Section 3.0 – Site Preparation

This section discusses how to prepare a site for planting. It addresses what steps to take to preserve existing natives, potential control methods for invasives, erosion prevention and sediment control methods, and how to address problematic soil conditions.

The purpose of site preparation is to ready the site for the planting/restoration project which will allow for the re-establishment of native plants. This may involve protecting existing natives, planting new natives, removal of invasives, and adjusting site conditions to allow the natives to grow or better compete (or outcompete) with non native plants already existing on site. Adding soil amendments, providing irrigation, releasing natives are all examples of how the site conditions may be adjusted. The degree of site preparation needed is dependent on the vegetation found on the site, the presence of invasive exotic weeds, soil conditions, previous disturbance to the area such as fire, and other factors.

3.1 Native Plants on Site

All existing native vegetation should be retained and undisturbed to the extent feasible. In addition to providing wildlife habitat, native seed sources, and microsites for new seedlings, existing plants provide a valuable source of microorganisms that are essential for plant development. Certain species (e.g. willows and cottonwoods) grow well from cuttings and preserving the species on site will provide a source for the plants and a future seed source for growing additional plants as needed.

Where native plants are established on the planting sites the following actions are recommended:

- Design planting prescriptions to incorporate the existing vegetation.
- Flag existing native plants.
- Educate all volunteers and maintenance crews on native plants prior to site activities. Walk the site and show examples of the existing native plants and how they are marked.

Plant Release

Several native species will spread and grow rapidly by “releasing” the plants. This process involves pruning leaving one to two leader limbs of the plant. Reducing the number of shoots will accelerate the growth of the plant and provide wildlife habitat in the riparian area. Cottonwoods are a species that does very well through release. Other species that will grow well with clearing of other plants include snowberry and native roses. Using this technique should be incorporated into the design and can be done with the site preparation.

3.2 Clearing Invasive Plants

3.2.1 Introduction

Nonnative vegetation can prevent establishment of native species and can become an unwanted permanent component of a plant community.

Figure 3-1: Himalayan blackberries as a dominant component of the riparian corridor.

Weeds of particular concern identified in Rogue Basin riparian areas include Himalayan blackberry, poison hemlock, yellow star thistle, purple loosestrife, puncture vine and teasel (see noxious weed reference list in Appendix V). In addition, invasives respond to site disturbance and clearing a site often gives the invasives a competitive advantage. Often when once species is removed (e.g. blackberries), new species take over (e.g., poison hemlock) if native aren't established. Therefore removing invasives and incorporating long term maintenance of the invasives and the success of the natives is critical.

3.2.2 Controlling Invasive Weeds

Invasive weeds can be controlled by a combination of biological, mechanical, and chemical means. Biological controls have been found effective for invasive plant control in the region and include agents such as weevils, moths, fungus and goats (ODA, 2003). Angora goats have also been utilized locally for blackberry control and have provided suppression of blackberry growth (ARWC, 2004).

Mechanical control includes techniques such as mowing and grubbing of plants and root systems. As an added benefit the cut canes from the Himalayan Blackberries can be left on site as mulch to reduce the regrowth of other weed species. It is recommended that at a minimum, a three foot circle be cleared around each location where a native tree or shrub is going to be planted.

Chemical control involves the use of aquatic labeled herbicides for invasive weed control (see herbicide labels in Appendix V and weed control under the Maintenance section 5.1). If chemical control is necessary application will be prior to planting and will utilize

the cut-stump application method (see Appendix VI) to the extent feasible. Local ordinances, maintenance methods, community sentiment, and other restrictions should be reviewed before applying chemicals. If chemicals are applied, it is recommended that the aquatic labeled herbicides (glyphosates) or environmentally friendly alternatives are used. Application should be conducted by a licensed applicator.

3.3 Erosion Prevention/ Sediment Control

Removing existing plant material prior to planting may cause susceptible slopes to erode. Special attention should be paid to high risk areas for erosion within the planting area and erosion prevention and sediment control practices implemented as needed. A few examples of streambank stabilization and erosion control techniques from the Stream and Wetland Enhancement Guide (*2004 Clean Water Services and RVCOG)* are shown below. For sites that are high risk or problematic for erosion, a professional CPESC (Certified Professional in Erosion Prevention and Sediment Control), engineer, landscape architect, or other qualified professional should be consulted.

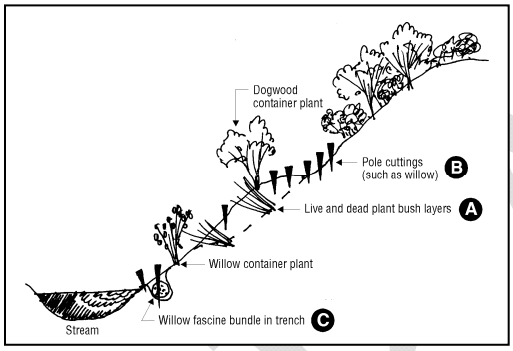


Figure 3-2(a.) Above. *- Stream bank planting schematic showing fascine bundles, pole cuttings, brush layers, and containerized plantings.*

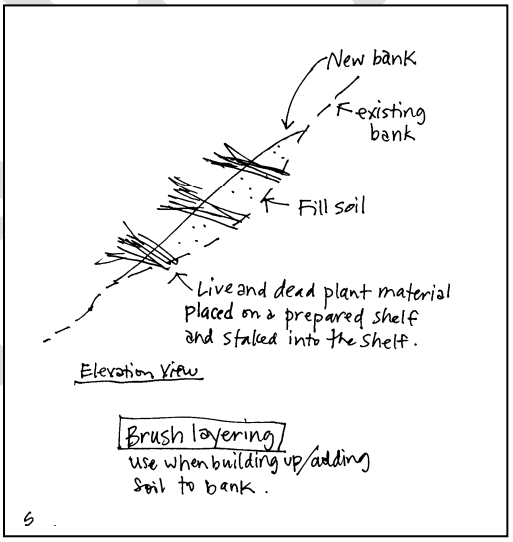
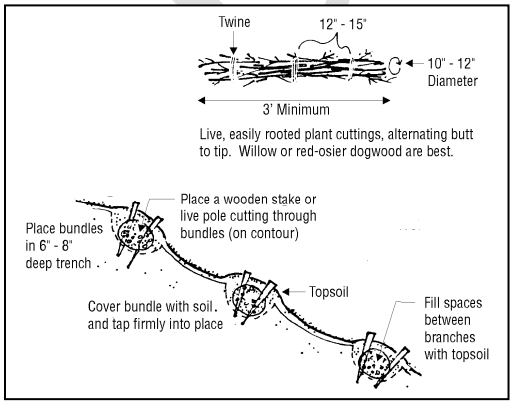


Figure 3-2(b.) Right. *- Close up of brush layering*



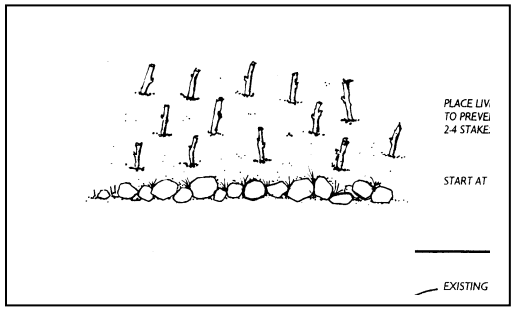


Figure 3-2(d.) - *Close up of pole cuttings.*

Figure 3-2(c.) - *Close up of fascine bundles.*

3.4 Problematic Soil Conditions

Urban soils may display characteristics that are unsuitable for riparian plant species (see Section 2.1.2.2). Such soils may require extensive site preparation including deep plowing, stripping, digging of planting bowls, soils being brought in, or soil amendments. Essential microorganisms may also not be present. Microorganisms can be effectively replaced by rooted plant material that has been inoculated with appropriate microorganisms.

Figure 3-3: An example of a irregular planting bowl and soils brought in for native plants as part of a restoration project.