

Biologically Necessary Riparian Buffer Widths on the Elliott State Forest

Executive Summary

To protect federal Endangered Species Act-listed Oregon Coast coho salmon (and other salmonid species) riparian (streamside) buffers must be of adequate size to shade the stream filter sediment, contribute large woody debris and perform other necessary biological functions. The science is settled that a minimum buffer of at least one site-potential tree-height on each side of the fish-bearing stream is necessary. For the highly productive Elliott State Forest one site-potential tree-height is ~200 feet.

Introduction

To maximize the production of fish, water quality and water quality, the best streamside buffer is from ridge to ridge (i.e. an entire watershed). Where such is not possible, the streamside buffer must be of sufficient width to provide adequate shade to the stream, filter sediment, contribute large wood and perform other necessary biological functions.

Site Potential Tree Height on the Elliott State Forest

Foresters measure “site index” for Douglas-fir trees as the height of the tallest trees at 100 years of age. However, Douglas-fir trees continue to grow in height for far longer than that. A stand of trees along streams not only provide shade, but also large wood to the stream, which is necessary for it proper hydrological and biological function, including habitat for fish species. "A site-potential tree height [SPTH] is the average maximum height of the tallest dominant tree (200 years) for a given site class." (USDI Bureau of Land Management 2007).

The Elliott State Forest lies within the lower Umpqua, Millicoma, and Tenmile Lake watersheds.

As part of implementing the Northwest Forest Plan, the Forest Service and the Bureau of Land Management have done numerous watershed analyses. Here are some excerpts from such document prepared for watersheds in the vicinity of the Elliott State Forest regard SPTHs:

- "For this [Upper Middle Fork Coquille] watershed analysis, Riparian Reserve widths were developed using a site potential tree height of 180 feet." (USDI BLM 1999) This watershed is ~15 miles south of the ESF.
- "The riparian buffer/seral stage map [for the South Fork Coquille Watershed] was constructed in ARC/INFO GIS at the Siskiyou National Forest headquarters. It was based on a 200' tree-height for the Powers Ranger District" (USDA Forest Service 1995). This watershed is ~40 miles south of the ESF.
- "The site-potential tree height of 200 feet was determined from 24 district inventory plots within the Elk Creek watershed (~15 miles east of the ESF). (USDI Bureau of Land Management 2004).

What Do Others Do in Western Oregon?

U.S. Forest Service

Operating under the 1995 Northwest Forest Plan, the Forest Service has designated “riparian reserves” of *two* SPTH on fish-bearing streams.

Bureau of Land Management

Until mid-2016, the Bureau of Land Management's riparian reserves were the same as the Forest Service's as both operated under the Northwest Forest Plan. BLM's new riparian reserve width for fish-bearing streams is one SPTH. As three-quarters of BLM lands in western Oregon are in "reserves," (either riparian reserves of late-successional reserves), the effective riparian buffer is often larger than one SPTH.

Oregon Department of Forestry

The current administrative rules for forest practices on private lands in Oregon require "riparian management area" of, depending on the kind of stream, 20-100 feet. (OAR 629-635-0310). These administrative rules are not based on any credible science.

National Marine Fisheries Service

The National Marine Fisheries Service, when approving habitat conservation plans (HCP) for ESA-protected species, generally requires one SPTH riparian buffer.

When the Oregon Department of Forestry and National Marine Fisheries Service couldn't agree on—among other things—the width of a stream buffer to get a Habitat Management Plan (ca. 2010), ODF asked an "Independent Multidisciplinary Science Team (IMST) to examine the matter (report attached), IMST said, to ensure "sufficient shade" (to keep water temperatures in check), a "150-foot unmanaged buffer was required" [emphasis added]. A properly functioning riparian buffer also contributes large wood to the stream, filter sediment and provide other necessary biological and hydrological functions besides shade; hence it needs to be larger.

Conclusion

It is critical that any conservation plan for the Elliott State Forest provide for a stream protection area at a minimum of at least one site-potential tree-height to both comply the federal Endangered Species Act and to provide for adequate biological and hydrological function of streams.

Sources

USDI Bureau of Land Management. 1999. Upper Middle Fork Coquille Watershed Analysis, Roseburg District BLM.

USDI Bureau of Land Management. 2004. Elk Creek/Umpqua River Watershed Analysis. Roseburg District BLM.

USDI Bureau of Land Management. 2007. Watershed Analysis: Middle Fork Coquille Analytical Watershed. Coos Bay District BLM.

USDA Forest Service. 1995. South Fork Coquille Watershed Analysis (Iteration 1.0) Siskiyou National Forest.

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