

Restoring Stream Corridors

Interest in restoring stream corridors is expanding nationally and internationally. More and more news and feature stories, case studies, and published papers are discussing stream corridors as critical ecosystems for thousands of plants and animals—supporting interdependent uses and values.

The 1992 *National Water Quality Inventory*, which covered about 18 percent of U.S. rivers—nearly 643,000 miles of our waterways—stated that only 56 percent supported multiple uses. Such uses include drinking water, fish and wildlife habitat, recreation, and agriculture, as well as flood prevention and erosion control.

In the remaining 44 percent of stream miles inventoried, sedimentation and excess nutrients were seen as the most significant causes of degradation. Sediment problems resulting from soil eroding from watersheds and streambanks do irreparable damage. The sediment clogs streams and ditches; bottom lands become flooded; and, as water quality declines, fish and wildlife habitats degrade or disappear.

In January 1995, representatives of the U.S. Department of Agriculture, U.S. Department of the Interior (USDI), U.S. Environmental Protection Agency (EPA), and U.S. Department of Defense began a landmark cooperative effort. Its goal was to create a common reference document for federal agencies, interdisciplinary teams, and others to use in restoring the nation's stream corridors.

Sixteen federal agencies are now, in fact, collaborating and pooling their resources to produce a handbook titled *Stream Corridor Restoration: Principles, Processes, and Practices*.

This is not intended to be a policy document. Rather, it combines generally accepted principles of stream corridor restoration into a single source, with guidelines for planning and design. It contains field-tested methods and approaches that emphasize the benefits of least-intrusive solutions to restoring stream corridors that are both ecologically derived and self-sustaining.

National geologist Jerry M. Bernard and national landscape architect Ronald W. Tuttle, who are with USDA's Natural Resources Conservation Service (NRCS) in Washington, D.C., are leading the interagency team in this effort.

In developing the publication, they worked closely with experts from several USDA agencies (the NRCS; Agricultural Research Service; Cooperative State Research, Education, and Extension Service; and Forest Service) and several USDI agencies (the Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, National Park Service, and U.S. Geological Survey), as well as with the EPA, Tennessee Valley Authority, U.S. Department of Housing and Urban Development, U.S. Army Corps of Engineers, National Oceanic and Atmospheric Administration, and Federal Emergency Management Agency.

Nongovernment experts from universities, consulting companies, and other organizations were also contracted to write portions of the stream corridor restoration document.

Use of the techniques described in the handbook can help improve many of the nation's million miles of rivers that are currently estimated to be degraded due to erosion, sedimentation, or excess nutrients. Following principles described in the handbook, farmers and land-use managers can increase streams' water quality and

aesthetic value and maintain agricultural sustainability.

Prescribed restoration activities can range from simple management actions like planting grass hedges at the edge of fields to filter excess nutrients and sediment from runoff water to complex problem solving, such as was done in the Demonstration Erosion Control project.

This project is an ongoing congressionally mandated collaborative effort to promote the use of environmentally sound solutions to correct problems caused by flooding, erosion, and sedimentation within the Yazoo River basin in Mississippi—one of the most channel-erosion-prone areas in the United States. [See "Streams of Conscientiousness," *Agricultural Research*, October 1993, pp. 12-13.]

The 700-page handbook will be available in March 1998 in two forms: as a printed, loose-leaf publication that can be easily updated and in an electronic file on the Internet that will provide wider access and facilitate rapid updates and add-ons, as needed.

For more information, access the Stream Corridor Restoration Handbook homepage at http://www.usda.gov/stream_restoration/

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