Section 2.0 – Site Evaluation and Selection

This section provides an overview of features and characteristics used in identifying and prioritizing sites for restoration and protection. There are a number of tools that can be used including field surveys, aerial photographs, soil survey maps, topographic maps, geological maps, shade survey data, land use maps, local knowledge, shade survey data, watershed assessments, and water quality historical conditions. Maps of potential planting sites identified in developing this plan are located in Appendix A.

Once potential sites are identified, they should be prioritized for planting. The matrix located in Appendix VIII is designed to assist in the prioritization. Factors affecting the health of riparian plants and the overall success of the riparian planting project were used in developing the matrix. The matrix assesses the following factors: site accessibility, partner interest, shade potential, coordination with existing plans, general site conditions, habitat enhancement needs, key habitat areas, flooding abatement/storage potential, site preparation, proximity to stream, existing plant communities (including invasive species), fire risk, irrigation needs, and recreational use. The matrix can be adapted as needed to reflect local interests or conditions.

2.1 Site Conditions

To establish a healthy riparian corridor, it is necessary to evaluate site conditions with respect to factors controlling the health of native plants. This baseline evaluation provides a reference condition for what the riparian corridor should be. Information presented throughout this document provides a baseline reference condition including local native plants typically found in riparian corridors. Once a reference condition is established, sites should be evaluated based on soil characteristics, flooding potential, existing vegetation, disturbance, invasive species, water availability, and topography.

2.1.1 Existing Vegetation

The first step in the successful establishment of a healthy riparian area is to note what species are presently growing and what species were found historically in the area. Existing and historic riparian vegetation indicate which species are likely to grow well on the site, and also provide valuable insight to the area's soils and hydrology. In addition, shade survey data (e.g., Pipps 1999) can be used with air photo interpretation to evaluate existing shade conditions with potential conditions. The larger the percentage change in shade, the higher weight the site should have for planting.

Figure 2-1: A potential riparian plant reference location.

2.1.2 Soil Characteristics

Soil characteristics greatly affect site quality. Texture influences soil chemical properties, soil moisture, and root development. Clay in the soil has the largest surface area from which nutrients may be released to the roots. The fertility of a soil is directly related to the amount of clay and silt in the soil. Texture also is related to the amount of soil moisture retained. Sandy soils allow faster water percolation than that of clay soils and support more drought tolerant plant species such as conifers. Clay soils support plants that can handle periodic inundation such as alders and cottonwoods. Shallow soils (gravel within a foot of surface) are an indicator to plant species such as grasses and forbs that potential may assist with development of deeper soils.

2.1.2.1 Soil Characteristics

Local USDA soil surveys for Jackson, Josephine, and Curry County can be reviewed during pre-site evaluation. In addition, a lot of the information is also available in GIS or local reports. If soil conditions such as shallow soils (lithic) or a Bx soil horizon (soil has a hardpan or fragipan) are noted in the survey, planting sites should reevaluated or contingencies should be made to amend the soil or bring in topsoil. Additionally due to high soil variability within riparian areas, individual soil observations are taken to allow for further assessment of the soil types and conditions.

2.1.2.2 Problematic Soil Conditions

In some cases, urban soils may have an upper soil layer devoid of organic material and contain mixtures of backfill soils, construction debris, and other non-indigenous soil compositions that are devoid of nutrients. Soil aeration and compost application may help remedy soil problems and is considered for particular sites. Additionally, soils that have been compacted due to livestock grazing or heavy equipment traffic can develop a relatively impermeable compact layer that restricts water movement and root development.

Figure 2-2: Potential planting area with compact soils.

2.1.3 Topographic Position and Aspect

Topographic position affects soil depth, profile development, and the texture and structure of the surface soil and subsoil. This, in turn, influences the composition, development and productivity of the forest.

The topography of riparian areas within the Valley are generally at the low position on a slope. At this position, trees will likely be sheltered from high winds and have access to more soil moisture. In addition, riparian areas that have moderate slope (steepness) are usually more productive than flat, level areas (USDA, 1998). For the Planting Program slope was evaluated for all sites during pre-planting surveys using the following classifications:

A- Nearly level, level – 0-2 percent slope
B- Gradual sloping- 3 to 10 percent
C- Moderately steep- 11 to 50 percent
D- Steep- 51 to 100 percent

Site aspect influences the amount of sunlight and moisture sites receive. South-facing slopes are hotter and drier because they receive more sun. North slopes receive less sunlight and are correspondingly cooler and moisture than southern slopes.

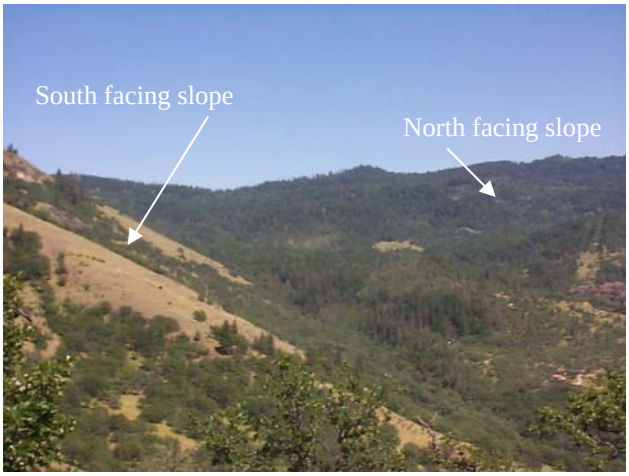

Figure 2-3: Vegetation differences between south facing and north facing slopes.

2.1.4 Other Factors

2.1.4.1 Flooding Potential

The frequency of flooding is evaluated at each site noting the presence of high watermarks, drift lines, sediment deposition, bankfull depths, and FEMA floodplain maps. Flooding encourages deep rooting by trees and reduces the necessity for long-term irrigation. In flood prone areas plants that can tolerate inundation are selected such as alders, dogwoods, cottonwoods and willows. A site that is infrequently flooded will accommodate different plant species, such as elderberry and conifers, and may require more irrigation.

Figure 2-4: Bear Creek in Central Point during the February 2004 storm event.

2.2 Irrigation Needs

Previous studies have shown that watering for the first few years following planting increases the survival rates dramatically. The amount and frequency of irrigation for the planting sites is evaluated with consideration site soil conditions, topographic position, depth to water table and existing vegetation. Additionally, type of irrigation (drip system, on-site holding tank and manually watering) is evaluated during the pre-site characterization to assess the feasibility of each type of method. It is recommended that where possible, the irrigation system be installed before planting is done. This is especially critical when planting in the spring. If establishing an irrigation system is not possible, there are alternatives that can be used to help the plants survive. Species can be planted in the fall/winter to allow for the plants to root and get partially established before the dry weather. In addition, watering can be done with volunteers or contractors using buckets, pumps, or water storage tanks.

2.3 Accessibility

All sites are evaluated for accessibility issues prior to selection of the site for planting. Accesibility factors into the timelines for planting, since sites that are easily accessible and in public ownership or locally supported are easier to complete. Other sites may take longer to develop landowner agreements and other items needed to complete the planting. In the Bear Creek Watershed, a large portion of the riparian area for Bear Creek are located along the Bear Creek Greenway trail, which runs from Central Point to Ashland. In addition to recreationists, transients use the trail and often camp nearby. Before planting areas along the trail, locations were evaluated for transient use and potential safety issues.

Other factors evaluated during the site characterization survey include accessibility for vehicle, equipment, material delivery and volunteer parking and location of utility lines.