

Appendix C. Aerial Photo-Based Riparian Area Analysis

APPENDIX C. AERIAL PHOTO-BASED RIPARIAN AREA ANALYSIS

The following riparian area assessment was conducted according to protocols which are appropriate from a regulatory stand point. The methods are used by US Forest Service and Oregon Department of forestry. The methods use the average tree height to define the riparian area width. These methods provide a rough estimate and assessment of the riparian areas. While this has value and merit to serve as a preliminary look, it does not address the more specific needs of the land manager or riparian restoration specialist. Other limitations of this analysis are as follows:

- Artificially establishes width of riparian zone, which naturally fluctuates a high degree from the assumed 75 feet width.
- Over- or underestimates the actual acreage of the natural riparian area. This inaccuracy makes it impossible to compare acreage of riparian areas in different reaches and present a meaningful result.
- Misclassifies the vegetation classes for the riparian area. The vegetation classes of the natural riparian area should be wetland plant communities. Instead by setting an artificial boundary, many upland plant communities have been erroneously included in the vegetation classes for the riparian area. For example, conifers such as ponderosa pine are upland species, not wetland species.

A land manager or restoration specialist will want to look at the riparian areas in more detail on a site specific basis prior to making management or restoration decisions. More appropriate methods for conducting site specific analysis are addressed in Chapter 7 Riparian Areas.

The riparian zone refers to the area adjacent to the streambank where vegetation transitions from water-dependent species to plants that can thrive in drier upslope conditions. Riparian zones link uplands to the stream. They provide an array of watershed functions and influence virtually all aspects of water quality and in-stream habitat condition. Thus, the importance of the riparian zone far exceeds its spatial extent. This narrow zone of vegetation that occurs along the stream contributes much of the large woody debris that provides stream channel structure, controls bank erosion, shades the stream to maintain cool water temperatures, and generally provides for higher species diversity than any other habitat type. (Gregory et al. 1991)

Riparian vegetation was classified by E&S Environmental (E&S) from 1-meter digital aerial color photographs taken during the summer of 2005 (ODSL 2005). E&S analyzed perennial streams from the USFS 1:100,000 streams layer using the geographic information system (GIS). Vegetation type