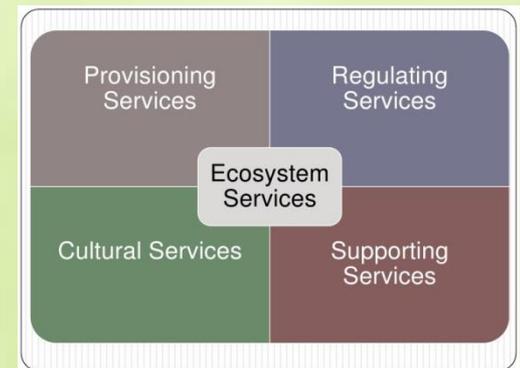


Update on Ecosystem Services in the Federal Government

Kristin E. Skrabis
Office of Policy Analysis
U.S. Department of the Interior
April 30, 2014



Summary

- Ecosystem Services
- Report to the President
- Principles and Guidelines
- Partnerships and Projects
- DOI Updates
- Additional Sources of Federal Information
- Panel Introductions

Ecosystem Services (ES)

Provisioning Services

Products obtained from ecosystems

- Food
- Fresh water
- Fuelwood
- Fiber
- Biochemicals
- Genetic resources

Regulating Services

Benefits obtained from regulation of ecosystem processes

- Climate regulation
- Disease regulation
- Water regulation
- Water purification
- Pollination

Cultural Services

Nonmaterial benefits obtained from ecosystems

- Spiritual and religious
- Recreation and ecotourism
- Aesthetic
- Inspirational
- Educational
- Sense of place
- Cultural heritage

Supporting Services

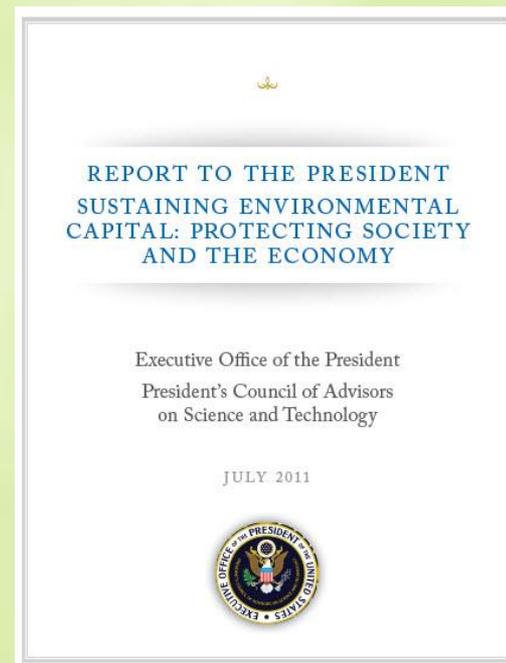
Services necessary for the production of all other ecosystem services

- Soil formation
- Nutrient cycling
- Primary production

President's Council of Advisors on Science and Technology (PCAST) Report

Central Message: Economic and environmental well-being are both indispensable; government must not fail to address threats to both from the degradation of environmental capital. The Nation lacks a careful accounting of the services provided by ecosystems and the condition of many environments that support these ecosystems.

Key Recommendation: *Federal agencies with responsibilities relating to ecosystems and their services (e.g., EPA, NOAA, DOI, USDA) should be tasked with improving their capabilities to develop valuations for the ecosystem services affected by their decision-making and factoring the results into analyses that inform their major planning and management decisions (p. iii).*



Updated Principles and Guidelines for Water and Land Related Resources Implementation Studies (P&G)

To help promote consistency across federal agencies in water resource planning and development, the Administration developed a three-tiered approach to updating the P&G:

1. Principles & Requirements (released for public comment in December 2009; finalized in March 2013) explicitly adopt an ecosystem services framework.
2. Interagency Guidelines (draft March 2013) were developed through interagency collaboration, laying out the methods for conducting implementation studies under the new Principles and Requirements.
3. Following finalization of the Interagency Guidelines, Agency-Specific Procedures will be developed to direct implementation of these Principles, Requirements and Guidelines.

For more information: Ben Simon, benjamin_simon@ios.doi.gov

<http://www.whitehouse.gov/administration/eop/ceq/initiatives/PandG>

National Ecosystem Services Partnership (NESP)



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.

For more information: [Ted Maillett, edward_maillett@fws.gov](mailto:edward_maillett@fws.gov);
[Rebecca Moore, rmoore@blm.gov](mailto:rmoore@blm.gov); [Frank Casey, ccasey@usgs.gov](mailto:ccasey@usgs.gov)

http://nicholasinstitute.duke.edu/initiatives/national-ecosystem-services-partnership#.U1bFe_nIZWY

Federal Resource Management and Ecosystem Services (FRMES)

An NESP project:

The Federal Resource Management and Ecosystem Services (FRMES) project brings together federal agencies and outside expertise to share ideas and build a consistent approach to integrating ecosystem services into federal resource management and planning processes.

Key components of FRMES include:

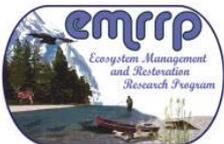
- Community of Practice – Improve cross-agency communication, advance robust ecosystem services approaches.
- Technical Working Groups – Develop scientifically robust methods, metrics, and tools for ecosystem services assessments.
- Case Examples – Study the range of decision contexts within which agencies are considering and incorporating ecosystem services and how they are operationalizing this process.
- Pilot Tests – Test potential methods and metrics across scales and decision contexts.
- Legal Context – Explore how existing legal authorities and mandates affect the way ecosystem services are incorporated into agency planning and management.

<http://nicholasinstitute.duke.edu/initiatives/national-ecosystem-services-partnership/federal-resource-management-and-ecosystem>

Army Corps of Engineers

- The Corps is actively researching the utility of incorporating ecosystem goods and services (EGS) into water resource project planning. Efforts include production of myriad publications.
- Last year (published):
 - A Technical Report summarizing the literature and the state of the science (<http://el.erdc.usace.army.mil/elpubs/pdf/trel13-17.pdf>); and
 - A policy review and analysis report (http://www.iwr.usace.army.mil/Portals/70/docs/iwrreports/EGS_Policy_Review_2013-R-07.pdf)
- This year (in draft):
 - Technical report and searchable database reviewing of available EGS assessment tools.
 - Short technical note reviewing previous efforts using EGS in Corps planning, emphasizing lessons learned and recommendations for the future.

ERDC TN-EMRRP-ER-18
July 2013



Incorporating Ecosystem Goods and Services in Environmental Planning
– Definitions, Classification and Operational Approaches

by Elizabeth Murray, Janet Cushing, Lisa Wainger, and David J. Tazik

For more information: [Elizabeth Murray, Elizabeth.O.Murray@usace.army.mil](mailto:Elizabeth.Murray@usace.army.mil)

<http://el.erdc.usace.army.mil/elpubs/pdf/er18.pdf>

NOAA's Stated Preference Study on Elwha Dam, Washington

Purpose of the project is to restore the Elwha River's lower floodplain to its natural state after the removal of two large dams by the National Park Service. NOAA is conducting an ecosystem services valuation survey to estimate recreational and passive-use values for the restored river and floodplain. The study will provide answers to the following questions:

- What is the effect on the public's welfare from dam removal and flood plain restoration?
- What is the value of preserving key endangered or threatened species?
- What are the potential changes in recreational use from river restoration?

<http://www.habitat.noaa.gov/about/habitat/ecosystemservices.html>
Sample survey instrument: http://stratusconsulting.com/wp-content/uploads/Elwha.River_.Restoration.Survey.Instrument1.pdf

DOI Updates

- **NRDA Restoration Program** has long used ES in evaluating resource-related losses from oil spills or hazardous substances and gains from relevant restoration, e.g., Palmerton Zinc settlement involved injuries caused by zinc smelter emissions to terrestrial habitat and resources that provide recreational fishing, hunting and hiking opportunities.
- **BLM** is pilot testing ES tools to improve resource planning and management, e.g., the San Pedro Watershed pilot study in Southeastern AZ/NM, where alternative tools were used to evaluate water, carbon, biodiversity, and cultural resource changes under different scenarios.
- **NPS** uses ES to protect park resources, e.g., the Greater Yellowstone study evaluated to impacts of noise, air emissions, congestion, and health and safety risks of different snowmobile management alternatives on ES.
- **The Office of Wildland Fire** incorporates ES into its models to improve fire managers' and analysts' responses to fire incidents. Examples include LANDFIRE and the Wildland Fire Decision Support systems.



DOI Updates (continued)

FWS

- FWS incorporates ES into its regulatory programs and program reviews, e.g., conservation banking.
- In April 2012, completed initial assessment of an Ecosystem Service Valuation Model -- a pilot study on four refuges to assess the ecosystem service benefits of wetlands (see: http://www.fws.gov/economics/Discussion%20Papers/USFWS_Ecosystem%20Services_Phase%20I%20Report_04-25-2012.pdf)
- Met with three select refuge managers to investigate how the consideration and adoption of an ecosystem services framework could help them improve management decisions and community outreach (forthcoming NESP project).

For more information: Ted Maillet, edward_maillett@fws.gov



DOI Updates (continued)

USGS

- Menlo Park has a grant from the CA Landscape Conservation Cooperative to analyze the impacts of climate/land use change on ecosystem services on CA rangelands.
- Fort Collins is conducting an economic analysis of the impacts on various ecosystem services in sage-grouse habitat stemming from an NRCS region-wide conservation initiative.
- The Central Everglades Planning Project team, led by the Corps and the South Florida Water Management District, partnered with Fort Collins to assess the economic value of ecosystem services that could be affected by a restoration project in Florida's central Everglades.
<https://www.fort.usgs.gov/science-tasks/2461>

For more information: Frank Casey, ccasey@usgs.gov



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December 8-11, 2014 | Washington, DC

- Call for individual abstracts starts in May
- Abstracts due July 11, 2014
- Partnered with Ecosystem Commons, providing centralized information and tools at:
<http://ecosystemcommons.org/home>
(website support from USDA, EPA, and USGS)

Green Real Estate Pro Forma Investment Modeling Tool

SERVES: Simple Effective Resource for Valuing Ecosystem Services

ARIES: Artificial Intelligence for Ecosystem Services

LandServer

The Bay Bank

Counting on the Environment - Ecosystem Credit Accounting

INVEST (Integrated Valuation of Ecosystem Services and Tradeoffs)

<http://www.conference.ifas.ufl.edu/aces/>

Additional Summary Information on ES in the Federal Government

DISCUSSION PAPER

March 2011 ■ RFF DP 11-13

Ecosystem Services: Quantification, Policy Applications, and Current Federal Capabilities

Lynn Scarlett and James Boyd

1616 P St. NW
Washington, DC 20036
202-328-5000 www.rff.org

Ecosystem Services News Digest:
<http://www.fs.fed.us/ecosystemservices/newsdigest.shtml>

EPA inventory of federal agency research on ecosystem services (2010-2012):

We used public websites, interagency dialogues, and direct phone communications to create an inventory of federal agency research that specifically addresses ecosystem services. The inventory includes programs and projects that were ongoing or completed between April 2010 and May 2012 at the following 9 federal agencies. These agencies were also the primary invitees to a series of dialogues on ecosystem services organized in 2010 by the Office of Management and Budget (OMB) and the Council on Environmental Quality (CEQ):

Department of Defense (DOD),
Department of Energy (DOE),
Department of the Interior (DOI),
Department of Transportation (DOT),
National Aeronautics and Space Administration (NASA),
National Oceanic and Atmospheric Administration (NOAA),
United States Army Corps of Engineers (USACE),
United States Department of Agriculture (USDA), and
United States Environmental Protection Agency (USEPA).

<http://ecosystemcommons.org/content/draft-federal-inventory-ecosystem-services-research-and-policy>

<http://www.rff.org/Publications/Pages/PublicationDetails.aspx?PublicationID=21513>