

Status of Native Fishes in the Western United States and Issues for Fire and Fuels Management

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Abstract

Conservation of native fishes and changing patterns in wildfire and fuels are defining challenges for managers of forested landscapes in the western United States. Many species and populations of native fishes have declined in recorded history and some now occur as isolated remnants of what once were larger more complex systems. Land management activities have been viewed as one cause of this problem. Fires also can have substantial effects on streams and riparian systems and may threaten the persistence of some populations of fish, particularly those that are small and isolated. Despite that, major new efforts to actively manage fires and fuels in forests throughout the region may be perceived as a threat rather than a benefit to conservation of native fishes and their habitats. The management of terrestrial and aquatic resources has often been contentious, divided among a variety of agencies with different goals and mandates. Management of forests, for example, has generally been viewed as an impact on aquatic systems. Implementation of the management-regulatory process has reinforced a uniform approach to mitigate the threats to aquatic species and habitats that may be influenced by management activities. The problems and opportunities, however, are not the same across the landscapes of interest. Attempts to streamline the regulatory process often search for generalized solutions that may oversimplify the complexity of natural systems. Significant questions regarding the influence of fire on aquatic ecosystems, changing fire regimes, and the effects of fire-related management remain unresolved and contribute to the uncertainty. We argue that management of forests and fishes can be viewed as part of the same problem, that of conservation and restoration of the natural processes that create diverse and productive ecosystems. We suggest that progress toward more integrated management of forests and native fishes will require at least three steps: 1) better integration and development of a common conceptual foundation and ecological goals; 2) attention to landscape and ecological context; and 3) recognition of uncertainty.

Key Words: Wildfire; fire and fuels management; native fish; conservation; restoration