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ECOSYSTEM SERVICES RESEARCH PROGRAM

# ECOSYSTEM SERVICES RESEARCH IN COMMUNITIES WILLAMETTE RIVER BASIN STUDY

## Issue:

EPA's Ecosystem Services Research Program (ESRP) in the Office of Research and Development (ORD) is focused on the study of ecosystem services and the benefits to human well-being provided by ecological systems.

As part of this research effort, the Willamette River Basin project will identify and characterize the ecosystem services in the area. The river basin, located in Oregon between the Coast Range and the Cascase Range, is highly agricultural and has a growing population. There is considerable local interest in sustainable economic growth.

## Science Objective:

The research in the Willamette River Basin will strive to quantify the area's ecosystem services and understand the effect man-made stressors have on those services. Understanding these interactions will help local decision makers understand the ecological costs and benefits of existing and proposed land management and growth policies. The study will focus particularly on maintaining and improving river conditions with targeted work on the area's riparian forests.

The goals of the initiative are to:

- Identify critical knowledge gaps in the ecological processes underlying ecosystem services
- Map ecosystem services in the river basin based on current conditions and available data
- Quantify the response of ecosystem services to current and projected conditions and stressors
- Quantify linkages and trade-offs among bundles of ecosystem services in response to land use, climate and other variables
- Model the future responses of ecosystem services to probable future conditions
- Determine the value of changes in ecosystem services affected by changes in Nr loads


## Application and Impact:

EPA scientists will develop ecosystem services maps, models, and decision support tools to help decision makers in the Willamette River Basin apply the information and methods developed by this project. Using these tools, decision

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makers can implement proactive policy and management decisions over time and at multiple scales. These decisions will help ensure human well-being by conserving and enhancing ecosystem services.

The most direct client will be the U.S. EPA Region 10 office in Seattle, Washington, which has regulatory authority in the Willamette River Basin. The research also will be integrated with other community-based ecosystems research being conducted in order to create a transferable suite of methods and tools for evaluating ecosystem services. This research will be applicable across other EPA regions and national program offices.

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