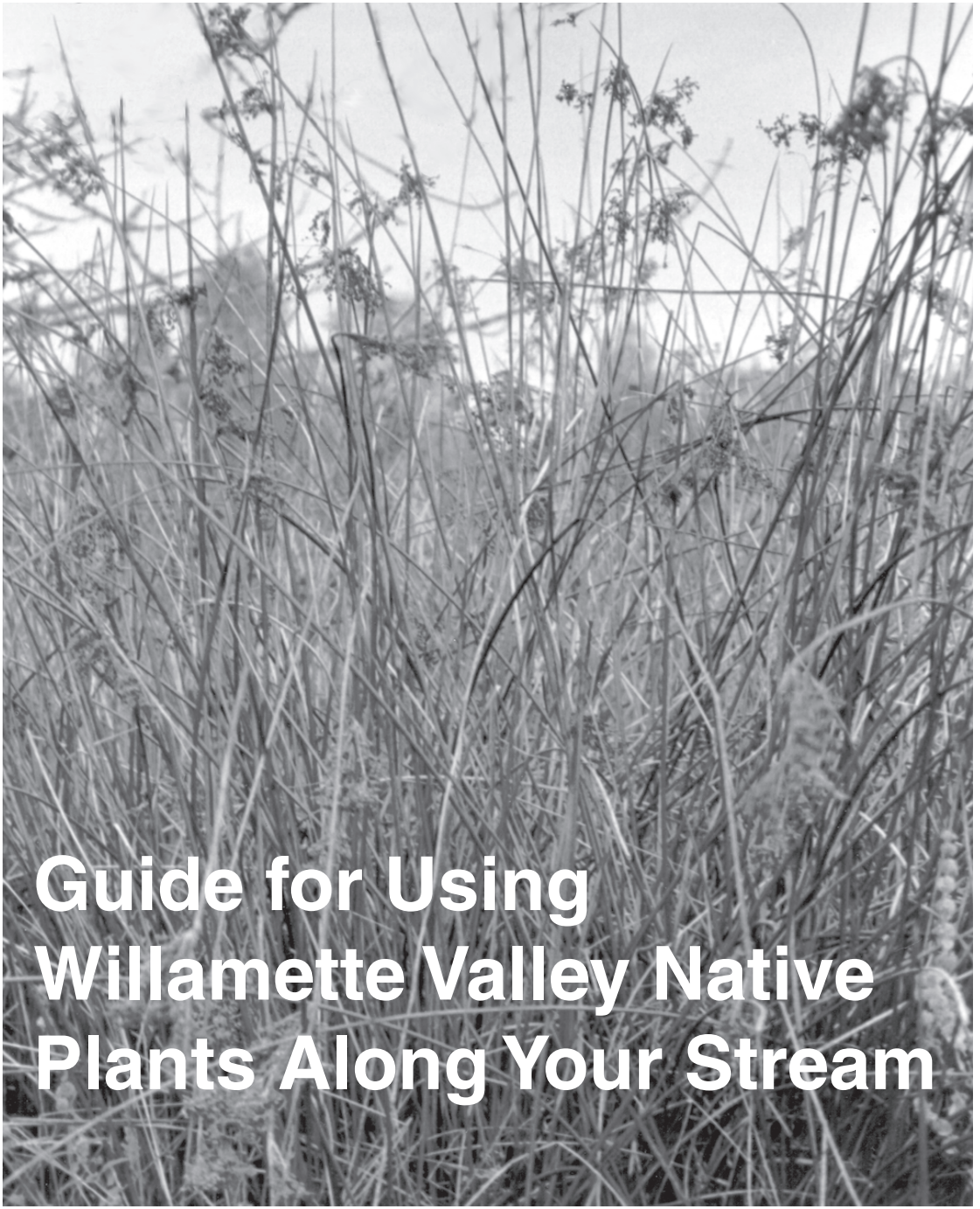

Guide for Using Willamette Valley Native Plants Along Your Stream

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Why Use Native Plants?

Native plants are an important part of the local natural ecosystem. They provide a critical link for insects, birds, and other species that have evolved together. Native plants can also provide a variety of benefits such as:

- **streambank stabilization:** roots from native plants help hold soil and slow erosion.
- **easy care and water conservation:** native plants are adapted to the local soil types; they thrive in the Willamette Valley climate of high rainfall in winter and low rainfall in summer, if grown in the correct location.
- **beautiful landscaping:** many of the native plants have attractive flowers, foliage, winter twigs, fall color, and produce a unique landscape.
- **food and cover for wildlife:** migrating birds, waterfowl, and threatened and endangered species use the plants for food and cover. Fish feed on the aquatic organisms that consume leaves and twigs dropped in the water.
- **pollution filtration:** surrounding land uses can contribute pollution such as sediment and soil, human and animal waste, and toxics such as oil and car exhaust fumes, to a stream. A buffer strip of native plants can reduce the impact of surrounding land uses on the stream.

Many, if not all, of these objectives can also be accomplished with careful selection of nonnative plants. The use of native species is a conservative approach to ecosystem restoration and enhancement.

Who Should Use This Guide?

This introductory guide is intended for novices who want basic information on natural landscaping, streambank stabilization, and landscaping for wildlife habitat using native plants.

This brochure provides a step by step, easy to use guide to planting Willamette Valley natives along your streambank. Species which are not native, are not found frequently, or are not easily propagated are not covered in this guide. For more detailed information on native plant propagation and identification, please refer to the references at the end of the brochure.

If you have any questions regarding techniques, plant materials, etc., please contact your local Soil and Water Conservation District or the US Department of Agriculture's Natural Resources Conservation Service. The phone number can be found in the government pages of your local phonebook. Available support includes planning projects, plant selection and availability, and more.

Overview and History

The vegetation of the Willamette Valley has been extensively altered. So what did it look like before the settlers arrived? The journals of the pioneers who came to the Valley in the mid-nineteenth century described broad prairies bordered by thick, wide forests along the rivers. In those floodplains, river channels meandered; changing course during the winter high water and creating sloughs, swales, and marshes -- some of which dried out by the end of summer. Dense forests of cottonwood, alder, willow, ash, maple, and fir growing along these riparian corridors were as much as three to six miles wide. On the higher benches within the corridors were fir, oak and Ponderosa pine. The level prairies above the floodplains were also wet during the winter, because of the high water table, clay soils, and abundant rainfall. These were vegetated with grasses and herbaceous plants which could also survive the summer's dry, cracked soil. On the low hills around the valley floor were stands of oak trees surrounded by grasslands.

The pioneers' journals also described the abundant clouds of smoke that filled the Willamette Valley in late summer as a result of the extensive fires set by the Kalapuyan Indians, who had occupied the valley for thousands of years. The Kalapuyans used the annual burning to control the growth of underbrush and trees, which made it easier to hunt, and to improve growing conditions for edible plants such as camas, which were major food sources. The local plant communities were altered by the first known human inhabitants.

The pioneers continued altering the vegetation by cutting the forests to build their homes and towns and plowing the prairies to grow the crops that were their own, familiar, major food sources. They also halted the annual burning, allowing the underbrush and woodlands to grow.

Throughout much of the 1900's, the damming and channelization of streams and

rivers and the installation of drain tiles and ditches on the wet prairies reduced -- and in places eliminated -- the natural winter flooding, meandering, and ponding of water.

Farming, grazing, roadbuilding, logging, flood control, and urbanization have all contributed to the extensive alteration of the Willamette Valley's vegetation. Although the valley could still be described as predominantly broad plains bordered by woods, most of the original plant communities are gone. Native plant habitat is greatly reduced, and introduced exotics can quickly take over any disturbed ground that is not farmed, paved, or populated. Many places that seem to be natural have actually been altered, and many plants that look wild are really introduced species.

Although much of the Willamette Valley vegetation has been altered, there are a few places where local, native plant communities can be examined to gather ideas and inspiration. The following public and private lands contain some areas where native streamside plant communities remain intact:

- Adair Park in Benton County
- Deepwood Estate in Salem
- Delbert Hunter Arboretum and Botanic Garden, Dallas
- Fern Ridge in Veneta
- Finley National Wildlife Refuge, south of Corvallis
- Helmick Park near Monmouth
- Jackson-Frazier Wetlands in Corvallis
- Minto Brown Park in Salem
- Willamette Mission State Park north of Salem
- Simpson Park in Albany
- Smith Bybee Lakes in Portland
- Takena Landing Trail and Bowman Park in North Albany
- Tyee Vineyard's nature trail, near Monroe (private land)
- Waterloo County Park, near Lebanon
- Willamette Greenway parks, including the one on Riverside Drive between Albany and Corvallis
- Willow Creek in Eugene (privately owned by The Nature Conservancy, but is open to the public)
- Oxbow Regional Park in Troutdale
- John Inskeep Environmental Learning Center in Oregon City
- Forest Park in Portland
- Tryon Creek State Park in Portland
- Tualatin Hills Nature Park in Beaverton
- Jackson Bottom Wetlands Preserve in Hillsboro
- Audubon Society of Portland Sanctuary
- Oaks Bottom Wildlife Refuge in Portland
- Beggars-tick Wildlife Refuge in Portland
- Sauvie Island Wildlife Area in Portland
- Smith and Bybee Wetlands Natural Area in Portland
- Berry Botanical Garden in Portland
- Leach Botanical Garden in Portland
- Marquam Nature Park in Portland

The Willamette Valley

Courtesy of the Lane Council of Governments

Courtesy of the Army Corps of Engineers

Site Planning:

- Map your proposed planting site; buildings, paths and drives, utilities, year-round water, seasonal water, soil type, location and extent of streambank failure (if any), wind direction, existing trees and vegetation, neighboring properties, signs of wildlife, etc.
- Observe your site over time; note seasonal patterns of sun and shade, drainage, and wind.
- Identify plant distribution on the site; invasive species may need to be removed or controlled, desired species could be used to propagate additional plants (transplanted).
- Consider access to water and methods of irrigation for newly-established plants, protection from animals, and weed control.
- Plan a time-line for realization of the planting project, considering optimum planting times, plant availability and costs, requirements for soil cultivation or excavation, and the required permits.
- Select plant species that "fit" the proposed planting site in their requirements for sunlight, soil type, drainage, and moisture.
- Determine the stability of the streambank at the proposed site and determine if planting is enough to stabilize the bank. Select plants with soil-binding abilities as needed.
- Contact local agencies that provide technical assistance for guidance, advice, and permits.
- Obtain permits for soil excavation and removal, spraying, or vegetation removal or planting as required by laws. Please check with city, county, state and federal agencies for regulations.
- Research habitat-improvement financing options. Call the local Natural Resources Conservation Service in the phone book government pages.
- Notice location of powerlines and avoid planting trees near them or plant only low-growing (under 25 feet at maturity) trees adjacent to power lines.
- Be aware of underground power line safety. Call your local "One call underground locating" number found in the phone directory before you dig.

Site Preparation

Streambank Stability

To increase your chance of success with a streambank vegetative planting, you need to address bank stability and existing vegetation.

Adding plants along your streambank can aid in preventing soil erosion. However, if the bank is too unstable, planting may not be enough to stabilize and protect the streambanks.

Signs of an unstable bank include:

- Chunks of soil or sod falling into creek
- Unvegetated or eroded slopes
- Steep, irregular, vertical banks

When these occur, other stabilization measures may be necessary. Mechanical engineering and soil bioengineering measures can be taken to reduce the chances of streambank failures. Additionally, any land uses that could contribute to streambank instability; such as grazing, mowing, or cropping; should be evaluated and possibly eliminated. Stabilizing the bank by deflecting water through engineering means or altering land use practices may be enough to allow vegetation to become established.

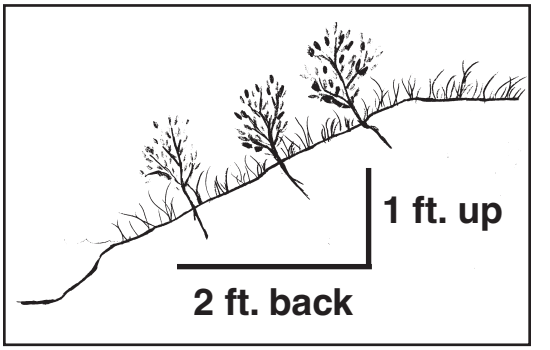
To increase the stability of the planting site, you can smooth out irregularities that may cause localized erosion. The bank should be sloped so that for every two feet or more of horizontal distance from the stream there is only one foot of vertical rise. Your project should end at two stable points on the bank, i.e. areas that are not eroding and have vegetative protection.

NOTE: If you intend to fill or remove soil on a project, you must apply for a joint permit from the Oregon Division of State Lands and the U.S. Army Corps of Engineers. Also contact your county's land use planning, zoning, or management agency.

Working With Existing Vegetation

Ideally, you want to keep as much of the existing, native, non-invasive vegetation as possible to get a jump-start on streambank recovery.

Certain types of existing vegetation will probably out compete anything you plant for water, nutrients and light. Too much competition from existing plants will reduce the success of your plantings. (See ***Invasive non-native plant species*** on page 11)



Cross-section of streambank after sloping

(Site Preparation continued)

Whether planting grasses, shrubs, or trees, look for any competition that may exist. Invading weeds can be removed by mechanical, hand, or chemical means. Limiting the use of chemicals is preferable because of potential contamination of nearby water sources. Spraying chemicals may also be illegal close to waterways. Call your local County Extension agent for more information. Also, some counties have land use regulations for riparian areas, so contact your county land use planning, zoning or land management before removing vegetation.

Buffers and Riparian Corridors

Grasses, trees and shrubs along a streambank, lake, or pond are called buffers, and can protect the waterbody from nearby land uses. Streamside plantings of trees, shrubs, and grasses can intercept contaminants from both surface water and groundwater before they reach a stream and help restore damaged streams.

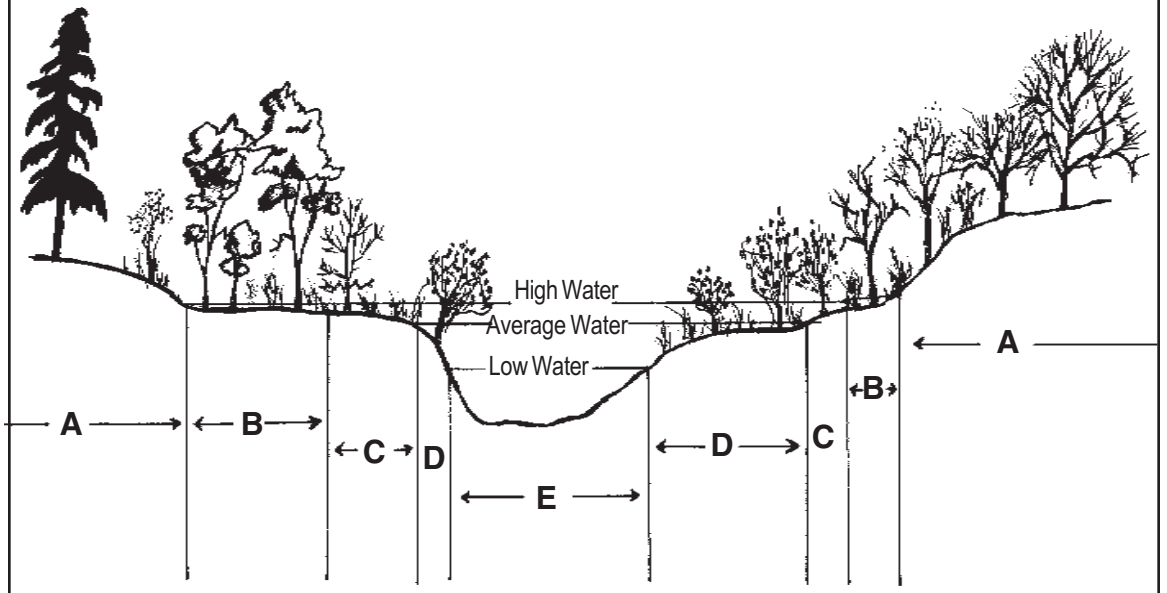
Buffers assist with conservation by slowing water runoff, trapping sediment and enhancing water infiltration in the buffer itself. They also trap fertilizers, pesticides, bacteria, pathogens, and heavy metals. They offer a natural habitat for wildlife, and improve fish habitat. All of these benefits add up to make buffers a visible demonstration of your own personal commitment to common-sense conservation.

Different buffer widths are recommended for different protection purposes. These are general distances and may change as new research becomes available. Under the Forestry Practices Act which is administered by the Oregon Department of Forestry, the recommended buffer width is 20 to 100 feet on either side of the stream. The Natural Resources Conservation Service recommends a minimum of 30 feet on either side. These buffer widths are recommended in order to protect water quality from logging, for maximum stream shading, for filtering pollutants, stabilizing the bank, and providing wildlife habitat. Good upland practices, such as erosion control and pasture management, are also necessary to maintain the health of the land and water.

Planting Location

Choose plants that are suited for site conditions: soil, shade and water. The diagram on the next page illustrates moisture zones along a creek and describes the planting zones. Refer to the ***Recommended Plants*** section (pages 12 - 20) for information on the zone in which plants will grow best. Clump plants or space them at irregular distances apart so that planting does not look like a grid.

Streamside Vegetation Zones



Zone Descriptions:

Zone A -- uplands

Zone B -- temporarily flooded: underwater only during periods of flooding

Zone C -- seasonally flooded: underwater during an average winter

Zone D -- intermittently exposed: exposed during summer low water

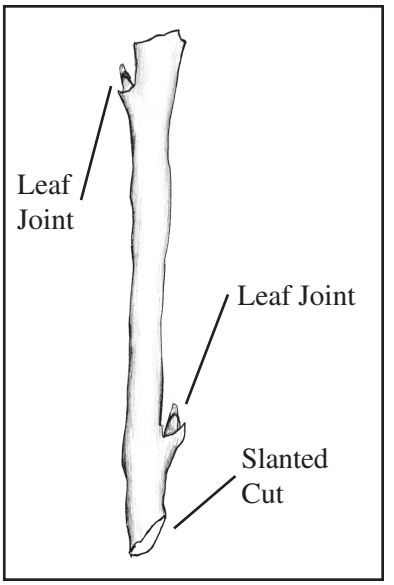
Zone E -- permanently flooded: streambed

Source: Fish and Wildlife Service, US Department of the Interior. Dec. 1979. Classification of Wetlands and Deepwater Habitats of the United States.

Planting and Propagation Techniques

Propagation techniques are described in detail below. This guidebook suggests only relatively easy plant propagation techniques for each plant. These are general guidelines and will not work in all cases. To determine which technique works for the plants you are interested in, please see the plant descriptions on the following pages. Buying rooted seedlings from a local nursery is the easiest of all methods, although locally adapted species may not be available. Given lead time, nurseries can grow stock or obtain cuttings if they do not carry the species you want. Proper instructions for planting and care can be obtained from the nursery. You might find sources of plants on your own property. Do not collect elsewhere without permission and permits. For information on sources of native plants, see page 23. For details on more difficult plant propagation techniques, please see the references at the end of this guidebook.

1) Rooted plants (bare-rooted, ball and burlap, or containerized): There are a wide variety of rooted stock available from commercial nurseries. Bare rooted plants are rooted seedlings or cuttings where most of the soil has been removed. Containerized plants are usually potted. Ball and burlap is usually native soil left intact around the root and held together with burlap. It is best to plant in fall, winter, or early spring. For specific methods on planting each type, check with the nursery where you obtained the plant and the references at the end of this publication.



Hardwood Cutting or Live Stake

2) Hardwood cutting: Harvest and plant hardwood cuttings as early as possible in the fall or winter or early spring when plant has dropped its leaves (when plant is dormant) for a better chance of survival. Cut the tip of a branch back until it is at least 1/4 to 1/2 inch in diameter. Use one to two year old wood. The age of the wood is easy to tell from the number of growth rings on the cutting. For some species it is necessary to use cuttings only from the previous years growth (older wood is less likely to root). Cut branch into pieces 12 to 24 inches long, being sure to keep at least two leaf joints. The bottom cut should be just below a leaf joint and slanted. If desired, use rooting hormone on slanted end. Bury cuttings in well drained soil with two thirds of cutting below ground. Protect your cuttings from frost. Use rebar or long metal stake to make holes in the bank to plant cuttings.

3) Live stakes: A live stake is a large hardwood cutting sturdy enough to hold down erosion control mats and bundles of branches. Plant live stakes as early as possible in the fall or winter for a better chance of survival. During the cold and wet season, cut a stem approximately 1/2" to 2 1/2" thick (often two to five year old wood) and 2 1/2 to 3 feet long. (See diagram of live stake) For willows, the larger diameter of the stem you use, the better. Be sure to plant the stake with the buds pointing up and the wider end in the ground. To plant, tap the stakes into the ground and be careful to avoid damaging the top of the stake. It may be necessary in harder ground to start the planting hole with a pipe.

4) Softwood cuttings: From soft, new spring growth, cut a 4 to 5 inch long cutting just below a leaf and remove all leaves but the top two. Clip off the top end. Dip the cut end into liquid rooting hormone and stick it into rooting medium (sand or perlite and less than 25% peat moss). Water daily and thoroughly. Keep humidity up by making a miniature greenhouse with a clear plastic—ventilate daily. Transplant growing cutting into its own pot until it is time to plant in final destination.

5) Layering: Layering is the process of inducing stems and branches to root while still attached to the parent plant. Use a low-growing branch that can be bent down to the ground. For woody species, make a slanting cut on the underside of the branch about 12 inches from the tip and just below a joint (DO NOT cut all the way through); keep cut open with a pebble or peg. Use a wire loop to secure the cut part of the branch in a hole about 2 to 4 inches deep. Fill the hole with good soil or soil mix and put a brick or stone on top to ensure the branch stays in the ground. Protect with a mulch in winter. When new growth shows, dig down to check root growth; and if they have grown, completely cut away from the parent and transplant.

6) Divisions of root, bulbs, rhizomes or tubers*: Done in autumn or early spring. To divide deciduous and semi-deciduous perennials, cut foliage back to about 4 inches from the ground. With evergreen perennials, leave all young, healthy foliage, but remove all dead leaves. Find natural divisions and cut or break them apart and plant.

7) Rooted sucker*: a shoot that grows from the roots of a parent plant. Dig it up and plant in new location.

8) Seeds: Each plant seed requires different growing conditions. Check with a local nursery or any source from the list at the back of this book to learn how to successfully sprout and grow seeds. Consider the use of erosion control fabrics and mulches to prevent the seed from washing away and to keep the soil moist for seed germination.

* NOT A SUGGESTED METHOD FOR COLLECTING WILD PLANTS, except from locations such as construction sites, or on your own property.

Site Maintenance

Even though your plants are natives, they will still need some attention until they are successfully established. You will most likely need to water them during the first summer after they are planted (water deeply rather than frequently) to help them form root systems. You may need to control plants that compete for water and nutrients and protect plants from animals that eat their leaves or bark. Some suggested methods of animal protection are tubing, repellents, netting, fencing, or trapping and baiting.

If topsoil is intact, you do not need to add new soil, fertilizers, or soil enrichers before planting or to fertilize after planting. If a plant fails to thrive after its first year, you may find it will be happier in a different location. However, if your bank is eroded and has little or no topsoil, the remaining subsoils should be amended with topsoil low in weed seeds where plant is planted. Some local topsoil amendment has soil organisms required for improving growth, health and vigor. These organisms improve nitrogen and moisture uptake, and help prevent disease. Slow release or organic fertilizer in the planting hole might be necessary if topsoil has eroded away. Recommended organic fertilizers include composted manure and/or vegetation.

Invasive Non-Native Plant Species

We recommend that you do **NOT** plant these species in or near streams or wetlands due to their aggressive growth habit and competitiveness. They can take over and dominate native plant species.

- Purple Loosestrife *(Lythrum salicaria)*
- Scotch Broom *(Cytisus scoparius)*
- Tall Fescue *(Festuca arundinacea)*
- Ivy *(Hedera helix and Hedera species)*
- Himalyan Blackberry *(Rubus discolor)*
- English Holly *(Ilex aquifolium)*
- Reed Canary Grass *(Phalaris arundinacea)**
- Yellow Water Iris *(Iris pseudacorus)*
- St. John's Wort *(Hypericum perforatum)*
- Ryegrasses *(Lolium perenne, multiflorum)*
- Bird's Foot Trefoil *(Lotus corniculatus)*
- English Laurel *(Prunus laurocerasus)*
- Periwinkles *(Vinca minor, V. major)*
- Bamboo species *(several genera)*
- Japanese Knotweed *(Polygonium cuspidatum, P. sacchilense)*
- Evergreen Blackberry *(Rubus lacimactus)*
- White poplar *(Populus alba)*
- Non-native Bentgrasses *(Agrostis tenuis, palustris, alba, stolanifera, capillaris, castellana, gigantea)*
- English Hawthorn *(Crataegus monogyra)*

* *Invasive, possibly native*

Recommended Plants

The following pages describe the some of the main trees, shrubs, herbaceous plants, flowers, grasses, sedges, and rushes recommended for stream side planting. **This guide does not cover all the recommended species; only the most common plants which are easily propagated. Local nurseries and experts can suggest additional plants which are native and easy to grow.** Seedlings and rooted stock of all the recommended species are commercially available. The symbols indicate which of the species recommended in this guide have the most value for bank stabilization and wildlife, and the amount of sun or shade in which the plant grows best. The zone refers to the area along the stream bank to which the plant is most adapted (see diagram on page 8). Please note that the scientific names change due to new genetic research. For an updated list of names see the National PLANTS Database at http://plants.usda.gov

Trees

Big Leaf Maple

(*Acer macrophyllum*) **Zone a, b**

40' - 100' tall. 2 - 4' diameter trunk. In clusters it is a tall, straight tree. In the open, it usually forms several large branches within the first 15 feet in a dense round, spreading crown. Good browse for black tailed and mule deer. Seeds are food source for mice, wood rats, squirrels, chipmunks, and some birds. Host to mosses, lichens, and ferns. Fast growing.

Prefers moist, well drained soils.

Propagate from seed.

Black Cottonwood

(*Populus trichocarpa, P. balsamifera ssp. trichocarpa*) **Zone a, b, c**

100' - 200' tall. 3' - 6' diameter. In dense clusters, the trunk is long and clear of branches for most of height with a narrow open crown. In the open, branches start about halfway up the trunk. Important browse for deer and elk and important resting habitat for large birds.

Grows in moist sites along streams. Grows fast and will sprout from stump.

Propagate from hardwood cuttings, live stakes, seed.

Legend

Oregon Ash

(*Fraxinus latifolia*) **Zone b, c, d**

40' - 80' tall. 1' - 2.5' diameter. When it grows in dense clusters, its shape is long, with a clean, narrow trunk and short crown; in the open it is short, with a thick trunk and wide, rounded crown. Abundant seed producer.

Grows in moist to wet soils near streams.

Propagate from seed.

Oregon Crabapple

(*Malus fusca, Pyrus fusca*) **Zone b, c, d**

Large shrubs or small trees grow up to 40' tall and 10" - 18" diameter with stiff, low branching, multiple trunks. Fruit eaten by birds. Indians used to soak fruit in water in order to eat them.

Grows in moist sites near streams.

Propagate from seed, layering.

Oregon White Oak

(*Quercus garryana*) **Zone a, b**

40 - 80' tall. 2 - 3' diameter with a short, thick trunk and a broad, round-topped crown of heavy, gnarled limbs. In the open, trees have a very regular, spherical shape that looks trimmed. Foliage rich in protein. Heavy seeder and vigorous sprouter, but delicate. Can withstand both flooding and drought.

Grows in dry to moist, well-drained soils. Forms pure stands.

Propagate from acorns.

Ponderosa Pine

(*Pinus ponderosa*) **Zone a, b**

(There is a Willamette Valley variety)

125 - 180' tall. 3 - 6' diameter with a tall, open canopy. Seeds are an important food source to all the seed eaters in the forest.

Commonly found on dry, sandy, or gravelly soils, but valley pine grows in seasonally wet places.

Propagate from seed.

Red Alder

(*Alnus rubra*) **Zone a, b, c**

30' - 120' tall. 1 - 3' diameter, slender tree with abundant leaves, but airy look. Relatively short lived (50 years). Inhibits growth of soil fungus that causes heart rot in Douglas-fir. Symbiotic relationship with nitrogen fixing bacteria (adds nitrogen to soil). Provides wildlife food and nest sites. Fast growing.

Mountain slopes, foot hills.

Propagate from seed.

Western Red Cedar

(*Thuja plicata*) **Zone a, b, c**

150' - 200' tall. 3 - 10' diameter. Pyramid shaped tree with straight trunk and branches nearly to the ground. Branches curve downward, then turn up at the ends. Essentially absent from the Willamette Valley south of Clackamas County.

Prefers stream banks, moist flats, forested swamps.

Propagate from seed, layering, softwood or hardwood cuttings.

White Alder

(*Alnus rhombifolia*) **Zone b, c**

40' - 80' tall. 1' - 2' diameter with multiple trunks. Grows quickly and lives around 100 yrs. max. Symbiotic relationship with nitrogen fixing bacteria.

Prefers moist areas and stream banks along the valley floor.

Propagate from seed.

Willows

(*Salix*) **Zone b, c, d**

Sitka *(sitchensis)*
Pacific *(lasiandra)*
Scouler *(scouleriana)**
Northwest *(sessilifolia)*
Piper *(piperi, hookeriana)*

Forms thickets. 10' - 40' depending on species and soil. Grows quickly and has a short life span. Erosion control, good browse. Grouse and quail feed on buds.

Grow in moist, well-drained soil, sun.

Propagate from live stakes, hard or softwood cuttings, seed, layering.

* Scouler willow is more drought and shade tolerant than other willows and does not tolerate standing water (see Cooke, Page 72).

Legend

- Bank Stabilization
- Sun
- Partial Sun
- Shade
- Wildlife

Shrubs

Black Hawthorn

(Crataegus douglasii, C. suksdorfii)

Zone b, c

Deciduous 10' - 30' tree or shrub, often thicket forming. White flowers and black berries. Provides food and shelter for birds.

Propagate from seed.

Cascara (buckthorn, chittam bark)

(Rhamnus purshiana) **Zone a, b**

Deciduous 10' - 35' tree. Small black berries eaten by wildlife. Bark used as a laxative. Often grows with conifers on moist, well-drained soils.

Propagate from seed.

Hazelnut

(Corylus cornuta var. californica) **Zone a, b**

Deciduous 20' - 30' shrub or tree often in dense clumps and understory of forests. Nuts are relished by wildlife.

Intolerant of saturated soil.

Propagate from nuts, layering.

Indian Plum/Osoberry

(Oemleria cerasiformis) **Zone a, b, c**

Deciduous 5' - 16' shrub that blooms in February and produces edible berries in June.

Prefers well drained soils.

Propagate from seed and hardwood cuttings.

Mock Orange

(Philadelphus lewisii) **Zone a, b**

Deciduous 5' - 10' multi-stemmed shrub. Ornamental white flowers attract bees and butterflies.

Propagate from hardwood cuttings, seed.

Nootka Rose

(Rosa nootkana) **Zone a, b, c**

Deciduous thorny bush to 6'. Pink flowers provide nectar for insects. Fruit eaten by birds and small mammals; deer and elk browse foliage. Provides wildlife cover.

Propagate from seed, live stakes, hardwood cuttings.

Ocean Spray

(Holodiscus discolor) **Zone a, b**

Deciduous multi-stemmed shrub to 15' provides wildlife cover, nectar, and browse.

Intolerant to saturated soils; very drought tolerant.

Propagate from seed, hardwood cuttings.

Oregon Grape (tall)

(Berberis aquifolium) **Zone a, b**

Oregon Grape *(Berberis nervosa* also called *Mahonia nervosa)*

Evergreen multi-stemmed shrub with holly-like leaves, yellow flowers, and dark blue berries. Tall variety 5' to 10'; low variety to 2'. Both spread from underground stems.

Fruit and nectar provide wildlife food.

The low variety tolerates full shade.

Propagate from seed, rooted suckers.

Pacific Ninebark

(Physocarpus capitatus) **Zone b, c**

Deciduous multi-stemmed shrub 6' to 13' provides cover and food for wildlife.

Prefers streambanks.

Propagate from hardwood or softwood cuttings, live stakes, seed.

Red Elderberry

(Sambucus racemosa ssp. pubens var. arborescens formerly S. racemosa var. arborescens) **Zone a, b, c**

Deciduous multi-stemmed shrub to 20' provides nectar, berries, and browse for wildlife.

Grows in clearings and on stream banks.

Propagate from hardwood cuttings, live stakes, layering, seed.

Red-osier Dogwood

(Cornus sericea ssp. occidentalis, Conus stolonifera var. occidentalis) **Zone b, c, d**

Deciduous multi-stemmed shrub to 15'. Provides cover, browse, and berries for wildlife.

Grows on streambanks and tolerates seasonal flooding.

Propagate by seeds, hardwood cuttings, live stakes, layering.

Salmonberry

(*Rubus spectabilis*) **Zone b, c**

Deciduous rapidly growing shrub, 3' to 10' in moist places. Best used in foothills of Coast and Cascade Ranges. Provides wildlife cover, nectar, berries, and forage.

Propagate from hardwood cuttings, rooted suckers, live stakes, seed.

Pacific Serviceberry

(*Amelanchier alnifolia, var semiintegrifolia*) **Zone a, b**

Deciduous multi-stemmed shrub 10' - 25' grows in well drained soils, often forming thickets. Provides cover, browse, and berries for wildlife. Berries edible by humans, too.

Propagate from seed, layering.

Snowberry

(*Symphoricarpos albus var. laevigatus*) **Zone a, b, c**

Deciduous 2 ' - 6' shrub spreads by rhizomes, often forms thickets. Provides cover, browse and white berries for wildlife.

Propagate from hardwood cuttings, seeds, rooted suckers.

Douglas Spiraea (Hardhack, Steeplebush)

(*Spiraea douglasii var. menziesii and var. douglasii*) **Zone b, c, d**

Deciduous wetland shrub, sometimes invasive in its preferred habitats. Provides cover for animals and nectar for insects.

Propagated from hardwood cuttings, seeds, divisions, rooted suckers.

Vine Maple

(*Acer circinatum*) **Zone a, b**

Deciduous small tree (to 25') or tangle of vine-like branches, depending on habitat. Common forest understory plant provides seeds, nectar, browse, and cover for wildlife.

Propagate by layering or from fresh seeds (sow immediately).

Legend

- Bank Stabilization
- Sun
- Partial Sun
- Shade
- Wildlife

Herbaceous Plants and Flowers

American Speedwell

(*Veronica americana*) **Zone c**

Perennial, to 1' tall. Blue flowers in clusters.

Grows in moist ground; shallow water of marshes; wet, sandy soil of gravely streams.

Propagate from seeds or rhizome.

Common Camas

(Camassia quamash) **Zone b, c**

Perennial, up to 1.5' tall.

Moist to wet prairies, important food source for Native Americans.

Propagate from seed, bulbs.

Leichtlin's Camas

(C. leichtlinii) **Zone b, c**

Moist to wet prairies, important food source for Native Americans. (Be aware that there is also a poisonous white flowered camas, known as death camas)

Propagate from seed, bulbs.

Cow Parsnip

(*Heracleum lanatum*) **Zone a, b**

Perennial/biennial. Up to 8' tall. White flowers.

Grows in streambanks, wet meadows.

Propagate from fresh seeds or seedling.

Hall's Aster

(*Aster hallii*) **Zone a, b**

Perennial/annual. Up to 2' tall. White flower.

Wet meadows, shrub swamps, forested wetlands, rocky streambanks.

Propagate from seeds or division of rootcrown.

Hedge Nettle

(*Stachys cooleyae*) **Zone a, b**

Perennial, up to 4' tall. Red to purple flowers.

Grows in swampy, marshy woods, lake shores, streambanks.

Propagate from seeds, seedlings, division.

Large-leaf Lupine

(*Lupinus polyphyllus*) **Zone a, b**

Perennial. 2 - 4' tall. Spike of pea-like white to blue flowers.

Grows on streambanks, wet meadows.

Propagate from seeds (steeped in hot water).

Northwest Cinquefoil

(*Potentilla gracilis*) **Zone a, b**

Perennial. Up to 2' tall. Yellow flowers.

Wet meadows, streambanks.

Propagate from seeds, divisions or seedlings.

Piggy-back Plant

(*Tolmiea menziesii*) **Zone a, b**

Perennial, up to 2' tall.

Wet woodlands, streambanks.

Propagate from seeds, plantlets, or rootstalk.

Seep-spring Monkey Flower

(*Mimulus guttatus*) **Zone b, c**

Annual/perennial. Up to 2' tall. Yellow flowers similar to snap dragons.

Habitat is wet meadow, marshes, springs, ponds, streambanks.

Propagate from seeds (easy to germinate) or seedlings.

Stinging Nettle

(*Urtica dioica*) **Zone a, b**

Up to 6' tall. Clusters of greenish flowers hang below leaves. Hairs of this plant sting bare skin.

Swampy/marshy/lakeshore/streambank.

Propagate from seed.

Water Parsley

(*Oenanthe sarmentosa*) **Zone c, d, e**
(in water less than 1.5 feet deep)

Perennial, up to 1.5' tall. White flowers.

Swamps, wet meadows, marshes, along the banks of slow-moving streams, wooded wetlands.

Propagate from seeds or seedlings.

Legend

- Bank Stabilization
- Sun
- Partial Sun
- Shade
- Wildlife

Grasses

American Sloughgrass

(*Beckmannia syzigachne*) **Zone b, c**

Grows 5' tall and produces many seeds for wildlife. Annual or short-lived perennial (2-3 years).

Grows in seasonal wetlands, pond shores, marshes, shallow water. Rapid growth and establishment.

Propagate from seed.

Columbia Brome

(Bromis vulgaris) **Zone a**

Grows 1.5 to 3.5' tall. One of the most shade tolerant native perennial bunchgrasses.

Excellent for understory soil protection in denser thickets and under trees. Needs well drained soils. Moist to dry banks in shade or open wood.

Propagate from seed.

Roemer's Fescue

(*Festuca roemerii*)

Zone a, b

1.5 - 2' tall. Long-lived perennial bunchgrass.

Loamy, sandy or gravely soils, grows in shade or sun and tolerates acidic soils. Requires good drainage.

Propagate from seed.

Short-awned Foxtail

(*Alopecurus aequalis var. aequalis*) **Zone b, c, d**

(Similar species: *A. geniculatus*) 1.5' tall.

Grows in shallow standing (or slow moving) water. Prefers mostly open areas, not often in shade.

Propagate from seed or layering.

Western Mannagrass

(Glyceria occidentalis) **Zone c, d**

1.5' -5' tall. Perennial that spreads by rhizomes. Good cover and seed source for many birds and waterfowl. Preferred forage for small mammals and deer.

Grows in shallow standing or slowly moving water, or permanently moist ground.

Propagate from seed or rhizome cuttings.

Tufted Hairgrass

(*Deschampsia cespitosa*) **Zone b, c**

Erect, perennial, bunchgrass from 1.5' - 6' tall grows in dense hummocks. Provides food and shelter for small animals.

Tolerates light grazing. Grow in full sun, no year round flooding. Tolerant of clay soils that are saturated in winter, but not flooded.

Propagate from seed or division of mature clumps or "tufts."

Sedges and Rushes

Propagating Sedges - Most sedges are easily propagated. Sedges can be grown from seed sown in the fall, either on-site (or in trays and allowed to overwinter), or in a greenhouse. Rhizome cuttings can be used, but only from appropriate salvage sites. Special seed treatments, such as seed coat removal, may be needed to enhance germination.

Dense Sedge

(*Carex densa*) **Zone b, c**

1' - 3.5' tall.

Grows at low elevations, floodplains, seasonal wetlands, and wet prairies. Scattered around the edges of pools, in shallow marshes and ditches.

Dewey Sedge

(*Carex deweyana*) **Zone a**

8" -3.5' tall.

Grows in mostly upland. Grows on hummocks, along stream banks, and in moist woodlands or forest openings, from valley floors up to near the timberline.

One-sided Sedge

(*Carex unilateralis*) **Zone b, c**

1' -3.5' tall.

Grows in moist or wet places at low elevations.

Saw-beak Sedge, Prickly Sedge

(*Carex stipata*) **Zone b, c**

1' - 3.5' tall.

Grows in disturbed wet meadows and ditches in lowland to mid-mountain elevations.

Slough Sedge

(*Carex obnupta*) **Zone b, c**

2' - 5' tall perennial. Forms rhizomes. Excellent understory species for erosion control.

Grows in seasonally saturated areas. Wet, shallowly inundated woods, meadows, roadside ditches, lake shores, bogs, marshes, and river banks.

Creeping Spikerush

(*Eleocharis palustris*) **Zone d, e**

(in water less than 1.5 feet deep)

Up to 3' tall. Spreads by rhizomes. Seed is food for geese and ducks.

Grows in shallow, permanently flooded or semi-permanently saturated soils.

Propagate from seeds and division of rhizomes.

Dagger-leaf rush

(*Juncus ensifolius*) **Zone c, d**

0.5' - 2' tall.

Moist sites, but not primarily around standing water. Occurs from sea level to mid mountain meadows.

Hardstem Bulrush, Tule

(*Scirpus acutus)* **Zone d, e**

(in water less than 3 ft. deep and slow moving)

3.5' - 10' tall and are used by birds for nesting material and nest sites. Provides food for water birds, cover for fish, shelter for small mammals and amphibians, and nesting habitat for the western grebe.

Lakeshores, emergent marshes, freshwater marshes, mud substrates; tolerates water up to 3 feet deep. Associated with cattails and yellow pond-lily. Stems help reduce shoreline erosion from wave action.

Propagate from seed or rhizome cuttings, salvaging clumps, or dividing salvaged plants.

Small-fruited Bulrush

(*Scirpus microcarpus*) **Zone d, e**

(in water less than 1.5 feet deep)

2' - 5' tall and provides cover for birds and small mammals.

Found on wet to inundated, nitrogen-rich soils. Disturbed sites. Wetlands, roadside ditches, and wet clearings. Tolerates shade.

Propagate from rhizome cuttings or seed.

Legend

- Bank Stabilization
- Sun
- Partial Sun
- Shade
- Wildlife

List of Recommended Plants

Trees

Big Leaf Maple (*Acer macrophyllum*)
Black Cottonwood (*Populus trichocarpa, P. balsamifera ssp.trichocarpa*)
Oregon Ash (*Fraxinus latifolia*)
Oregon Crabapple (*Malus fusca, Pyrus fusca*)
Oregon White Oak (*Quercus garryana*)
Ponderosa Pine (*Pinus ponderosa*)
Red Alder (*Alnus rubra*)
Western Red Cedar (*Thuja plicata*)
White Alder (*Alnus rhombifolia*)
Willows (*Salix*)
Sitka (*sitchensis*), **Pacific** (*lasiandra*), **Scouler** (*scouleriana*), **Northwest** (*sessilifolia*), **Piper** *(piperi, hookeriana)*

Shrubs

Black Hawthorn (*Crataegus douglasii, C. suksdorfii*)
Cascara (Buckthorn, Chittam Bark) (*Rhamnus purshiana*)
Hazelnut (*Corylus cornuta var. californica*)
Indian Plum/Osoberry (*Oemleria cerasiformis*)
Mock Orange (*Philadelphus lewisii*)
Nootka Rose (*Rosa nootkana*)
Ocean Spray (*Holodiscus discolor*)
Oregon Grape (tall) (*Berberis aquifolium)*
Oregon Grape *(Berberis nervosa* also called *Mahonia nervosa*)
Pacific Ninebark (*Physocarpus capitatus*)
Red Elderberry (*Sambucus racemosa ssp. pubens var. arborescens* formerly *S. racemosa var. arborescens*)
Red-osier Dogwood (*Cornus sericea ssp. occidentalis, Conus stolonifera var. occidentalis*)
Salmonberry (*Rubus spectabilis*)
Pacific Serviceberry (*Amelanchier alnifolia, var. semiintegrifolia*)
Snowberry (*Symphoricarpos albus var. laevigatus*)
Douglas Spirea (Hardhack, Steeplebush) (*Spirea douglasii var. menziesii* and *var. douglasii*)
Vine Maple (*Acer circinatum*)

Herbaceous Plants and Flowers

American Speedwell (*Veronica americana*)
Common Camas *(Camassia quamash)*
Leichtlin's Camas *(C. leichtlinii)*
Cow Parsnip (*Heracleum lanatum*)
Hall's Aster (*Aster hallii*)
Hedge Nettle (*Stachys cooleyae*)
Large-leaf Lupine (*Lupinus polyphyllus*)
Northwest Cinquefoil (*Potentilla gracilis*)
Piggy-back Plant (*Tolmiea menziesii*)
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American Sloughgrass (*Beckmannia syzigachne*).
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Short-awned Foxtail (*Alopecurus aequalis var. aequalis*)
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Tufted Hairgrass (*Deschampsia cespitosa*)

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Slough Sedge (*Carex obnupta*)
Creeping Spikerush (*Eleocharis palustris*)
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Hardstem Bulrush, Tule (*Scirpus acutus)*
Small-fruited Bulrush (*Scirpus microcarpus*)

Glossary

Buffer: A vegetated area of grass, shrubs or trees designed to (1) capture and filter runoff and sediment from surrounding land uses, (2) stabilize the streambank, (3) provide shade to stream, and (4) provide food and shelter to fish and wildlife.

Exotic: Introduced, non-native plants.

Floodplain: The flat area of land adjacent to a stream affected by floods.

Hydric Soils: Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the rooting zone of plants. Often found in wetlands.

Intermittently Exposed: Exposed during summer low water.

Intermittent Stream: A stream that does not flow continuously throughout the year.

Invasive Vegetation: Aggressive, competitive types of plants that will often overwhelm and out-compete other varieties and will dominate an area.

Native: Originating naturally in a particular geographic region.

Perennial: A plant that has more than one growing season.

Rhizome: An underground stem that spreads by creeping; may be long and slender or thick and fleshy.

Riparian Zone: The vegetated area adjacent to a stream or any other waterbody. Its width varies according to the nature of the stream valley.

Seasonally Flooded: Underwater during an average winter.

Soil Bioengineering: The use of live, woody vegetation to increase slope stability.

Swale: A low lying, wet stretch of land.

Temporarily Flooded: An area which is under water only during periods of flooding.

Toe: The bottom of a slope or bank.

Upland: The area that is not usually affected by standing or moving water.

Watershed: The area that contributes water runoff to a stream.

Wetland: An area of land that is saturated at least part of the year by water. Usually found in depressions, low-lying areas or along floodplain or coastal areas.

Plant Material Sources

Oregon Association of Nurseries:
Phone: 1-800-342-6401 **Website:** http://www.nurseryguide.com

Contact your local **Soil and Water Conservation District** for information about native plant sales in your area.

Agencies/Contacts

Soil and Water Conservation Districts: To locate your local SWCD, look in the yellow pages, call the Oregon Department of Agriculture (Salem) (503) 986-4700 or on the web at http://www.oacd.org.

Call for: Technical assistance, cost share assistance, information on current conservation work in your area, assistance with projects.

Watershed Councils: To locate your local watershed council, see http://oregon.gov/OWEB or call the Oregon Watershed Enhancement Board at (503) 986-0178.

Call for: Information on current conservation work in your area, assistance with projects, help with natural resource concerns, and information on watershed conditions.

Natural Resources Conservation Service: Look in the federal section of the blue pages in the front of your local phone book. Your local Natural Resources Conservation Service office is listed under the Department of Agriculture, or on the web at www.or.nrcs.usda.gov.

Call for: Technical assistance, information on funding programs for projects and conservation easements.

Oregon State Univ. Extension Service
An office is located in each county, serviced by an Extension Agent; additional resources are available at the University.
Web page: http://extension.oregonstate.edu
Call For: Information on soils, plant establishment, and other related subjects.

Division of State Lands: 775 Summer Street NE, Suite 100, Salem, OR 97301-1279
Phone: 503-378-3805
Web page: www.oregonstatelands.us
Call for: State removal/fill law.

Oregon Department of Fish and Wildlife:
3406 Cherry Avenue NE, Salem, OR 97303
Phone: 503-947-6000 or 1-800-720-ODFW
Web page: www.dfw.state.or.us
Call for: Fish and wildlife habitat programs.

Oregon Water Resources Department:
725 Summer Street NE, Suite A,
Salem, OR 97301-1271
Phone: 503-986-0900
Web page: www.wrd.state.or.us
Call For: Water rights permits and information.

U.S. Army Corps of Engineers, Portland District:
PO Box 2946, Portland, OR 97208-2946
Phone: 503-808-5150
Web page: www.nwp.usace.army.mil
Call for: Removal/fill law.

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This publication was funded through a grant from the
Oregon Watershed Enhancement Board (OWEB)
formerly the Governor's Watershed Enhancement Board

Edited by:
Linn Soil and Water Conservation District
South Santiam Watershed Council
Natural Resources Conservation Service
East Multnomah Soil and Water Conservation District

3rd edition printing funded by:
Linn Soil and Water Conservation District
Oregon Department of Agriculture

Thanks to all volunteers and reviewers who dedicated time and expertise to this project

3rd edition printing June 2005