Use of Wood in Stream Restoration Projects

Presented by

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Streambank stabilization, as well as some aquatic habitat enhancement projects draw from a wide variety of practices, building materials and analogs observed in the field. Practices under the broad categories of revetments, hydraulic structures and soil bioengineering utilize pieces of wood to provide stability, changes in instream hydraulics and provide habitat for aquatic species.

Utilizing wood in streambank stabilization or habitat improvement projects is not new. SCS engineering handbooks from the 1940s and 50s show the use of logs, stumps and whole trees as an element of some practices used around streams. Research in the Pacific Northwest has shown significant fisheries use around practices that incorporate wood into the installation, compared to both eroding streambanks, and practices with rock structures but no wood.

Planning considerations when using logs or whole trees in NRCS projects include:

1. Context and extent: how much wood along with other building materials, like rock and living plants, has a high chance of success and are in balance with the upstream reaches and watershed condition, as well as compatibility with stream reaches below?
2. Successful use of wood as a foundation for a bioengineering project requires one set of planning criteria that is very different from incorporating whole logs at the toe of a riprap slope. A constructed hard point in the streambank made entirely of trees and other woody material requires an entirely different set of planning questions.
3. Use and extent of wood is very often a dual investigation into the size and durability of materials available coupled with an analysis of the impact wood will have on hydraulics, sediment transport, resulting additional wood that may collect on the project and the impact of new sediment deposits downstream.

Attendees of the proposed one hour, web-based lecture will gain appreciation for the planning questions that need answered when considering wood as an integral part of a stream project.
The availability of wood materials and proposed stability of different wood configurations and an awareness of analytical techniques to determine the impact of wood on project risk will be discussed.

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