E-mail seedlings@uidaho.edu
Visit us on the web! <http://seedlings.uidaho.com>**



University Of Idaho Seedlings
College of Natural Resources
PO Box 441137
Moscow, ID 83844-1137



You get what you pay for ... dormant, cold-hardy seedlings with the ability to grow new roots, conveniently delivered to your doorstep just in time for planting.

Customer Record

****Please retain this for your records****

Selected shipping* or pickup date _____
Seedlings purchased:

**Remember, this is the day we ship, your trees will arrive a few days later!*

Quantity	Species	Quantity	Species
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

****Your cancelled check is your seedling order confirmation.****
Please call if you need further confirmation of your order.

****No refunds for orders cancelled after March 1, 2005.****
All cancelled orders are subject to a 20% restocking charge.

Remember...

Your pickup or delivery date can be changed with just a phone call or email. We realize unexpected things can happen and the date you select on your order form may not always work out. You may also find that more than one pickup or delivery date is necessary. Please call us at (208) 885-3888 or email seedlings@uidaho.edu. We are here to help you in any way we can!

Check Out What's New for This Year!



Mountain boxwood (*Pachistima myrsinites*), also known as Mountain lover or Oregon boxwood, is an Idaho native, evergreen shrub rarely growing over 3 feet tall. It is densely branched with many small, dark green, glossy leaves. This feature has made it popular as greenery in the florist industry. It grows on dry to moist sites in shaded and open mountain areas, and tolerates frost pockets well. It also is not too picky about the soil and can grow in well drained, shallow, gravelly soils as well as in clay and silt-loams. Mountain boxwood can be shaped easily and makes a great landscape plant, groundcover, or small hedge. We also recommend it for revegetating disturbed sites. **Wildlife benefit:** The leaves and branches of Mountain boxwood provide important forage for deer, elk, moose, big-horned sheep and grouse.

*Tree & shrub seedlings make great gifts –
Ask us about gift certificates!*

Please Provide:

Name _____ Date _____

Mailing Address _____
 Street or PO Box _____ City _____ State _____ Zip _____

Shipping Address _____
 (If different from above) Street _____ City _____ State _____ Zip _____

E-mail address _____ Telephone (day) _____

Orders that are picked up:

DO NOT SHIP. Your seedlings may be picked up at the nursery between 8:00 a.m. and 3:30 p.m., Monday through Friday of the delivery week you select below. See map on page 1 for directions.

Orders that are shipped:

Seedlings will be sent on Monday or Tuesday of the week you circle below. You can expect delivery by Friday of the week selected. Your delivery date may be changed with just a phone call or email. The nursery is not responsible for undeliverable packages or delivery delays.

Pickup or shipping date selection:

Circle a pickup or delivery week and **MARK THIS WEEK ON YOUR CUSTOMER RECORD AND ON YOUR CALENDAR!** This is the week your order will be ready for pickup or will be shipped. Late orders may be shipped the delivery week following the one you select.

February 22	March 7	April 4	May 2
February 28	March 14	April 11	May 9
	March 21	April 18	May 16
	March 28	April 25	May 23
			May 31

**Remember to order early!
 Orders are accepted on a first-received-with-payment, first-reserved basis. For assistance with species selection or availability, call (208) 885-3888 or E-mail seedlings@uidaho.edu.**

Please indicate substitutions when you send in an order! We sell out of some species very quickly and cannot always send your first choice. You may call us or check our website for availability at <http://seedlings.uidaho.com>

Do you want next year's order form? yes no catalog? yes no

Regarding substitutions:

- I have listed plants on the back of this form that may be substituted for my first choices.
- I have not listed substitutions - Please refund if my first choices are unavailable.
- Please contact me for substitutions if my first choices are unavailable.

Payment:

Subtotal from Back

Shipments to, or pickups in, Idaho must add 6% sales tax or give tax exempt number

Shipping and handling cost: orders to ID, WA, Northwest MT will be shipped Ground. All other orders must be shipped 3rd Day Select.

If your order is:	send		If your order is:	send	
	Ground	3rd Day Sel.		Ground	3rd Day Sel.
\$0 - \$100	\$10	\$18	\$301 - \$400	\$30	\$58
\$101 - \$200	\$16	\$30	\$401 - \$500	\$35	\$70
\$201 - \$300	\$24	\$44	\$500+	please call for quote	

Total - Make your check or money order payable to:

Seedlings - UNIVERSITY OF IDAHO. Do not send cash.

Mail your check and order form to: UI SEEDLINGS, College of Natural Resources, PO Box 441137, Moscow, ID 83844-1137.

SuperStock Hardwoods

Quantity (multiples of 5 only) \$1.75 per seedling

_____ Alder, sitka _____ Alder, thinleaf _____ Apple, common wild _____ Ash, green _____ Ash, native mtn- _____ Aspen, quaking _____ Birch, paper _____ Birch, water _____ Bitterbrush, antelope _____ Boxwood, mtn _____ Cascara _____ Cherry, black _____ Cherry, choke- _____ Cherry, dwarf sand _____ Cherry, Nanking	_____ Cherry, western sand _____ Chestnut, American _____ Cinquefoil, shrubby _____ Cranberry, highbush _____ Currant, golden _____ Currant, red-flowering _____ Dogwood, redosier _____ Dogwood, yellowtwig _____ Hawthorn, black _____ Kinnikinnick _____ Lilac, common purple _____ Locust, black _____ Locust, honey- _____ Maple, Rocky mtn _____ Maple, sugar	_____ Ninebark, mallow _____ Oak, bur _____ Oak, bur-english _____ Oak, bur-gambel _____ Oak, English _____ Oak, Gambel _____ Ocean-spray _____ Peashrub, Siberian _____ Plum, American _____ Poplar, Idaho hybrid _____ Rose, rugosa _____ Rose, Woods _____ Serviceberry _____ Snowberry _____ Spirea, Douglas	_____ Spirea, mountain _____ Sumac, oakleaf _____ Syringa, Lewis _____ Twinberry, black _____ Walnut, black _____ Walnut, Carpathian _____ Willow, Arctic blue _____ Willow, coyote _____ Willow, Drummond _____ Willow, golden _____ Willow, laurel _____ Willow, Mackenzie
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X \$1.75 = _____

TOTAL ORDERED	TOTAL COST
----------------------	-------------------

SuperStock Conifers

Quantity (multiples of 5 only) \$1.75 per seedling

_____ Cedar, incense _____ Cedar, Western red- _____ Fir, Canaan _____ Fir, Rocky mtn concolor _____ Fir, Rocky mtn Douglas- _____ Fir, fraser _____ Fir, grand _____ Juniper, Rocky mtn	_____ Larch, Western _____ Pine, Austrian _____ Pine, ponderosa _____ Pine, Scotch _____ Pine, Western white _____ Spruce, blue _____ Spruce, Engelmann _____ Spruce, Norway
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X \$1.75 = _____

TOTAL ORDERED **TOTAL COST**

Conifers

Quantity (multiples of 20 only)	Cost per Seedling 20 - 480	500+ of the same species	Cost
_____ Fir, Douglas-	.40	.28	_____
_____ Larch, Western	.40	.28	_____
_____ Pine, lodgepole	.40	.28	_____
_____ Pine, ponderosa	.40	.28	_____
_____ Pine, Western white	.40	.28	_____
_____ Spruce, blue	.40	.28	_____

X \$1.75 = _____

TOTAL ORDERED	TOTAL COST \$ _____
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Substitutions: _____ No Substitutions

Special Packages

Quantity	Cost per Package	Cost
_____ State of Idaho	30.00	_____
_____ Wildlife Lover's	75.00	_____
_____ Mini Wildlife Lover's	40.00	_____
_____ Riparian	75.00	_____
_____ Lewis & Clark	25.00	_____

X \$1.75 = _____

TOTAL ORDERED	TOTAL COST \$ _____
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Also available in very limited supply - please contact us before ordering:

Bristlecone pine
California red fir
Shagbark hickory
Mtn hazelnut

Specialty SuperStocks

These are 2 year old seedlings

Quantity (multiples of 5 only) \$2.50 per seedling

_____ European Silver Fir	_____ Trojan Fir
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X \$2.50 = _____

TOTAL ORDERED **TOTAL COST**

Substitutions

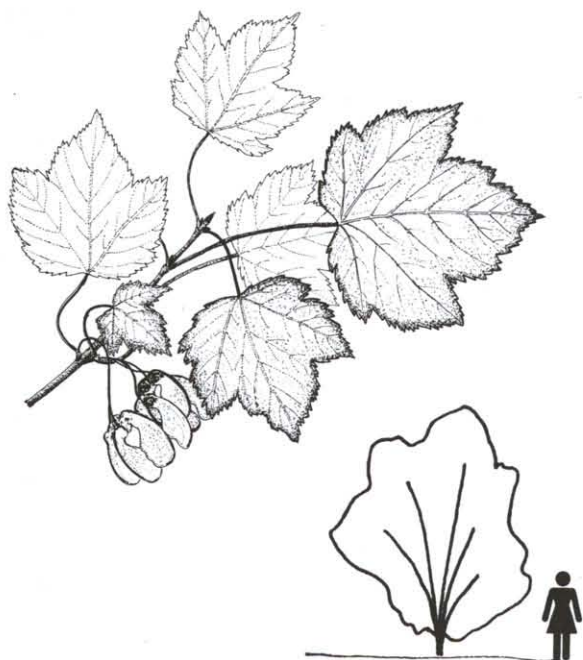
Total Order Here



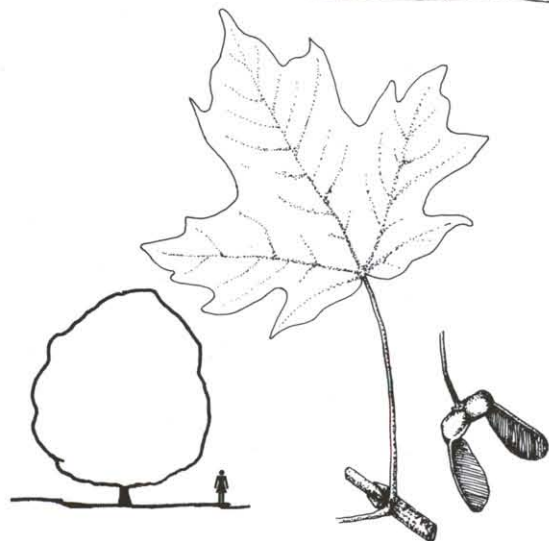
Total SuperStock Hardwood Cost	
Total SuperStock Conifer Cost	
Total Conifer Cost	
Total Special Package Cost	
Total Specialty SuperStock Cost	
Subtotal	
(Copy amount to front side of orderform)	



Maple, Bigtooth or Canyon (*Acer grandidentatum*), native to southern Idaho, is closely related to the sugar maple, though it is a smaller tree with smaller leaves. It is chiefly found on mountain terrain, either in canyons or on north or east slopes. In southeastern Idaho, the bigtooth maple often grows with concolor fir, douglas-fir and subalpine fir. This versatile maple grows well in a wide range of sites and soil types in both dry and moist locations. It has a medium growth rate, and can reach heights of 30 to 50 feet in a moist site, and up to 20 feet in a dry area. We recommend it for revegetation of disturbed riparian sites, wildlife cover or roadside stabilization. Spectacular fall colors make it a nice choice for landscaping. **Wildlife benefit:** Maple groves provide cover for mule deer and are a good source of food for moose. The seeds, buds and flowers provide food for various species of birds and small mammals including squirrels and chipmunks. *Not available this year*

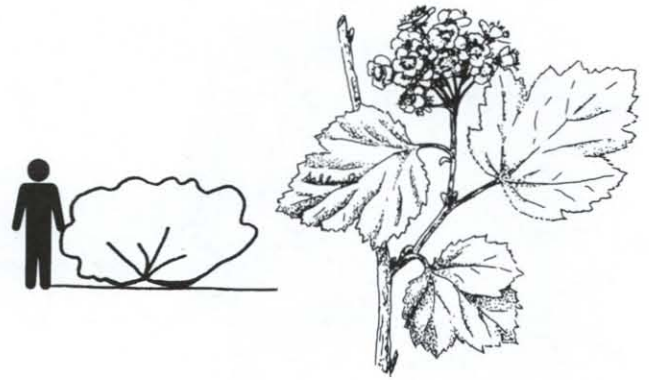


Maple, Rocky Mountain or Douglas (*Acer glabrum* var. *douglasii*) is a long lived, multiple-stemmed, shade tolerant shrub or small tree. This northern Idaho native usually grows from 4 to 15 feet, but it may reach heights of 20 to 40 feet. It favors moist-wet sites and does well on north exposures. In arid areas it is found in the mountains and moist canyons. Rocky Mountain maple prefers a well-drained, acidic-neutral soil comprised of silt, sand, gravel, or rock. Fall color is beautiful — yellow and orange. Our seed source comes from northern Idaho. **Wildlife benefit:** This maple is a very important winter food for big game — moose, elk, mule deer, and white-tailed deer. Seeds and buds are also eaten by squirrels, chipmunks, and grouse while flowers provide food for numerous birds and mammals.



Maple, Sugar (*Acer saccharum*) is a large deciduous tree native to the northeastern U.S. A source of maple sugar, it grows moderately fast to about 60 to 70 feet or more. Good fall color of yellows, oranges, and reds. Plant where it has access to plenty of water — deep watering and periodic fertilizing will help keep roots down below the soil surface.

Ninebark, Mallow or Common (*Physocarpus malvaceus*) is a common, hardy Idaho native shrub with rounded clusters of white flowers and peeling bark. It can reach 7 feet at maturity, forming dense thickets that provide good cover for many animals from small birds to large mammals. The thick growth also makes it a good choice for the outer rows of multiple-row windbreaks. This drought tolerant shrub provides brownish-red fall color.

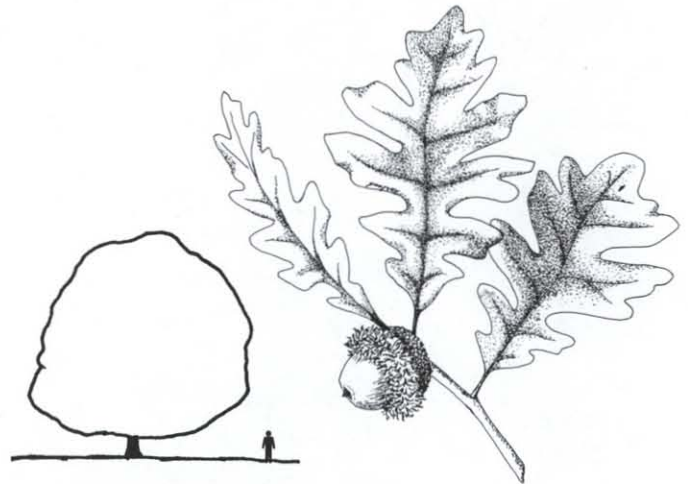


Oak, Bur (*Quercus macrocarpa*), lovely, rugged and tolerant of adverse conditions, ranges westward into the Great Plains and eastern Montana. It will grow about 60 to 75 feet tall with a 30-foot spread. Its leaves are large (8 to 10 inches) with deep lobes. We grow seedlings from acorns collected near Filer, Idaho. Like other oaks, it should be watered during the first 2 to 3 dry seasons. **Wildlife benefit:** Squirrels, chipmunks, deer, birds, and turkeys eat the acorns.

We also have two Bur oak hybrids available that are hardy, vigorous, fast growing, heavy acorn-producing oaks that show the best qualities of their parent trees.

Oak, Bur-English (*Quercus macrocarpa x robur*).

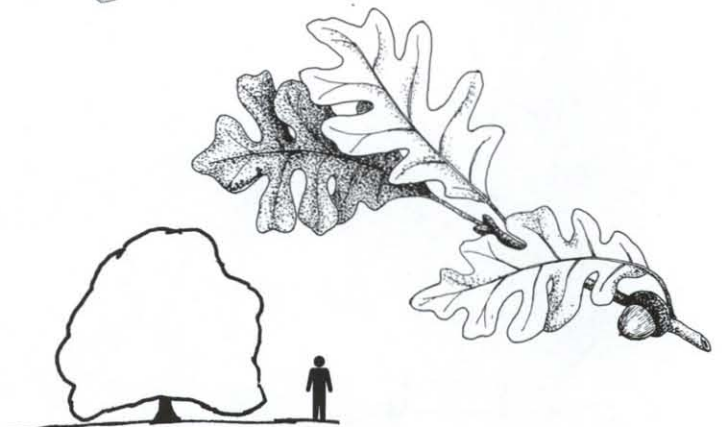
Oak, Bur-Gambel (*Quercus macrocarpa x gambellii*)



Oak, English (*Quercus robur*) grows, in a moderately short period of time, into a wide-spreading tree with a short trunk. It may grow as tall as 75 to 90 feet and has leaves with rounded lobes that persist into late fall. It's suited only for areas along the Snake and Clearwater rivers, Moscow vicinity, and the valleys from Coeur d'Alene north to Bonners Ferry (USDA Hardiness zones 5 or 6). This oak withstands drought but should be watered during the first 2 to 3 dry seasons. **Wildlife benefit:** Squirrels, chipmunks, deer, birds, and turkeys eat the acorns.

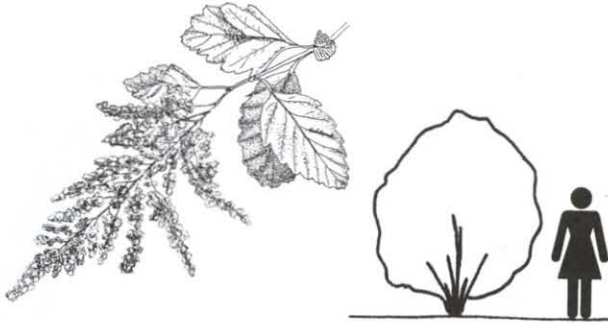


Oak, Gambel (*Quercus gambellii*) is native to the central Rocky Mountains, almost to southeastern Idaho. Grows slowly to 15 to 30 feet. The multi-stemmed trunk is usually light-gray to whitish and leaves are light green before turning yellow, orange, or red in fall. Tolerates most soil conditions and once established is very drought tolerant. **Wildlife benefit:** Acorns are eaten by deer, squirrels, bears, and turkeys.



How to Get Your Oaks to Grow Faster

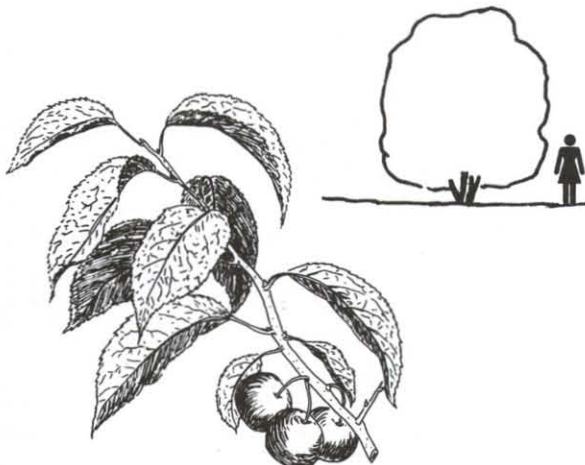
According to the *Sunset Western Garden Book* published by Lane Publishing Company of Menlo Park, California, oaks planted in your yard should grow vigorously (1½ to 4 feet per year). The authors go on to say, "By nature, many young oaks grow twiggy. Growth is divided among so many twigs that none elongates fast. To promote faster vertical growth, pinch off the tips of unwanted small branches, meanwhile retaining all leaf



Ocean-spray (*Holodiscus discolor*) is an erect, usually multi-stemmed shrub that grows 5 to 20 feet tall. In late June and into July, when you see the tiny, cream-colored flowers packed into a large, dense, drooping plume at the end of each branch, you'll know why it's called ocean-spray and is considered one of our most beautiful native shrubs. It can be used in the exterior rows of multiple-row windbreaks or as a landscape plant. Faded flowers persist into winter, giving the plant a shaggy appearance. American Indians ate the seeds and used the long, straight branches for making arrow shafts. **Wildlife benefit:** Dense stands provide visual and thermal cover for deer and elk as well as supply nesting habitat, cover and food for a variety of nongame birds and animals.

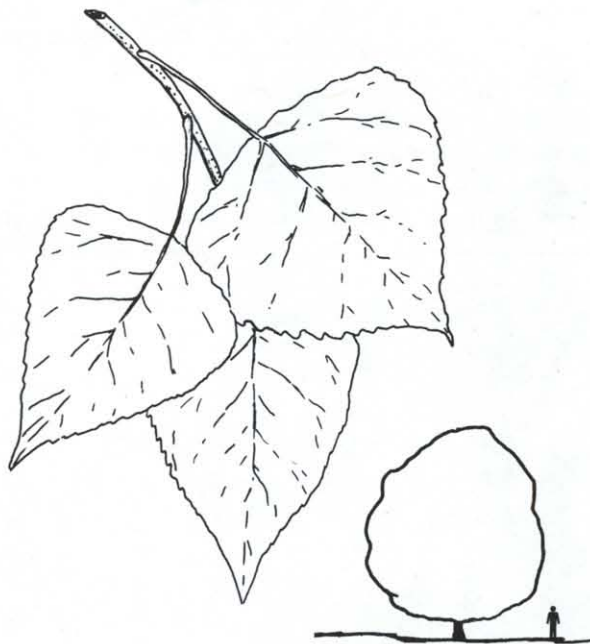


Peashrub, Siberian (*Caragana arborescens*) is a dense shrub with multiple branches and thick foliage. It will reach mature heights of 12 to 15 feet in 5 to 7 years on irrigated land, 10 to 12 years on dryland. It is ideal for planting in outer rows of windbreaks, or for single-row hedges as it can be trimmed easily. Its foliage extends to the ground making it a good snow and sound barrier. Siberian pea is probably the most frost/drought/alkaline-soil resistant shrub suited to Idaho growing conditions. **Wildlife benefit:** The yellow, pea-like flowers are a favorite of hummingbirds. Birds, including pheasant, quail, juncos, and chukars, eat the "peas" that form later.



Plum, American (*Prunus americana*), a large shrub or small tree (20 to 30 feet tall), is best adapted to moist soils. It has rapid growth with wide-spreading branches and grows well in outer rows of multiple-row windbreaks. This plum flowers profusely in late spring, making it an attractive addition to any planting. Plums can be used to make jams, jellies, and pies. **Wildlife benefit:** Its dense growth provides cover and nesting sites for many species of birds. Bears and songbirds, including robins, woodpeckers, grosbeaks, finches and waxwings, eat the fruits.

Poplar, Idaho Hybrid (*Populus* sp.) grows rapidly, as much as 6 to 10 feet a year under irrigated conditions. Discovered approximately 40 years ago, this variety is especially well adapted to the climate, soil, and growing conditions encountered in Idaho. If properly cultivated, this hybrid will offer quick wind protection or screening. In 5 to 7 years this tree will be large enough to harvest as firewood. Hybrid poplar wood burns more quickly than many conventional firewood sources. The two most important aspects of planting poplars are: 1) the soil; and 2) weed control. Poplars grow best on well-drained soils with high water and nutrient availability. They will grow on just about any type of soil, but as available water and nutrient levels decrease, or drainage becomes limited, growth is reduced. Controlling weeds in your plantation allows all the available nutrients and moisture to be used by the trees, thus improving their growth. **Wildlife benefit:** Good roosting and nesting tree for hawks and owls, and nesting by many species of birds.



Rose, Rugosa (*Rosa rugosa*), from Europe and central Asia, is an extremely hardy rose, withstanding hard freezes, wind, and drought, while still showing off good fall color. This rose grows 4 to 6 feet tall, making it good for single-row hedges or exterior rows of multiple-row windbreaks. Deep purple to pink to white flowers, up to 3 inches in diameter, give way to large red fruits (hips). They may flower the same year planted! **Wildlife benefit:** Birds, chipmunks, and deer eat the hips. Deer and elk will also browse the foliage.



According to Jean Gordon, author of *The Art of Cooking with Roses* (The Noonday Press, a division of Farrar, Straus and Giroux, New York), "There are innumerable recipes for rose sauces, jellies and marmalade. Sauce Saracen is made of rose hips and almonds pounded together and cooked in wine sweetened to taste. A tart marmalade for deer and venison is favored by French chefs, while the English use a seasoning for these same dishes by soaking dried rose hips, then mashing and blending them with salt, pepper and marjoram. Rose wine or rose hips added to gravies in the cooking of rabbit and other small game provide a delicate flavor which often disguises the objectionable 'gamey' taste." Here's one recipe that will tempt your taste buds!

ROSE HIP JAM

2 pounds rose hips and seeds
4 tart apples

2½ pounds sugar
1/3 cup lemon juice

Boil rose hips and seeds in 2 pints of water and cook until tender. Rub through a fine sieve, making a puree. Peel and core the apples, and cook in very little water until tender. Rub through a sieve. Combine rose hip puree with the apple puree, the sugar and lemon juice. Boil 15 minutes after reaching the boiling stage. Put in sterilized jars and seal. **Reprinted by permission of Walker & Co., all rights reserved.**



Rose, Woods (*Rosa woodsii*), an Idaho native shrub, grows in a wide range of soil types and textures, although it favors moist, well-drained soils. It flourishes in moderate shade to full sun and tolerates high pH and limestone-derived soils. This hardy, drought tolerant, 2 to 6 foot high shrub spreads by rhizomes, making it an effective tool in revegetating sites along streambanks and road cuts. The 2-inch pink flowers are followed by rose hips that provide vitamin C and can be dried and used in teas, jellies, fruitcakes, and puddings. Our seed source is northern Idaho. **Wildlife benefit:** Dense thickets are used for nesting and cover by many birds and small mammals. Rose hips sustain many birds and mammals such as mule deer, squirrels, and sometimes coyotes and bears when the ground is covered with snow.



Serviceberry (*Amelanchier alnifolia*) is an Idaho native called many things: Juneberry, shadblow, serviceberry, sarvisberry, Saskatoon, Saskatoon serviceberry, amelanchier. Serviceberry is a deciduous shrub or small tree, growing to about 20 feet. In early spring, it has drooping white or pinkish flowers that fade rapidly, replaced with purple, edible fruits. New foliage is purplish — fall color is red. Plants are extremely cold-hardy and drought resistant once established and ideal for exterior rows of multiple-row windbreaks. **Wildlife benefit:** The fruits are prized by birds — often eaten by grosbeaks and orioles before they even have a chance to ripen! Fruits are also eaten by bears and chipmunks and foliage is browsed by deer, moose, and elk.



Snowberry (*Symphoricarpos albus*) is a common Idaho native shrub that grows in a wide variety of soil types and environmental conditions. It produces white berries in the fall and usually grows 3 to 4 feet high but can reach 6 feet in riparian areas. Snowberry spreads by underground rhizomes, forming a dense thicket. This characteristic makes it a great plant for bank and soil stabilization and erosion control. It is classified as a "survivor" due to its resistance to fire. After a fire has killed the top, it sends sprouts up from its rhizomes. **Wildlife benefit:** Bighorn sheep and white-tailed deer browse the branches. Snowberry provides cover and food for sharp-tailed, ruffed, and blue grouse, wild turkey, kingbird, western flycatcher and western bluebird.

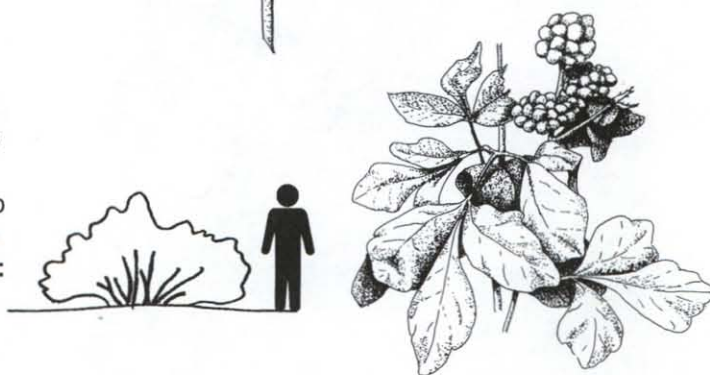
Spirea, Douglas (*Spiraea douglasii* var. *menziesii*) is a spreading deciduous shrub growing 3 to 6 feet tall with beautiful pinkish-purple flower plumes in mid-July. This Idaho native grows best on moist to semiwet soils with good drainage, but will tolerate water-logged soils and widely fluctuating water tables. Douglas spirea form dense colonies which make it ideal for riparian revegetation programs. Our seed is collected from northern Idaho. **Wildlife benefit:** Douglas spirea provides excellent cover for birds and small animals.



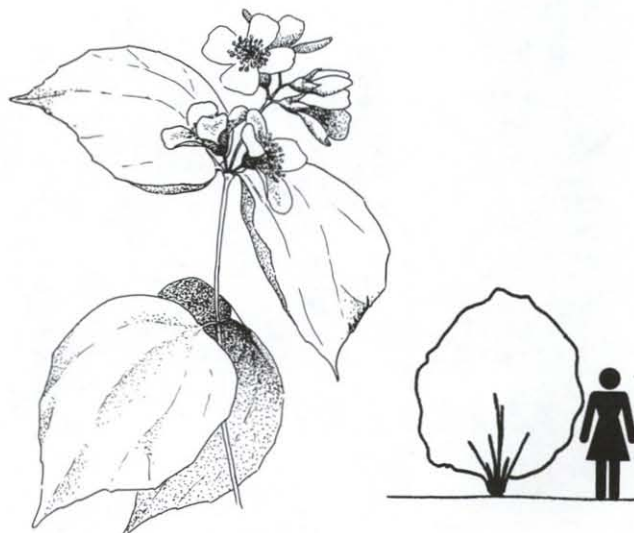
Spirea, Mountain (*Spiraea densiflora*) is an Idaho native shrub forming compact mounds 2 to 4 feet tall and spreading by rhizomes. It is found along streams and lakes or in moist soils on wooded to open rocky slopes in full sun above 4000 feet. The beautiful, rounded-top, rose-colored flower clusters that bloom from June to August make it a nice addition to any landscape. Mountain spirea is a very versatile plant that can be used in many situations from streambank stabilization and revegetation to wildlife plantings and home landscaping projects. **Wildlife benefit:** The seeds that form are an important source of food for many species of wildlife.



Sumac, Oakleaf (*Rhus trilobata*), also called skunkbush sumac, is very drought tolerant and native in southern Idaho. Growing 3 to 6 feet tall, it forms clumps and is suited to the outer rows of multiple-row windbreaks. The deep green summer foliage changes to bronzy red in fall, and clusters of red fruit develop in late summer. It prefers a well-drained soil. **Wildlife benefit:** The shrubby growth provides cover for upland game birds, and small animals and songbirds eat the fruits.



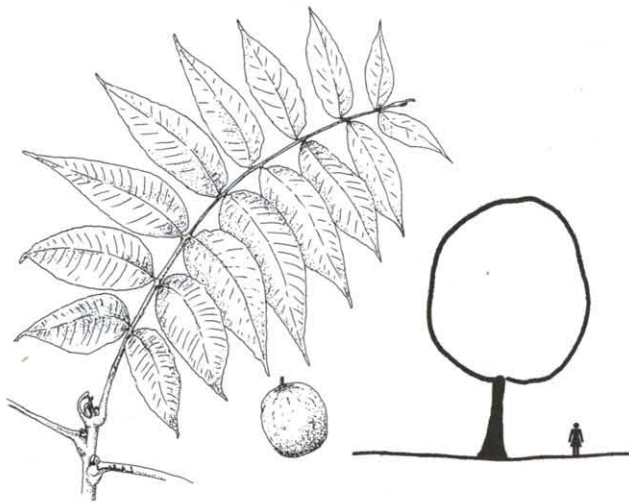
Syringa, Lewis or Mockorange (*Philadelphus lewisii*), a widespread Idaho native and the state flower, grows 6 to 20 feet tall. It is not to be confused with *Syringa vulgaris*, our common lilac (pg 24). This beautiful shrub is named after Captain Meriwether Lewis who first discovered it along the Clearwater River in 1806. In early summer, delicate and fragrant white flowers appear, making it an attractive addition to any landscape. Western syringa is very drought tolerant, often growing on rocky hillsides and in cracks in basalt fields. It could probably be used in outer rows of multiple-row windbreaks. **Wildlife benefit:** Chipmunks and birds eat the seeds.





Twinberry, Black (*Lonicera involucrata*) is one of four species of Idaho's native honeysuckles, growing to a height of 10 feet. It is erect and prefers moist to wet soils in open forests, meadows and lake shores. This shrub is ideal for riparian revegetation programs and will thrive from lowlands to high elevations. Black twinberry has two yellow tubular flowers which are followed by clusters of 2 black berries surrounded by red bracts, hence the name "twinberry." Our seed is collected in northern Idaho.

Wildlife benefit: The berries are eaten by a variety of songbirds.



Walnut, Black (*Juglans nigra*), from the eastern U.S. forests, has one of the most valued woods in the country. It's used in cabinet making, gunstocks, and furniture. There is a tremendous call for walnut veneer. This tree is medium to fast growing with a single, long smooth trunk, reaching 50 to 75 feet in height, although it can get as high as 150 feet under optimum conditions. It does well in the interior rows of multiple-row windbreaks. Black walnut prefers deep, well-drained neutral soils but will tolerate drier sites. The walnuts are used as food by humans and harvested commercially. Nut production may be increased by interplanting with alder, since alders will increase the available nitrogen in the soil. Black walnut leaves contain a toxic compound which is injurious to nearby crops such as tomatoes, potatoes, apples and blackberries. Our seed comes from a Purdue #1 black walnut plantation in north central Idaho.

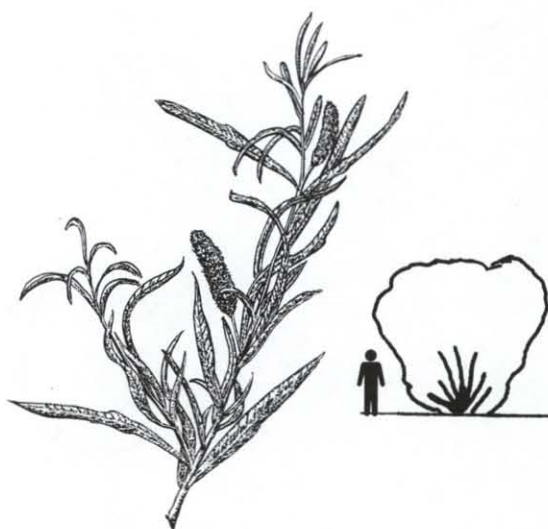


Walnut, Carpathian (*Juglans regia* - carpathian) is a cold hardy strain of the Persian or English walnut that originally came from the Carpathian Mountains in Poland. This tree is known for its outstanding nut qualities and fine wood and aesthetic characteristics. For optimum growth, this tree requires a fertile, well-drained loam soil with pH 6 to 8. It is intolerant of flooding and soils high in salt. Carpathian walnut grows 40 to 60 feet tall with comparable or greater spread and bears heavy nut crops after 8 to 10 years. The wood lacks the dark color of black walnut, but is of excellent quality and is used in making furniture and gunstocks. Our seed comes from a plantation in upstate New York (zone 4).

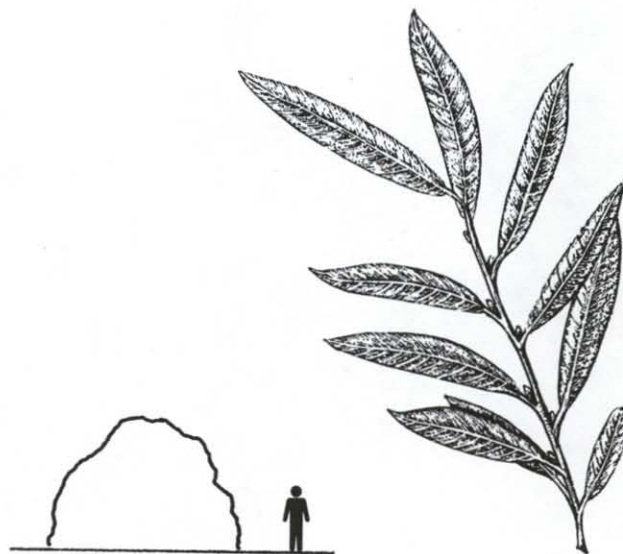
Willow, Arctic Blue (*Salix purpurea*) grows into a very dense mound, making it a superb living snow fence. It's also ideal for planting as a single-row windbreak or in exterior rows of multiple-row windbreaks. Arctic blue willow has a moderate growth rate, prefers moist soils, and reaches a mature height of 10 to 15 feet. **Wildlife benefit:** This dense plant is a fine source of cover for rabbits and birds. In Moscow, the pheasant, quail, and partridge roost and scratch under them during winter.



Willow, Coyote (*Salix exigua*) is an Idaho native shrub that is probably found in every county in the state. It can reach 22 feet at maturity and spreads by underground roots, forming colonies. It grows in moist sands and gravel and requires a minimum of 20 to 25 inches annual precipitation if not on a perennial stream. This willow is used in conservation plantings for streambank stabilization, riparian site restoration, and wildlife habitat. We grow the USDA NRCS release 'Silvar' from eastern Washington.

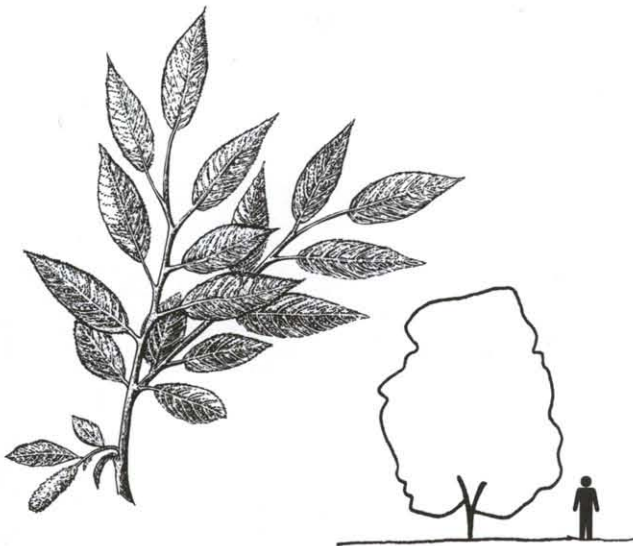


Willow, Drummond (*Salix drummondiana*) is an Idaho native shrub reaching 9 feet at maturity with a canopy width of 15 feet. It's commonly found in montane portions of Idaho, especially on steep, stony-lined streams. This willow has yellow to yellow-orange stems making it a striking ornamental. The leaves are green on top with a silvery velvet underside. It grows in moist sands and gravel and requires a minimum of 20 to 25 inches annual precipitation if not on a perennial stream. Drummond willow is recommended for erosion control, riparian site restoration and wildlife habitat. Willow pollen is an important food source in the spring for honeybees. We grow the USDA NRCS release 'Curlew' from eastern Washington.





Willow, Golden (*Salix alba* var. *vitellina*) is a medium-sized, fast-growing tree from Europe that attains heights of 40 to 50 feet at maturity. This willow grows well on the Palouse and on moist sites but has a wide adaptability to soil and moisture conditions. It should be watered if used in dryland plantings. It may be used for single-row plantings or for central portions of multiple-row windbreaks. Golden willow has bright yellow foliage in fall and reddish-orange bark in winter.
Wildlife benefit: Perching sites for hawks and owls.



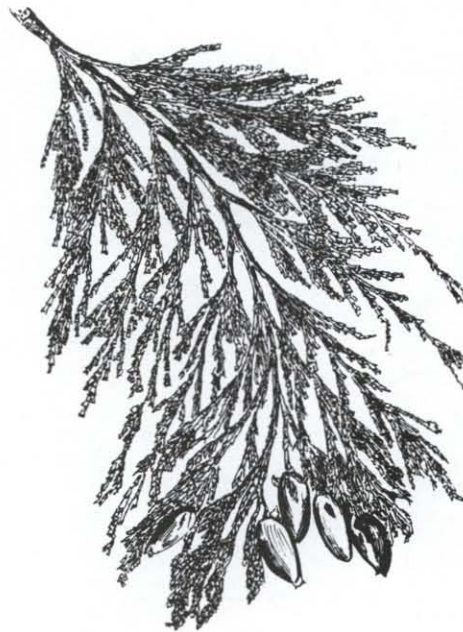
Willow, Laurel (*Salix pentandra*), also referred to as bay willow, comes by its name because of the similarity of its leaf to that of the bay laurel tree. It's a small to medium tree (20 to 40 feet) with a dense round top and lustrous dark green leaves. This is perhaps one of our most beautiful tree willows. Laurel willow is tolerant of very cold weather and adapted for use in all of the Intermountain West, although it requires deep moist soils or supplemental irrigation. Laurel willow is stated as a USDA Hardiness zone 4 plant and has been spotted growing in Sun Valley, Aberdeen, and Red Rocks Lake on the Montana border. This willow is recommended for use in interior rows of multiple-row windbreaks, for landscaping, and to provide nesting and roosting habitat for birds. It's not intended for natural riparian restoration since it is an introduced plant from Europe



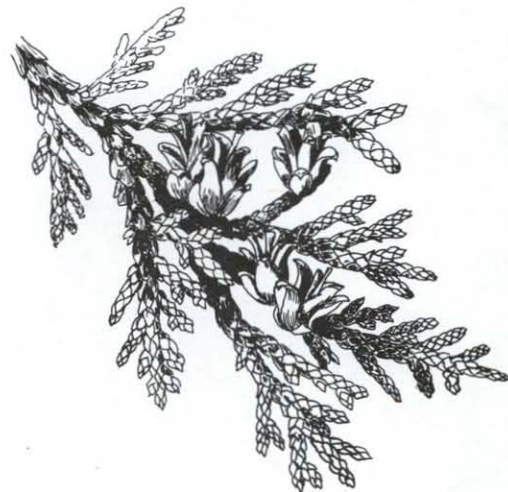
Willow, Mackenzie (*Salix prolixa*, previously known as *Salix rigida* var. *mackenzieana* and *S. eriocephala* ssp. *mackenzieana*) grows rapidly to a mature height of 10 to 12 feet. This Idaho native is found in moist sands and gravel and requires a minimum of 20 to 25 inches of annual precipitation. It is used in conservation plantings for streambank stabilization, riparian site restoration, landscaping, wildlife habitat, and shelterbelts. We grow the USDA NRCS release 'Rivar' from eastern Washington.

Conifers (Evergreens)

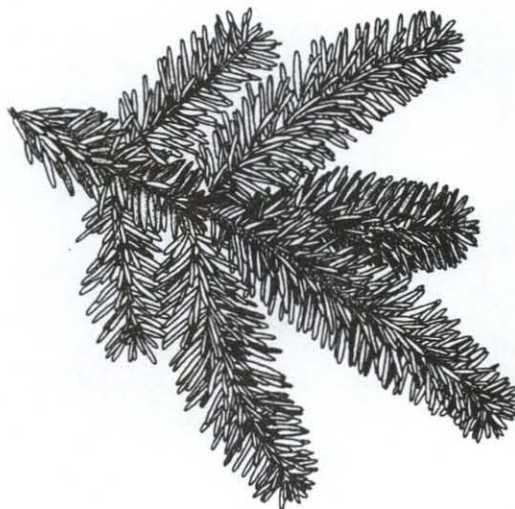
Cedar, Incense (*Calocedrus decurrens*- recently changed from *Libocedrus decurrens*) is a moderate to fast-growing conifer native to southern Oregon and the mountains of California. This false cedar grows in a conical shape and can reach heights of 60 to 150 feet. The Latin name means 'beautiful cedar,' perhaps in reference to its rich red-brown bark and lush, shiny foliage. Drought-tolerant once established, incense cedar prefers dry areas and does well on southwestern slopes. In Idaho, we recommend planting it at or below 4,000 feet in elevation. Classified as a zone 5 plant, this cedar can withstand temperatures down to -20°F. It endures shade as a seedling, but requires more sunlight as it matures. The wood is strong, straight-grained, and resists rot, making it ideal for exterior siding, decking, cedar chests and pencils. We recommend Incense cedar as a windbreak, hedge or ornamental. **Wildlife benefit:** Incense cedar provides shelter for birds and small animals. The seeds are eaten by songbirds.

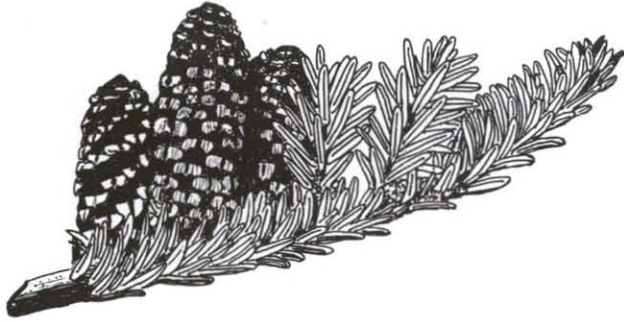


Cedar, Western Red- (*Thuja plicata*) is a northern Idaho native recommended for reforestation and riparian enhancement. It can reach mature heights of 150 feet and 4 feet in diameter, although in the wild trees grow to over 18 feet in diameter. The heartwood of the western redcedar is one of Idaho's most useful and valuable primarily because it resists decay. It is used for almost every purpose requiring exposure to the elements such as shingles, shakes, fence posts, outdoor furniture, and siding. In the wild, this cedar is found on moist slopes and along stream banks. Some of our ancient redcedars are claimed to be over 3,000 years old! Western redcedar is a fast grower, but it must have ample water. It also makes a nice hedge if planted close together and sheared yearly. **Wildlife benefit:** Deer and elk browse the sweet-smelling leaves and twigs in winter.

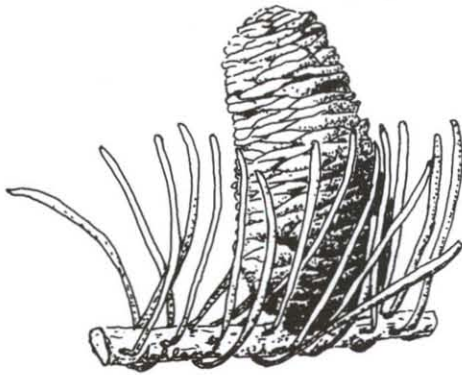


Fir, Algerian (*Abies numidica*) is native to north Africa. It has stiff, shiny-green needles and a symmetrical, pyramidal form which gives it the look of a spruce. Algerian fir is fast growing and thrives in limestone derived soils. It makes a beautiful Christmas tree or ornamental. *Not available this year*

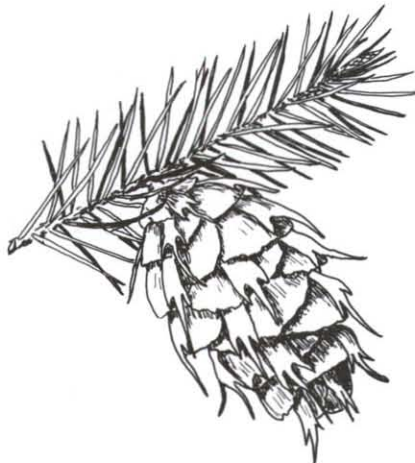




Fir, Canaan (*Abies intermedia*) has been deemed the "up and coming" Christmas tree by tree growers. It's native to the Virginias, and is named after the Canaan Valley in West Virginia where it was first discovered. It has many of the characteristics of Fraser fir but will better tolerate adverse conditions than Fraser, such as wet sites and late frosts. Some consider it an intermediate or hybrid between Fraser fir and Balsam fir - others think it is a subspecies of Balsam fir — in either case it thrives in northern to central Idaho and deserves attention as a potential Christmas or landscape tree. This fir prefers a deep, fertile loam, but does well in a variety of soil types. It will not tolerate a dry, upland site on a western or southern exposure. Our seed source comes from selected stands in Virginia.

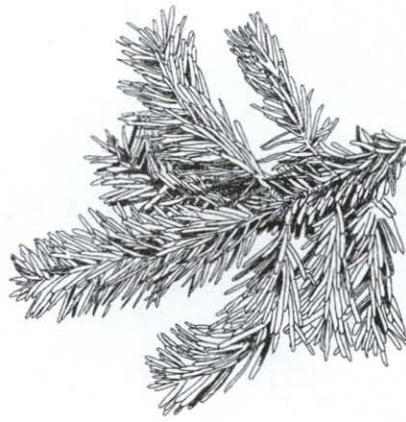


Fir, Rocky Mountain Concolor (*Abies concolor* var. *concolor*), or white fir, is a tree with nice symmetry and beautiful blue-grey needles. It's a large tree, reaching over 125 feet at maturity, and may live for 250 to 300 years. Concolor fir is found on higher elevation, cool, dry northern exposures but is adaptable to a wide range of soil types and moisture, making it useful in a windbreak. This fir is used extensively in the Christmas tree industry not only because of its beauty but because the needles on the cut trees stay green and fresh and last far into spring. We grow seed collected in the Sante Fe National Forest in New Mexico as recommended by the Inland Empire Christmas Tree Association. **Wildlife benefit:** Needles are an important part of the blue grouse diet, and chickadees, red crossbills, and Clark's nutcracker feed on the seeds.

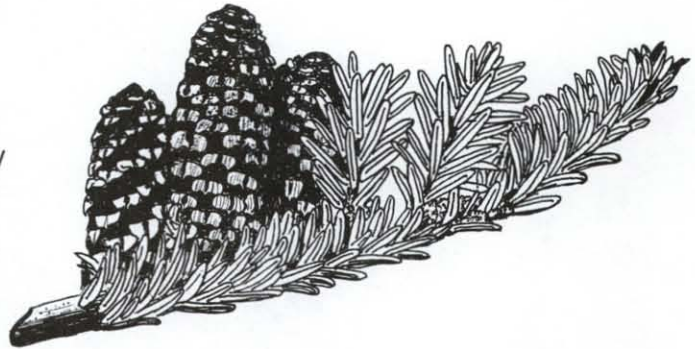


Fir, Rocky Mountain Douglas- (*Pseudotsuga menziesii* var. *glauca*), also known as red fir, is an Idaho native with a medium to high growth rate. It is considered the most valuable timber tree in the United States and is the most harvested tree in Idaho for timber. Douglas-fir are also used extensively as Christmas trees. It needs a well-drained soil for best growth and can reach mature heights of 60 to 80 feet in a windbreak or 100 to 130 feet in a forest. Douglas-fir is more difficult to establish under irrigation than Scotch pine or Norway spruce. Growth is generally slow without supplemental watering in areas with less than 18 inches of annual precipitation. Our seed is collected near Moscow, ID. **Wildlife benefit:** Seeds are eaten by many species of birds, including crossbills, nuthatches, and chickadees. Hawks and owls use it for roosting.

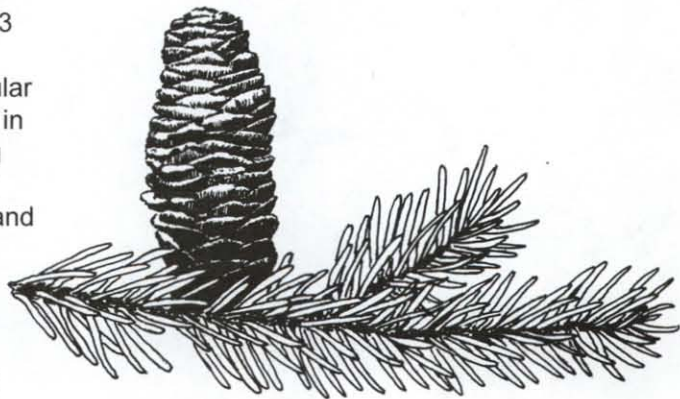
Fir, European Silver (*Abies alba*) is native to the mountains of central and southern Europe, in the Black Forest of Germany. It is widely cultivated in Europe as an ornamental, Christmas tree, and timber tree, but is relatively new to the United States. It has attractive, dark green foliage and a tendency to grow wide.



Fir, Fraser (*Abies fraseri*) is considered the "Cadillac" or "Ultimate" of Christmas trees by many. It is new to this part of the country, its native range being the Appalachian Mountains in the southeastern United States. Research trials by the Inland Empire Christmas Tree Association have shown this fir responds well to the climate and acidic soils of northern and central Idaho. It is a beautiful, fast-growing tree, with its shiny, dark green needles, wonderful fragrance, and narrow, spire-like form. The underside of the needles are silvery — making the tree almost glisten, and the branches are stiff — great for holding ornaments. For obvious reasons, this fir would make a wonderful landscape tree as well as a Christmas tree. The literature says it prefers well-drained soils, but it has been shown to also do well in the clay soils of the Palouse region of Idaho. Our seed source comes from selected stands in the Roan Mountains of North Carolina.



Fir, Grand (*Abies grandis*), a northern Idaho native also known as white fir, may exceed 120 feet high or 3 feet in diameter. Beautiful, aromatic, glossy green needles on sweeping branches make this tree a popular Christmas tree and ornamental. Grand fir grows well in a variety of environments and is tolerant of fluctuating water tables and floods. It occurs most frequently on deep, moist alluvial soils, in gulches, along streams, and on gentle slopes of northerly exposure. Our seed source comes from the Clearwater River drainage, which has been said to contain the best commercial stands of grand fir. **Wildlife benefit:** The sweeping boughs provide good thermal and hiding cover for big game and nesting sites for birds. Fir needles are a major part of the diet of grouse. Birds, the Douglas squirrel, and other mammals eat the seeds.



Helpful hints on growing firs

According to Bob Girardin, exotic tree specialist and editor of *Exotic Conifer News*, many people have trouble growing true firs in hot, dry conditions because the soil temperature is allowed to get too high. Some recommendations that should improve survivability and growth include:

- Planting your seedlings under existing shade that allows sufficient sunlight (ie shadecards and stumps left from cut trees).
- Planting on sites that receive only morning sun.
- Utilizing ground covers, mulch and drip irrigation.

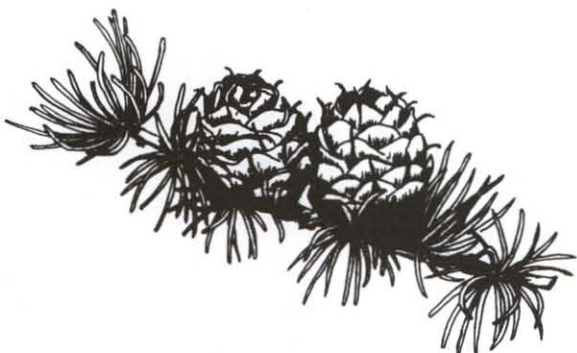
For information on subscribing to Bob's newsletter, *Exotic Conifer News*, please see page 42.



Fir, Trojan (*Abies equi-trojani*) is native to western Asia Minor. There are few of these in cultivation and relatively little is known about them. This fir seems to do best on heavy, moist, well-drained soils and has dark-green, glossy, long needles. It tolerates soils that are high in calcium deposits (limestone-derived). Trojan fir makes an excellent Christmas tree or ornamental.



Juniper, Rocky Mountain (*Juniperus scopulorum*), native to east central and southeastern Idaho, attains heights of 20 to 30 feet with a medium to rapid growth rate. Although highly drought tolerant, Rocky Mountain juniper grows on a wide range of soils and will tolerate a high water table. It forms a very dense, symmetrical crown and is a superior small tree for windbreaks in this region. In winter it changes color from shades of gray to purple gray. We grow the NRCS release 'Bridger Select' from Montana, which is selected for its uniform broad conical shape, vigorous growth, and greater than average foliage density. **Wildlife benefit:** This tree is an important source of food, shelter, and nesting for numerous birds and mammals, including waxwings, robins, turkeys, jays, big horn sheep, and deer.

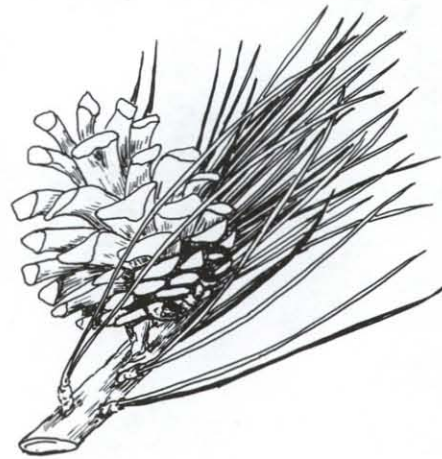


Larch, Western (*Larix occidentalis*) is a northern Idaho native recommended primarily for reforestation. It attains maximum growth on deep, moist, porous soils in high valleys, and on northerly or westerly exposed slopes. Seedling growth is exceptional, as 4-year-old plants may exceed 8 to 10 feet in height.

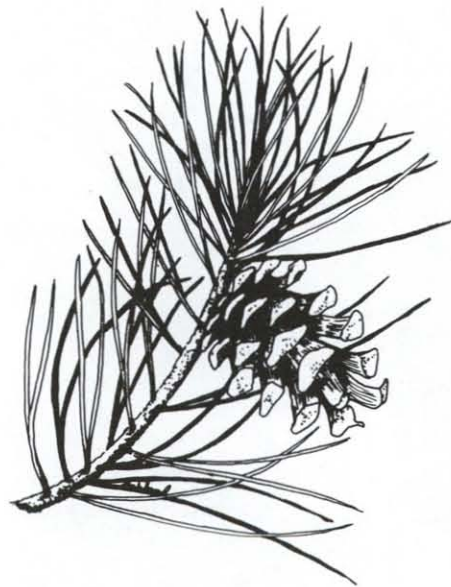


Naked Larch! Western larch is one of very few deciduous conifers, that is, it loses its needles each winter. If you ordered larch seedlings, you'll notice they have very few needles, if any, and the needles are a deep red to maroon. Although the seedlings look dead, don't worry — this spring the buds will open and new, green needles will grow. Next fall the needles will begin their annual ritual of turning yellow and falling to the ground.

Pine, Austrian (*Pinus nigra*) has a fast rate of growth, growing 18 to 24 inches a year once established, eventually achieving heights of 40 to 60 feet. It has a dense, dark green crown. It holds its lower branches very well and is an excellent tree with irrigation, making it ideal for windbreaks. If planted without supplemental watering in localities with less than 20 inches of annual precipitation, it needs a deep, fertile soil with good moisture-holding capacity. We grow seed from Macedonia selected for high density, excellent shape, and dark green foliage. **Wildlife benefit:** If the lower branches are retained, this tree will provide excellent winter cover for pheasant, quail, and partridge, as well as for small animals and other birds. Songbirds, including nuthatches, crossbills and chickadees, eat the seeds.



Pine, Lodgepole (*Pinus contorta* var. *latifolia*) is an Idaho native that rapidly grows into a 50 to 100 foot, straight, slender, branch-free tree. Native Americans used the long, slim saplings to make their buffalo-hide lodges, hence the name "lodgepole pine." This pine does well in a wide range of soil types and environments, although it prefers it cold and performs best on moist, well-drained, sandy or gravelly loam soils. It is commonly used to reclaim disturbed sites, and areas with dry soils or frost pockets where other species won't grow. It does have problems with bark beetles in stagnated stands. This pine is cut for plywood, posts, poles, house logs, railroad ties, and paper. Our seed source is from western Montana. **Wildlife benefit:** Seeds are an important food for pine squirrels, chipmunks, and songbirds. Needles are eaten by grouse in winter.



Pine, Ponderosa (*Pinus ponderosa* var. *ponderosa*), also known as yellow pine or bull pine, is an Idaho native with a fast growth rate (18 to 24 inches a year once established), and attains a mature height of 60 to 80 feet in windbreaks and 150 to 180 feet in the forest. It is aptly named, for *ponderosa* means "large" and this pine is one of the largest pines in the world! It has excellent wood and is one of Idaho's most valuable timber trees. Ponderosa pine withstands hot, dry sites well, and adapts to a variety of soil conditions but must have good drainage and full sunlight. Many consider this pine to be the most reliable evergreen for windbreaks. Our seed is collected near Moscow, ID. **Wildlife benefit:** Ponderosa pine provides excellent cover and nesting sites for many birds. Chipmunks, ground squirrels, and birds, including grosbeaks, chickadees, finches, siskins, crossbills, nuthatches, and turkeys will eat the seeds.





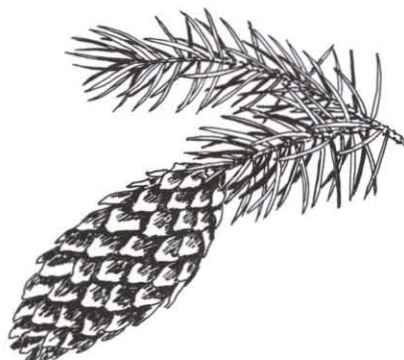
Pine, Scotch (*Pinus sylvestris*), native to northern Eurasia, has a rapid growth rate, reaching mature heights of 40 to 70 feet. Widely used for windbreaks, this pine is generally easy to establish, adapting well to a variety of soil conditions. It is also used extensively for Christmas trees. The greatest problem with this species is the tremendous variability in color, hardiness, habit, and adaptability. We grow seed highly selected for excellent shape, fast growth, blue/green needles, and disease resistance. **Wildlife benefit:** Chipmunks and birds eat the seeds.



Pine, Western White (*Pinus monticola*) is a northern Idaho native and the state tree. We recommend it only for reforestation or landscape usage in northern portions of the state. This rapid growing evergreen with blue-green foliage grows best on rich, porous soils in moist valleys and on middle and upper slopes of northerly exposure. Our seed source, the University of Idaho white pine seed orchard, offers blister-rust resistance. It's the same seed source used by the Idaho Department of Lands and private industry.

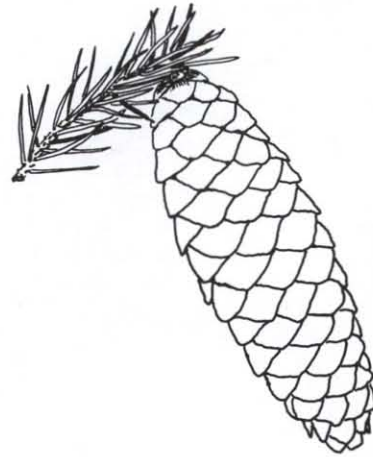


Spruce, Blue (*Picea pungens*), native to far southeastern Idaho, can grow unusually slowly the first 1 to 3 years after planting, but has a medium growth rate after that. Its crown is very dense with attractive pyramidal form, reaching heights of 50 to 60 feet. It makes an excellent windbreak species in most regions of the state and traps and holds snow well. The color varies from green to blue, but we grow seedlings from seed collected on the Kaibab National Forest in Arizona to ensure a higher percentage of blue foliage. **Wildlife benefit:** Blue spruce provides excellent winter cover for upland game birds and small animals



Spruce, Engelmann (*Picea engelmannii*), adapted to high elevations, has a slim, rapidly tapering crown that sheds heavy snow. This Idaho native prefers deep, loamy soils of high moisture content. It is primarily used for reforestation of cool, moist sites near timberline. The wood is high quality — strong, white and very low in resins. It's used for lumber, pulp and even musical instruments. Engelmann spruce is generally greener than blue spruce, although specimens have been found that range from grey-green to silver-blue. **Wildlife benefit:** Branches provide excellent hiding and thermal cover for big game. Buds and needles are eaten by grouse; squirrels, chickadees, chipmunks, mice, and voles eat the seeds.

Spruce, Norway (*Picea abies*), a native of Europe, attains heights of 60 to 80 feet. Although spruce in general are slow growers compared to other conifer species, Norway spruce has one of the fastest growth rates of the spruces. Its crown is dense and extends to the ground unless the base is in heavy shade. Norway spruce grows in many soil conditions and environments, but prefers moist, deep soils with high fertility. Growth rates increase with increased organic matter and are positively correlated to the nitrogen content of the soil — so go ahead and fertilize this tree! It does fairly well in dryland plantings if soil is deep and fertile. **Wildlife benefit:** Grouse eat spruce needles, and seeds are consumed by birds and small mammals. Provides good winter cover for birds and small animals, and it's a good roosting tree for hawks and owls.



Special Packages

Lewis & Clark Package - \$25.00

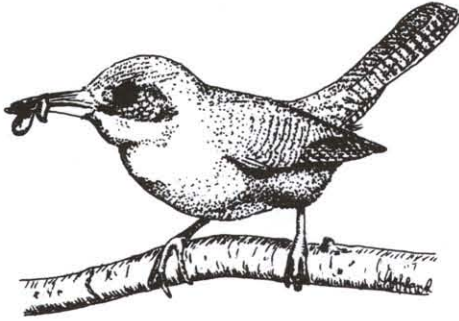
Available for a limited time only! Celebrate the bicentennial of the Lewis & Clark expedition by planting a collection of plants that were named and described by Lewis and Clark as they journeyed through the Rocky Mountains. Your package will include 1 plant each of: Black twinberry, Golden currant, Kinnikinnick, Lewis syringa, Ponderosa pine, Redosier dogwood, Rocky Mtn maple, Serviceberry, Western larch, and Woods rose. A fact sheet and planting guide will be included as well.



For further information about the 175 or so plant species that Lewis & Clark added to science, we recommend reading '*Plants of the Lewis & Clark Expedition*' by H. Wayne Phillips. With its beautiful photography and detailed accounts of each species, it is a great addition to any home. It may be purchased for \$20.00 from your local bookstore or directly from Mountain Press by calling 1-800-234-5308, emailing info@mtnpress.com, or ordering online at www.mountain-press.com.

WILDLIFE LOVER'S PACKAGE - \$75.00

This pre-packaged offer contains 50 seedlings that will grow into prime sources of food or cover for wildlife. Each package contains 10 species, and all species are suitable for both northern and southern Idaho. You will receive black cherry, bur oak, chokecherry, common wild apple, golden currant, oakleaf sumac, serviceberry, Western sand cherry, blue spruce, and Austrian pine.

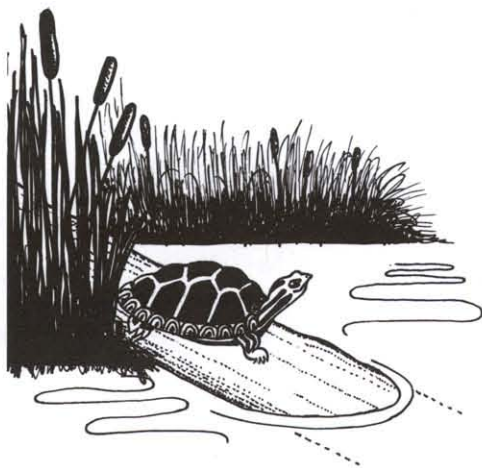


MINI WILDLIFE LOVER'S PACKAGE - \$40.00

The wildlife package is also available in a "mini" size for the smaller acreage and includes 2 of each of the ten species described above.

STATE OF IDAHO PACKAGE - \$30.00

Plant Idaho's state tree and flower and attract the state bird — all in your own yard. We are happy to offer this package that includes 5 SuperStock Western white pine, 5 SuperStock Lewis syringas, and a mountain bluebird nesting box made of Idaho Western redcedar for years of enjoyment. We also include natural history and ecological information on these three species.



RIPARIAN PACKAGE - \$75.00

Some scientists estimate that 90% of the pre-settlement, western US riparian zones (zones along streams, rivers, and lakes) have vanished due to development, grazing, dams, and other human-influenced activities. Healthy riparian zones are important for native fisheries, neotropical songbirds, sediment and flood control, winter browse for big game, and recreational activities. Our riparian package is suitable for planting along perennial streams and waterways, and along intermittent waterways where annual natural precipitation exceeds 20 inches. Each package contains 5 each of the following: black hawthorn, Douglas spirea, redbud, dogwood, black twinberry, coyote willow, Drummond willow, Mackenzie willow, quaking aspen, sitka alder, and water birch.

Books, publications, journals, and organizations

This section is comprised of plant-related educational materials that we have found very helpful. Hopefully you will find them useful too!

A Tremendous Field Guide Manual

What kinds of trees grow outside the towns and farms of Idaho? Which ones are actually naive to Idaho? How does one I.D. a tree by its leaves? This book by noted forestry professor Fred Johnson is about wild trees - native, escaped, and naturalized trees one might encounter in Idaho. The volume is illustrated with life-sized reproductions of actual leaves for easy identification. Readers learn about the most accessible places to see particular trees, the size/location of the largest known tree of each species, the range of the species, and more. **WILD TREES OF IDAHO** is a 288-page field guide with over 100 illustrations, maps, and color plates featuring the wild and beautiful natural environment of Idaho. It is available for \$40.00 plus shipping and handling from Caxton Press out of Caldwell, ID. To order, call 1-800-657-6465, or write: Caxton Printers, 312 Main Street, Caldwell ID 83605.

Subscribe to *Woodland Notes*

Woodland Notes is the popular newsletter for owners and managers of private woodlands in Idaho published by U of I Extension Forestry. It provides practical information about woodland management as well as news of events and issues facing private forests.

Woodland Notes is also available online at <http://www.cnr.uidaho.edu/extforest/Woodland%20NOTES.htm>

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 Moscow, ID 83844-1140



FIRE IN FOREST ECOSYSTEMS OF THE INLAND WEST



Fire in the Forest
 Though a natural part of the ecosystems of the Inland West, wildfires in one of the most forested, most biologically diverse, and most economically important regions of our physical environment.

Like in part of a multi-state region across the Inland West, encompassing a large portion of the Intermountain United States, this area has been and will be fire characterized by wet, cloudy winters and dry, sunny summers, the lushness of the Inland West were shaped by volcanic eruptions and frequent wildfires. Forests in the Inland West are mainly coniferous. Vegetation patterns are complex and variable, responding to such factors as elevation, soil, and aspect.

Structure plant communities and providing nutrients that have the potential for vegetation change. Fire has complex effects on plant survival, growth, and reproduction. Many species are stimulated by fire, which enhances seed germination, flowering, and seed production. Fire also opens space for conditions more favorable to seedling establishment by providing a combination of open space, increased light, nutrients, and moisture, and temporarily reducing the amount of soil, seed-eating animals.

Many plant species that depend on fire for reproduction are in decline or extinction if fires are suppressed. The plant community that occupies your forest today is one that is usually the result of past fires, with each species responding to changes in the local environment on their own particular time and manner.

Fire varies in terms of how often it occurs (frequency), when it occurs (season), and how severely it burns (intensity). Contributions of

it's slow rates of decay and decomposition, also depends on whether fire resulting from lightning and lightning by reducing carbon and nutrients back into forms usable by growing plants.

Two general fire regimes are recognized. Annual recurrence fire regime consists of low to moderate intensity surface fires at short intervals (2-25 years). This type of fire regime maintains an ecosystem of relatively uniform, possibly all-aged stands of dominant tree species, and a typical of conifer forests dominated by ponderosa pine and western larch. This type of fire regime kills competing vegetation, maintains small to moderate amounts of surface fuels, and with little or no accumulation of fire-killed materials, reduces fuel loads. A stand-replacing fire regime is one that has moderate to high intensity fires that occur at long intervals (50-500 years) and is typical of conifer forests dominated by species such as baldy pine. With stand-replacing fires, practically all vegetation is

Discover A New Generation of Christmas Trees and Ornamentals...



Want to become more familiar with growing exotic conifers? You are invited to subscribe to *Exotic Conifer News*, a semiannual newsletter that shares the experiences of growers of exotic conifers from all over the world. The price of the newsletter is \$10.

For a complementary copy of *Exotic Conifer News*, please send a stamped, self-addressed business-size envelope to Bob Girardin, 158 Upper Bay Rd. Sanbornton, NH 03269

Questions? Comments? Contact Bob Girardin at 603-524-1739, bobwpfarm@metrocast.net or visit his website at: www.willowpondfarm.com

Native Plants Journal

Growers and planters of native plants will find this colorful, highly illustrated magazine a useful guide for ideas on conservation, restoration, and landscaping. *Native Plants Journal* is published twice annually and is filled with beneficial information and beautiful photographs of our native flora.

Annual subscription rates are: \$25 - Students; \$30 - Personal;
\$60 - Library/Institutional

Order your subscription now! Call toll-free 1-800-842-6796; Fax 812-855-8507
or visit <http://iupjournals.org>

You may also mail your order to: *Native Plants Journal*,
Indiana University Press - Journals Division, 601 North Morton Street,
Bloomington, IN 47404-3797.

Please visit the native plant network at
<http://www.nativeplantnetwork.org>.
This site is devoted to the sharing of information on how to
propagate native plants.

Limited Supply!

Raising Forest Tree Seedlings at Home: Simple Methods for Growing Conifers of the Pacific Northwest

This publication, affectionately called the Beginner's Nursery Manual, was a cooperative effort of the USDA Forest Service Cooperative Forestry Program and the Forest Research Nursery. The manual provides basic, practical information for folks who wish to grow forest tree seedlings at home on a hobby level. Although focusing on conifers of the Pacific Northwest, the techniques presented will work with a variety of woody trees and shrubs. This would also be an invaluable aid for people thinking about starting their own nursery. The easy to read text is supplemented with plenty of figures, and appendices provide more detailed and advanced information.

For a single, complimentary hard copy, contact:

Tom D. Landis	TEL: 541-858-6166
National Nursery Specialist, retired	FAX: 541-858-6110
USDA Forest Service,	E-mail: nurseries@aol.com
JH Stone Nursery	
2606 Old Stage Rd	
Central Point, OR 97502-1300	

Also available on-line at:
<http://seedlings.uidaho.com/DrawAnnouncements.asp>



The *Inland Empire Christmas Tree Association* is a group of growers, retailers, suppliers and extension personnel of Eastern Washington, Eastern Oregon, Idaho, and Western Montana who work together to solve their problems and develop a sound Christmas tree industry.

Annual Meeting

Varied programs and tours enable members and interested people to keep abreast of the latest research, tax laws, diseases, herbicides, and insecticides in a specialized industry.

Join Now!

Do you plan to produce and market Christmas Trees, sell Christmas trees or related products, sell to Christmas tree growers, or produce nursery stock for Christmas tree growers? Will you want to share your methods, your successes and maybe some minor failures? If you do, then we want you to join the rest of us in the Christmas tree industry by joining **IECTA**.

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Email: nbutte@pullman.com

Effective tree plantation protection against animal browsing

During my thirty-five years working in the forest industry, the silviculture side of the industry has been faced with the problem of effective seedling protection following harvesting activity. I have been involved in many field trials evaluating the effectiveness of both chemical animal repellents and physical protection devices used in the pursuit of seedling protection.

Plantation failure due to animal browsing is not an option for forest industry companies. Plantation failure affects overall costs and may result in a reduction to a company's long term Annual Allowable Cut (AAC).

Seedling protection programs entail labour and supply costs which, in both the short and long-term, often equal more than four times the cost of initial seedling establishment. Tree protection cones, cages and other mechanical devices cost many times the cost of the seedlings they protect, require frequent maintenance, and in order to prevent deformed tree growth, must often be removed as the seedling develops.

I have found Plantskydd® Animal Repellent to be a **cost-effective product** that offers very effective initial seedling protection (deer, rabbit, elk). When followed by follow-up treatments in higher risk areas, Plantskydd provides from 90-100% seedling protection.

Plantskydd is not a new concept in commercial forest seedling protection. Foresters and natural resource managers in British Columbia have used it for over 8 years with excellent results. To ensure optimum efficacy, careful attention to directions must be followed in the mixing, dilution and application of the product.

Plantskydd, when applied properly and judiciously, is a forest industry standard in the establishment and protection of healthy forest plantations.

BILL LASUTA AND ASSOCIATES LIMITED
Forestry Consultants
Bill Lasuta, President, A.Sc.T., May 2, 2003

Plantskydd's effectiveness as an animal browse deterrent has been confirmed in operational conditions since 1993 by large forestry companies on millions of conifer and deciduous trees of various species.

WHY DOES IT WORK SO WELL?

Plantskydd works by emitting an odor that animals associate with predator activity, repelling the animal before it nibbles on plants. The odor is not unpleasant to the applicator. Research has proven this is more effective than other repellent systems—where the animal needs to taste treated plants before being repelled. Once animals are attracted to an area and begin feeding, it is more difficult to discourage them from returning. Plantskydd stimulates a fear-based response which will have them looking for somewhere else to dine.

Plantskydd's long-term effectiveness is attributable to the tenacity of its 100% natural, vegetable oil binder in sticking to plants, even under severe snow/rainfall conditions: up to 6 months over winter, 3-4 months in summer.

To obtain best results in commercial applications, call and ask for Bill Lasuta—35 years in forestry and 6 years experience applying Plantskydd
Toll free 1-800-252-6051
info@treeworld.com

Visit our website for DEALER LOCATOR MAP, FAQ's, product application, testimonials and field trial results
www.plantskydd.com

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— ORGANIC —

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OMRI™
Listed

Plantskydd® powder concentrate is listed by the Organic Material Review Institute for use in production of organic foods and fibre.

*Animals
avoid plants
before they bite
— not after !*

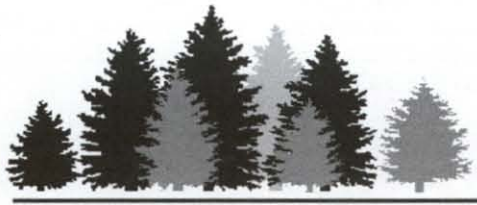


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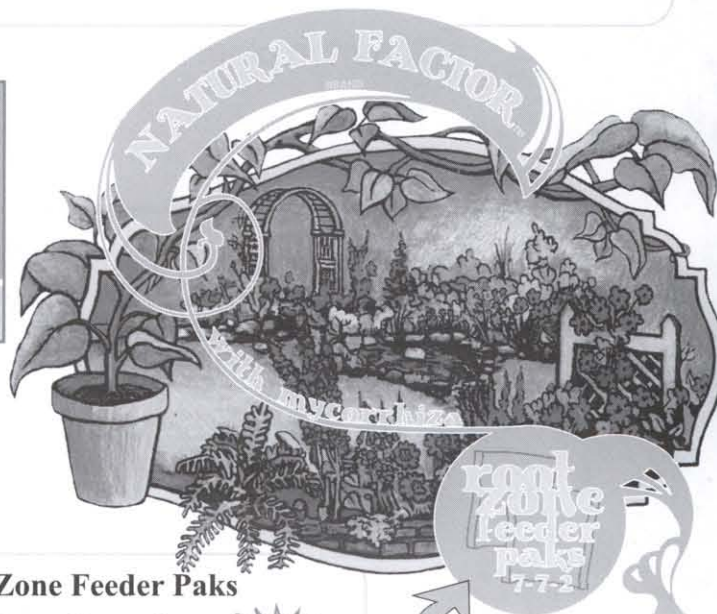


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At RTI, we are proud of our labels...
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Reforestation Technologies International is now launching a new line of "Organic & Natural" fertilizers and soil amendments for land restoration and related applications.

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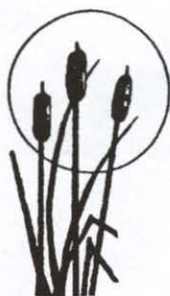
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