

## Appendix D—Description of the Riparian Protection Zone Strategy (Proposed Action)

Four biophysical principles underlie the development of any riparian/aquatic protection strategy. These are: 1) a stream requires predictable and near-natural energy and nutrient inputs; 2) many plant and animal communities rely on streamside forests and vegetation; 3) small streams are generally more affected by hill-slope activities than are larger streams; and 4) as adjacent slopes become steeper, the likelihood of disturbance resulting in discernable in-stream effects increases. (Quigley and Arbelbide, 1997).

Proposed fuels treatments will incorporate **Riparian Protection Zones (RPZs)** designed to protect specific key ecological functions of these areas. These are **not** necessarily no-treatment zones. Rather, they are areas where riparian resources and key functions receive primary management emphasis and design features must be applied to protect the key ecological functions. The key functions to be protected are:

- (1) **water quality**, to a degree that provides for stable and productive riparian and aquatic ecosystems;
- (2) **stream channel integrity**, channel processes, and the sediment regime (including the elements of timing, volume, and character of sediment input and transport) under which the riparian and aquatic ecosystems developed;
- (3) **instream flows** to support health riparian and aquatic habitats, the stability and effective function of stream channels, and the ability to route flood discharges;
- (4) **natural timing and variability** of the water table elevation in meadows and wetlands;
- (5) **diversity and productivity** of native and desired non-native plant communities in riparian zones.

Because stream types and riparian function are extremely variable across the planning area, an RPZ based on a minimum linear distance will not be applicable to every project. Thus, the width necessary to protect stream and riparian area structure and function should be determined from watershed and site-specific analysis.

Each project developed under this Environmental Assessment will incorporate specific design features to maintain the key ecological functions of the RPZs.

Project plans and Environmental Assessment should specifically document the analysis process used to determine final dimensions of RPZs. Recommended RPZ boundaries for projects carried out under this EA are described below. Based on a substantial body of theoretical and applied science, projects implemented using RPZ boundaries as

designated below will be much less likely to adversely affect aquatic species and their habitats. These should be considered default boundaries until final boundaries are determined by watershed or site-specific analysis. Final boundaries may be narrower or wider, depending on local conditions and results of the project specific analysis.

### Interim Riparian Protection Zones-Forested Areas

Interim boundaries of the RPZs within forested zones of the planning area will be:

- (1) Streams, ponds, lakes containing Special Status Fish Species: two site-potential tree heights.
- (2) Other fishbearing streams: one site-potential tree height.
- (3) Ponds, lakes, and wetlands greater than 1 acre: the interim RPZ consists of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of the seasonally saturated soil, or to the extent of moderately and highly unstable areas, or to a distance equal to one site-potential tree height (whichever is greatest)

The interim boundaries for RPZs within forested zones of the planning area are based on site-potential tree height. The maximum height of dominant trees is one of the most significant factors influencing the extent of the streamside area directly affecting channel and aquatic ecosystem function. For instance, tall trees potentially contribute shade, particulate organic matter, and large woody debris at greater distances from streams than do short trees. Areas capable of producing large tall trees thus possess wider functional riparian zones than areas in which trees do not grow as large. For this reason, FEMAT (1993), PACFISH (1995), and INFISH (1995) used the height of dominant late-successional tree species that would naturally grow in a particular riparian zone as the basis for reconnecting streamside buffers needed to safeguard ecological functions instead of a fixed “one-size-fits-all” linear distance. Use of a fixed distance from the streambank to the outer margin of the buffer strip would not allow for differences in potential tree growth between regions.

### Interim Riparian Protection Zones-Non-Forested Areas

In non-forested rangeland ecosystems, the interim RPZ would consist of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent

of the seasonally saturated soil, or to the extent of moderately and highly unstable areas, or (in segments where trees are present) to a distance equal to one site-potential tree height (whichever is greatest).

### **Design Features for Isolated Populations**

The EA identified particular risk from wildfire and fuels management projects to isolated, depressed populations in degraded habitats without access to local or regional refugia (e.g. westslope cutthroat trout). All projects carried out under

this EA will incorporate the following to ensure that potential effects to these species are reduced to non-significant levels:

- (1) areas proposed for fuels reduction projects will be surveyed for the presence of these populations
- (2) During project-specific NEPA analysis, project planners will include a specific assessment for these species. The assessment will specifically identify potential sources or risk and the specific design features incorporated in the project to avoid adverse effects or to mitigate them to the insignificant level.