

**A Review of Current Science Concerning the Ecology and Management
of Forested, Montane Stream Ecosystems**

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Abstract:

The Aquatic Conservation Strategy (ACS) of the Northwest Forest Plan represented a major shift in how aquatic ecosystems were managed on federal lands within the range of the northern spotted owl (*Strix occidentalis*). The ACS combined ecosystem and landscape perspectives to forge a management strategy that was applied over a broad heterogeneous area. This focus was deemed necessary to aid in recovering freshwater habitats of population segments of Pacific salmon and trout (*Oncorhynchus* spp.) that were listed or expected to be listed under the Endangered Species Act. Since the ACS was implemented in 1994, much new scientific information on aquatic ecosystems has emerged. This information was summarized in two reviews (Reeves 2003; Reeves 2006). Here, we focus on recent peer-reviewed literature concerning four topics: 1) the role of disturbance and dynamics in stream ecosystems, 2) riparian functions for the middle and lower portions of stream networks, 3) functions of headwater channels, and 4) analysis tools to help identify areas where land management may pose risks to stream ecosystems.