National Ecosystem Services Partnership

FEDERAL RESOURCE MANAGEMENT AND ECOSYSTEM SERVICES GUIDEBOOK

Federal Agency Explorations and Applications: Case 10 (U.S. Forest Service)

# Integrating Ecosystem Services into U.S. Forest Service Programs and Operations

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**How to cite:**
Deal, R., E. Weidner, and N. Smith. 2014. "Integrating Ecosystem Services into U.S. Forest Service Programs and Operations." In *Federal Resource Management and Ecosystem Services Guidebook.* Durham: National Ecosystem Services Partnership, Duke University, www.nespguidebook.com.

## FEDERAL RESOURCE MANAGEMENT AND ECOSYSTEM SERVICES

### Institutional Partners

National Oceanic and Atmospheric Administration
U.S Army Corps of Engineers
U.S. Bureau of Land Management
U.S. Department of Agriculture
U.S. Department of the Interior
U.S. Environmental Protection Agency
U.S. Forest Service
U.S. Geological Survey

Clark University
Duke University
The University of Maryland Center for Environmental Science
The University of San Francisco

The National Center for Ecological Synthesis
The National Socio-Environmental Synthesis Center

Defenders of Wildlife
NatureServe
Resources for the Future
The Nature Conservancy

Spatial Informatics Group

## Funding Sources

### Primary Funding Sources

Gordon and Betty Moore Foundation
Duke University
National Center for Ecological Analysis and Synthesis
National Socio-Environmental Synthesis Center
USDA Office of Environmental Markets
And significant in-kind support from many of the institutional partners listed above

### Seed Funding Sources

American Forest Foundation, Defenders of Wildlife, National Oceanic and Atmospheric Administration, Rights and Resources Initiative, Resources for the Future, U.S. Bureau of Land Management, U.S. Department of Agriculture Office of Environmental Markets, U.S. Environmental Protection Agency, U.S. Forest Service, U.S. Geological Survey

## About This Document

This case is part of the Federal Resource Management and Ecosystem Services (FRMES) Guidebook created by the National Ecosystem Services Partnership (NESP). NESP, housed at the Nicholas Institute for Environmental Policy Solutions, seeks to enhance collaboration within the ecosystem services community and to strengthen coordination of policy implementation and research at the national level. The FRMES Guidebook represents a collaborative effort by federal agencies and outside experts to develop a credible and feasible approach to incorporating ecosystem services into the decision-making processes of federal agencies.

Cases are written and approved by the author(s)' agency, but they have not been peer reviewed. They describe the decision-making context within which that agency is considering or testing an ecosystem services management framework, and they present approaches or innovations that the agency is using to incorporate ecosystem services into its planning and decision-making processes. Cases informed development of the FRMES Guidebook and could be of value to others embarking on ecosystem services planning and management efforts.

To read other federal agency explorations and applications of an ecosystem services management framework, visit www.nespguidebook.com.

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# Integrating Ecosystem Services into U.S. Forest Service Programs and Operations

## Introduction and Decision Context

The concept of ecosystem services has emerged to describe the broad suite of goods and services that people receive from nature. It highlights the importance of sustainably managing public and private lands to ensure that these benefits continue into the future and is closely aligned with the U.S. Forest Service (USFS) mission to "sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations." In response to growing interest in ecosystem services, the USFS is identifying needs and opportunities to incorporate ecosystem services concepts into USFS programs and activities. USFS employees are applying these concepts to forest planning and management, contributing to the development of markets and payment incentives for private forest conservation and restoration, developing innovative all-lands models for collaborative forest management across ownerships, and advancing the field of ecosystem services research.

## Existing Resources and Organizational Capacity

The ecosystem services concept is not entirely new in USFS programs and operations. The Ecosystem Services and Markets program area was first established in the State & Private Forestry (S&PF) deputy area in 2006, and key ecosystem services activities subsequently emerged within the Research and Development (R&D) and National Forest System (NFS) deputy areas. Research scientists are assessing key production functions and research methodologies on market and nonmarket values of public and private forestlands. Although the NFS has no staff group specifically dedicated to ecosystem services topics, it has been a leader in various ecosystem services efforts, most notably in pioneering watershed investment partnerships and in including ecosystem services language in the 2012 USFS Planning Rule, which marks the first time ecosystem services has been codified in USFS policy.[1] The rule directly calls for addressing ecosystem services in forest plans, assessments, and project implementation. A formal process for applying the ecosystem services concept in forest planning is being developed by the USFS Ecosystem Services Evaluation Framework (ESEF) team.

In late May 2012, a cross-deputy USFS community of ecosystem services practitioners held its first-ever Ecosystem Services Champions Forum to begin a dialogue on strategic direction for the agency around ecosystem services. In January 2013, the Associate Deputy Chiefs (ADC) signed a charter to establish the National Ecosystem Services Strategy Team (NESST). At the team's core are scientists from the R&D deputy area, program specialists from the S&PF deputy area, and NFS planners and economists. The purpose of NESST is "to collaboratively develop national strategy and policy around ecosystem services and integrate it into Forest Service programs and operations." The team represents the agency's first effort to look broadly across all deputy areas and comprehensively assess opportunities to incorporate ecosystem services approaches into USFS programs and activities.

## National Ecosystem Services Strategy Team (NESST) Overview and Objectives

NESST has several objectives. One is to develop a shared language and understanding of ecosystem services in order to clearly articulate the ecosystem services concept both internally for the agency and externally with USFS stakeholders. Another objective is to assess opportunities to integrate ecosystem services approaches into USFS programs and activities through investigation of legal authorities, current guidance, best management practices, managerial tools, and needs and capacity requirements. An interim report will describe this work, but a central goal of NESST is to collaboratively define

[1] See http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5362536.pdf.

ecosystem services policy and institutionalize it through publication in the *U.S. Forest Service Manual,* the *U.S. Forest Service Handbook,* or both.

## Identifying Opportunities

NESST has developed an inventory of USFS programs and activities with potential for integrating an ecosystem services approach into operations. These opportunities fall into three categories: analysis and decision making, measurement and reporting, and investment in ecosystem services partnerships.

The USFS is extensively involved in decision making, funding allocations, and priority setting for both public and private forests. Ecosystem services concepts can support all of these activities. The 2012 Planning Rule mandates that forest plans "guide management of NFS lands so that they … have the capacity to provide people and communities with ecosystem services and multiple uses that provide a range of social, economic, and ecological benefits for the present and into the future" (77 FR 21162, Section 219.1). This directive is being implemented by a number of "early adopter" forests. Other efforts to incorporate ecosystem services into agency decision making include consideration of the services in project-level National Environmental Policy Act analyses and damage assessments. The USFS is also helping states address ecosystem services flows, benefits, or values in statewide forest action plans.

Rather than focusing on outputs (e.g., acres treated), the traditional USFS performance metric, ecosystem services measurement and reporting focuses on outcomes, impacts, and benefits. The agency is using these types of metrics in accomplishment and performance reporting. For example, in November 2012, the USFS Sustainable Landscape Board of Directors was tasked to work with the Strategic Performance, Budget, and Analysis Office to improve agency-wide performance measures to better capture the outcomes and impacts of agency activities. The agency is also supportive of ecosystem services metrics in measuring environmental credits in ecosystem service markets. It has been involved with the Counting on the Environment project that developed an integrated, functions-based protocol for calculating ecosystem services provided by restoration of wetlands, riparian areas, salmonid habitat, and prairie.[2] Finalized in 2009, this protocol is being used as a national model for ecosystem services markets.

The USFS has been increasingly involved in ecosystem services partnerships. In the watershed investment arena, it collaborated with the Denver Water Board to cooperatively commit $32 million for improved forest restoration work in Denver's municipal watershed to avoid damage to water quality caused by large wildfires. In November 2012, the city of Flagstaff, Arizona, passed a bond measure committing $10 million to the USFS for improved forest restoration to reduce risk of flooding in Flagstaff.

The USFS is exploring other innovative financial partnerships with recipients of ecosystem services benefits such as electric utilities interested in contributing to fire risk reduction in areas that may threaten power lines. Other ecosystem services investment opportunities include helping incentivize private landowners to provide ecosystem service benefits to the public (through the Cooperative Forestry Assistance Act programs, environmental markets, and other initiatives), and mitigating environmental damages to national forests.[3] One example is a collaborative effort with the Eugene Water and Electric Board to design a voluntary payment incentive program that protects high-quality riparian areas on private lands to benefit Eugene, Oregon's drinking water supply.

[2] See http://willamettepartnership.org/ongoing-projects-and-activities/wp_nrcs_project2pager-11-06-08-_2_.pdf.
[3] See http://www.house.gov/legcoun/Comps/Cooperative%20Forestry%20Assistance%20Act%20Of%201978.pdf.

## Next Steps

The USFS has already taken advantage of some opportunities to take an ecosystem services approach in its programs and activities—the USFS Planning Rule is a good example. NESST identified five focus areas for taking advantage of potential additional opportunities:

- Policy Development: Develop broad national policy to support an ecosystem services approach. Policy could clarify USFS roles, requirements, and legal sideboards for some programs and activities.
- Guidance: Develop a detailed process for applying ecosystem services policy in decision making. The ESEF has developed ecosystem services guidance for one existing agency policy.
- Data, Tools, and Research Methodologies: Develop an effective approach to translate biophysical outputs and spatial units of management activity into ecosystem services metrics. USFS Research & Development is beginning to develop some of these metrics, methodologies, and valuation techniques, as are USFS partners and academic institutions, but many gaps remain, particularly with regard to implementation.
- Capacity: Build support for ecosystem services approaches throughout the USFS by developing (1) one shared definition of ecosystem services; (2) training, internal communications, and recommendations for implementing ecosystem services into agency programs; and (3) articulating the concept's relevance to the agency's mission.
- Communications and Collaborations: Develop effective communication on the ecosystem services concept with the public to better describe how forests provide important benefits, including non-market (cultural, recreational, spiritual) values.

NESST is developing a cohesive vision for how ecosystem services can be integrated into USFS programs and activities. The agency has already succeeded at several efforts in this area. Most notably, the ESEF team was formed to facilitate implementation of the ecosystem services provisions of the 2012 Planning Rule. Similar groups are forming to focus on other opportunities for incorporating ecosystem services into the national Inventory, Monitoring, and Assessment framework and into restructuring of national performance measures. NESST provides broad national-scale direction for the agency but will depend on examples of ecosystem services approaches that are implemented at the project and forest scale. These efforts can leverage partnerships with non-governmental organizations and private forest landowners and managers. These groups can help the agency fully incorporate ecosystem services into decision making, measuring, and reporting, and can support and catalyze effective investment in ecosystem services.

*Cover photo: U.S. Department of Agriculture*


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## About the National Ecosystem Services Partnership

The National Ecosystem Services Partnership (NESP) engages both public and private individuals and organizations to enhance collaboration within the ecosystem services community and to strengthen coordination of policy and market implementation and research at the national level. The partnership is an initiative of Duke University's Nicholas Institute for Environmental Policy Solutions and was developed with support from the U.S. Environmental Protection Agency and with donations of expertise and time from many public and private institutions. The partnership is led by Lydia Olander, director of the Ecosystem Services Program at the Nicholas Institute, and draws on the expertise of federal agency staff, academics, NGO leaders, and ecosystem services management practitioners.

## About the Nicholas Institute for Environmental Policy Solutions

Established in 2005, the Nicholas Institute for Environmental Policy Solutions at Duke University improves environmental policymaking worldwide through objective, fact-based research in the areas of climate change, the economics of limiting carbon pollution, emerging environmental markets, oceans governance and coastal management, and freshwater management. The Nicholas Institute is part of Duke University and its wider community of world-class scholars. This unique resource allows the Nicholas Institute's team of economists, scientists, lawyers, and policy experts not only to deliver timely, credible analyses to a wide variety of decision makers, but also to convene decision makers to reach a shared understanding of this century's most pressing environmental problems.

For more information about the
*Federal Resources Management and Ecosystem Services Guidebook,*
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