

## A guide to

# RIPARIAN TREE AND SHRUB PLANTING

## in the Willamette Valley: Steps to Success

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Figure 1. Newly installed planting along Newton creek, Benton County, Oregon.

Photo by Donna Schmitz, Benton Soil and Water Conservation District.

Planting trees and shrubs to restore streamside areas, enhance fish and wildlife habitat, improve water quality, and achieve other environmental benefits is increasingly common in Oregon (figure 1). But the success of riparian plantings varies widely, and some fail outright (see “Survey shows variable success with riparian tree planting,” page 2).

Establishing a riparian planting is not easy. Seedling survival and growth are often poor. Competition from weeds can be high. Animal damage is common. Soil texture on a site can vary from coarse sand to dense clay. Planting sites may flood frequently in winter yet become very dry each summer. Management tools such as irrigation, machinery, and herbicides may be regulated or restricted.

Particular challenges in the Willamette Valley include summers that are hotter and drier than in the adjacent Coast Range and Cascades foothills and streams that run through highly modified agricultural and urban areas (figure 2).

This guide describes six steps to help landowners, watershed council members, agency personnel, and others communicate about, plan, and implement successful riparian tree and shrub plantings in the Willamette Valley:

1. Plan your project.
2. Select and obtain plant materials.
3. Prepare the site.
4. Plant your trees right.
5. Take care of the planting.
6. Monitor and learn from results.

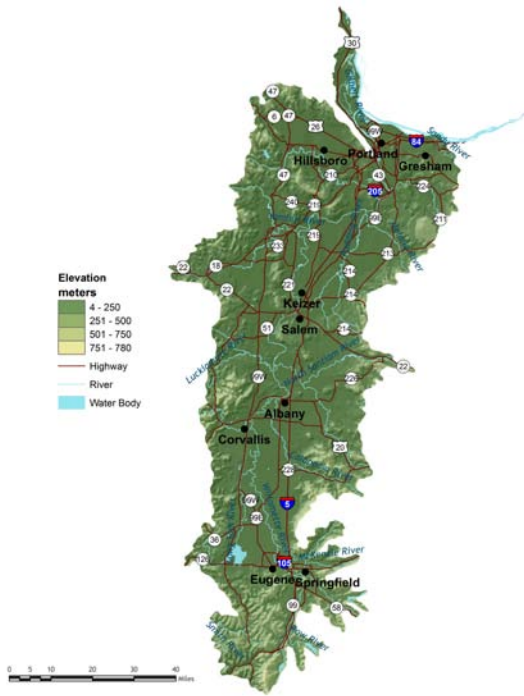


Figure 2. Willamette Valley ecoregion.

Image from *The Oregon Conservation Strategy*. 2006. Salem, OR: Oregon Department of Fish and Wildlife. Reproduced by permission.

## Survey shows variable success with riparian tree planting

Slightly fewer than half of 105 riparian tree-planting projects in western Oregon achieved tree survival rates of 75% or more, according to a 2002 study by the Oregon Watershed Enhancement Board.

In 40% of the projects in the study, fewer than half the trees survived.

Projects installed under the Conservation Reserve Enhancement Program were more successful than projects funded by grants. The study's authors attributed this difference to the greater use of site preparation, postplanting maintenance, and tree protection under the program.

Source: Anderson, M., and G. Graziano. 2002. *Statewide Survey of OWEB Riparian and Stream Enhancement Projects*. Salem, OR: Oregon Watershed Enhancement Board.

## STEP 1. PLAN YOUR PROJECT

### Know your watershed

Your project goals should reflect conditions and needs in your local watershed. Identify what is missing or most in need of enhancement, and set priorities accordingly. In western Oregon, for example, warm stream temperature is commonly identified as the primary water-quality issue, so providing shade to maintain cool water conditions is often a priority.

Begin planning by reviewing watershed assessments from your local watershed council or larger public or private landowners in your watershed (find your local watershed council at [http://www.oregon.gov/OWEB/WSHEDS/wsheds\\_councils\\_list.shtml](http://www.oregon.gov/OWEB/WSHEDS/wsheds_councils_list.shtml)). Many watershed councils have already identified key constraints and opportunities in watersheds or subbasins (e.g., elevated stream temperatures or lack of large wood).

### Know your site

Once you understand watershed conditions and needs, examine your site. Identify specific challenges (e.g., frequent flooding [figure 3], poorly drained soils, abundance and type of weeds, or likely animal damage) that might be serious constraints to a successful planting.

Next, determine what could be enhanced at your site to contribute to overall watershed health. Consider things you might try to change (e.g., amount of shade, bank stability, or livestock use near the stream). Some changes might be easy; others might be difficult or expensive. Some actions will have almost immediate benefits; improvements from other actions won't be evident for years or decades. Make sure any difficult and expensive actions line up with your priorities.

Be sure to consult others. Identify partners in conservation organizations or other agencies who might be able to help identify needs and opportunities at your site (figure 4).

## Checklist for Step 1: Plan your project

Time and thought at this stage will lead to a better, more cost-effective project in the long run.

- Assess needs for the riparian area in the context of watershed conditions and priorities. What is missing or most in need of enhancement?
- Observe site conditions to determine what actions will address identified needs and have the greatest potential for success.
- Set goals based on what will help restore key functions in the future rather than what is thought to have prevailed in the past.
- Consider promoting natural regeneration of trees and shrubs and other passive restoration approaches as well as planting. Try to get the greatest value for your investment.
- Think about possible obstacles, such as a mismatch between project size and budget, equipment availability, and your time, skills, and commitment. Is there a good chance of success?
- Develop a site-specific design that addresses local watershed issues, is appropriate for site conditions, and can be accomplished with available resources.

Use herbicides safely!

- Wear protective clothing and safety devices as recommended on the label. Bathe or shower after each use.
- Read the herbicide label—even if you've used the pesticide before. Follow closely the instructions on the label (and any other directions you have).
- Be cautious when you apply herbicides. Know your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from pesticide use.

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Published October 2011.