

SESYNC WORKSHOP 2

Incorporating Values and Assessing Social and Environmental Trade-offs in Managing for Ecosystem Services

Organized by the National Ecosystem Services Partnership at
Duke University and University of Maryland

Held at the Socio-Environmental Synthesis Center (SESYNC), Annapolis MD
April 21-24, 2014

Background and Meeting Objectives

Incorporating ecosystem services into planning and decision-making processes can potentially lead to better ecological and social outcomes for a diverse number of stakeholders. The Federal Resource Management and Ecosystem Services (FRMES) project of the National Ecosystem Services Partnership brought together an array of experts from academia, agencies, NGO's, and consulting firms to develop a guidebook to help agencies integrate ecosystem services into federal planning processes. Two technical working groups have been convened to aid in the development of an assessment framework for agencies that would increase consistency and credibility of applications. While both groups crossed disciplines and were focused on linking ecological and social analysis, one working group focused primarily on ecological production and measurement of services (meeting at the National Center for Ecological Analysis and Synthesis) and the other, on integrating social sciences into the measurement and valuation of ecosystem services (meeting at SESYNC). Both groups held an initial meeting in Spring 2013. The second meeting of the NCEAS group took place in August 2013, and the meeting summarized here was the second meeting of the SESYNC group in April 2014. The SESYNC working group consists primarily of social science experts (including decision analysis and economics), but also includes a number of experts from natural sciences and inter-disciplinary backgrounds.

The initial meetings of both groups informed a draft methods framework for incorporating ecosystem services into natural resource planning. The second NCEAS working group focused on identifying scalable and transferable data and models that can be used to quantify changes in the provision of ecosystem services. This second meeting of the SESYNC working group focused on articulating the general steps and types of data required to incorporate how ecological outcomes effect social welfare (i.e., how they matter to people).

In addition, guiding principles (best practices) for integrating ecological and social analyses and a white paper synthesizing the current state of data and modeling capacity available to support these analyses are being developed across these technical working groups.

Meeting Summary

Presentations. The workshop began with several presentations by attendees discussing different methods used to evaluate social preferences or integrate social and ecological analyses.

- Dan Hellerstein
Assessing the Ecosystem Services Impact of Agricultural Conservation Policies: Two Case Studies
- Rob Johnston
Enhanced Geospatial Data for Meta-Analysis and Ecosystem Service Benefit Transfer: An Application to Water Quality Improvements
- Lisa Wainger
Spatial Analyses Used to Estimate Ecosystem Service Values
- Samantha Sifleet
Estimating Recreation Demand in the EnviroAtlas
- Timon McPhearson
Social-Ecological Assessment and Non-Economic Valuation of Ecosystem Services in New York City
- Trista Patterson
Uses of the Ecosystem Service Concept within Forest Service Management
- David Saah (an overview of a number of relevant projects)

These presentations and ensuing discussions served as a starting point for articulating the steps involved in social analyses.

Outlining Social Science Analysis Steps. The ecosystem services assessment framework developed by the FRMES team prior to this workshop consisted of five steps: scoping, ecology, social, decide, and react. One primary task of this meeting was to clearly articulate the steps within the “social” step – how to link ecological conditions or flows to what people care about (social welfare), how to evaluate social preferences for the ecological conditions and flow, and what data is needed to do so.

The initial starting point for the “social” step are socially relevant ecological conditions or flows that can be quantified by ecological indicators referred to as “bridging indicators” as they bridge the gap between ecological and social analyses. While it was commonly accepted that the next step was to connect these ecological conditions and flows to how people access or experience the ecosystem services provided, developing and organizing a process for considering what information is needed at this step took some work. With the guidance of Lisa Wainger and Timon McPhearson the group developed a list of factors that influence the way people access or experience ecosystem services. These were referred to as “influencing factors”

1. Ecological quality standards and thresholds (i.e. water quality standards)
2. Human characteristics and distributions that influence demand/preferences both now and in the future (i.e. demographics, market segmentation)
3. Capital and labor that influences opportunities to enjoy a service (technological and infrastructure complements such as roads, trails, etc.; includes accessibility of services)
4. Substitutability/rarity
5. Reliability (i.e. stream of services)
 - Inherent characteristics
 - Future trends and risks (economic drivers, land use, climate change)

These influencing factors are used to iteratively redefine and modify the ecological conditions and flows (measured by ecologically based bridging indicators) to create flows of ecosystem services that are adjusted by how people experience

them which can then feed into any number of methods (valuation, MCDA, CEA, etc.) to determine social preferences by service. The preferences by service can then be aggregated by each management option and these aggregations can be compared to facilitate a decision.

The group discussed two additional groups of information that should also be integrated into the analysis:

- Community based norms/standards/perceptions values
- Institutional framework (land rights, laws, zoning, etc.)

Both cultural norms and institutional bounds can influence the flow of services to people. However, they can influence services in multiple ways thus they are incorporated into the analysis at multiple points including potentially influencing the influencing factors.

Further discussions also determined that analyses exploring the distributional impacts, sustainability, and local job creation of various management or project alternatives are separate and additional to an ecosystem services analysis. However, they can be important analyses to include, may use some of the same data, and may be incorporated into the final decision.

The group revised the assessment framework to incorporate these new or refined pieces (Figure 1).

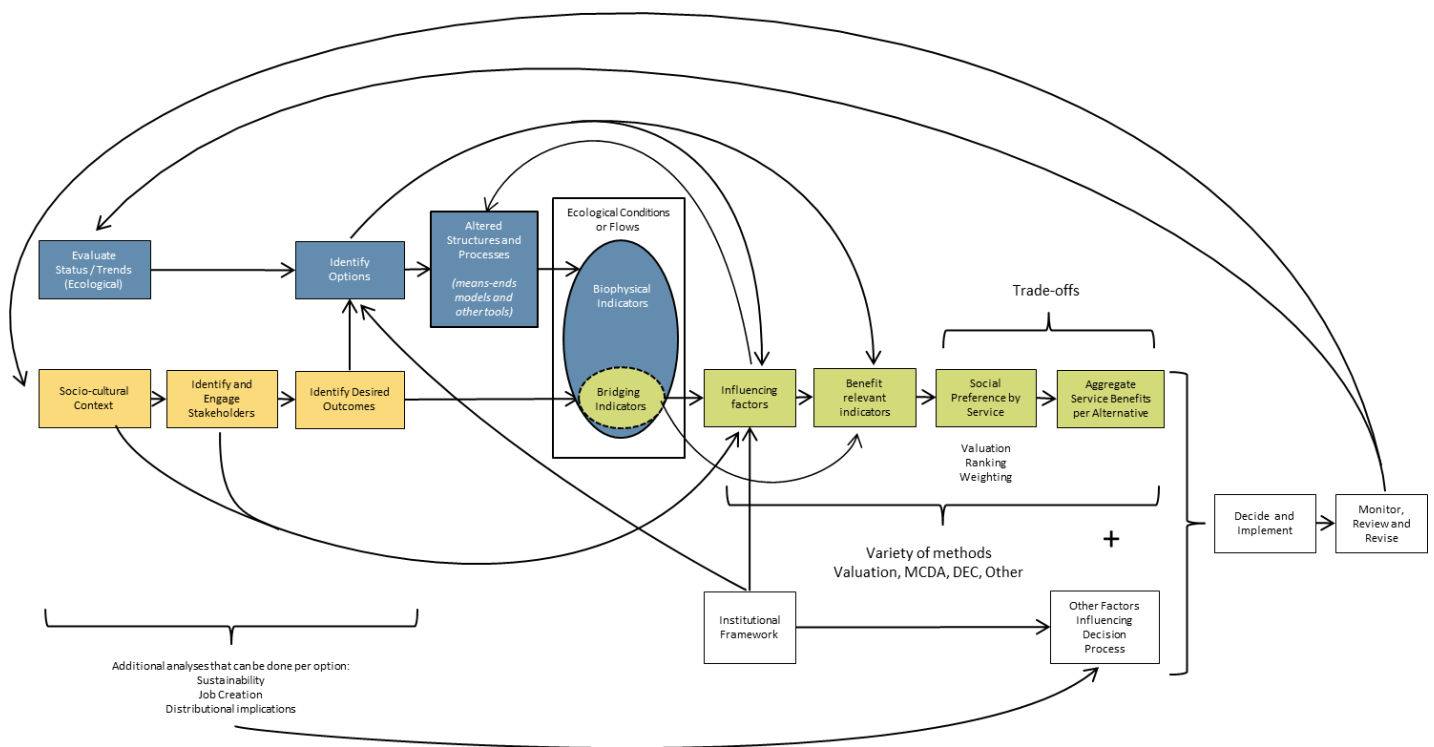


Figure 1. The revised assessment framework. Blue boxes represent ecological analysis, yellow social, and green combined ecological and social. (Note: this is still a draft and will likely be adjusted.)

Identifying Data Gaps. One of the target outcomes from both working groups is a white paper synthesizing the “state-of-the-data” needed for ecosystem services assessments to be credible. What kind of data is available for social analyses? At what scale can it be applied? How credible it is? What data is missing?

Rather than having a large, group discussion about data, we decided to assign types of data or methods to the people that have knowledge in particular spaces. The types of data and methods roughly align with the influencing factors mentioned above. Each person will provide a paragraph or two discussing the influencing factors: what sort of data are

typically used, an illustrative example, an assessment of best available data (how generalizable, transferable and scalable they are), how scientifically credible current capabilities are, barriers to improvement, and priorities for near term improvement. The topics being included are:

- Land use change (maybe overlap with ecology section)
- Socio-demographic
- Use levels/rates/per capita (by service)
- Availability of substitutability and trends (availability of substitutability over time)
- Technical and built
- Norms/values/traditions/perceptions
- Legal/Regulatory
- Benefits transfer data (by service)
- MCDA data – Dean Urban
- Other social methods (data needed)
- Primary data methods (the other main way, primary data collection could be done better)

These paragraphs will be used as the basis for the social section for the white paper. The ecological section is being written by some members of the NCEAS technical working group.

Guiding Principles for Integrating Ecological and Social Analyses. A primary goal of our technical working groups has been to determine best practices for linking ecological and social analyses, a major challenge of ecosystem services assessments. Throughout our previous SESYNC and NCEAS workshops, we have been discussing guiding principles. At this workshop, we refined the existing principles, paying particular attention to those relevant to social analyses. We also decided that having two sets of principles (one over-arching, and one paralleling steps of the framework) is not needed; rather the more specific ideas focused on the steps in the framework would best be used as highlights of key points woven throughout the framework narrative (the overarching description of the analytical framework).

Next Steps

This workshop is the last scheduled meeting of the technical working groups for the FRMES project. We have discussed the possibility of having a joint NCEAS-SESYNC working group meeting in Summer 2014, but it has not yet been planned.

The outcomes of this workshop will be used to refine and finalize components of the FRMES Guidebook.

- The Duke team will continue to refine the assessment framework with clarification from members of the technical working groups as needed.
- The final components needed for the Methods Chapter of the Guidebook will be written over the next few weeks (informed by the discussions outlining the steps to social analysis).
- The Guiding Principles will be revised by the Duke team, presented at the next Community of Practice call (a wide group of people interested in ecosystem services), and incorporated into the Guidebook.

The Duke team will also coordinate the writing of the data/infrastructure white paper.

- Members of the SESYNC technical working groups will complete their writing assignments for the white paper by the end of May or early June. The Duke team will then bring them together into a cohesive document.
- The Duke team will be responsible for tasking members of the NCEAS working group in a similar manner, collecting the results, and integrating the two components into a single paper.

Workshop Attendees

NAME	AFFILIATION	E-MAIL
Frank Casey	USGS	ccasey@usgs.gov
Dan Hellerstein	USDA ERS	danielh@ers.usda.gov
Tom Holmes	FS	tholmes@fs.fed.us
Christy Ihlo	Nicholas Institute	christy.ihlo@duke.edu
Rob Johnston	Clark University	rjohnston@clarku.edu
Ted Maillett	USFWS	edward_maillett@fws.gov
Timon McPhearson	The New School	mcphearp@newschool.edu
Annie Neale	EPA	Neale.Anne@epa.gov
Lydia Olander (lead)	Nicholas Institute	lydia.olerander@duke.edu
Trista Patterson	UNEP-GRID	trista.patterson@gmail.com
David Saah	SIG-GIS	dsaah@sig-gis.com
Dean Urban (lead)	Duke	deanu@duke.edu
Rob Winthrop	BLM	RWinthro@blm.gov
Lisa Wainger (lead)	University of Maryland	lisa.wainger@gmail.com
Chris Miller (remote)	FS	chrismiller@fs.fed.us
Kawa Ng (remote)	FS	kng@fs.fed.us
Evan Mercer (remote)	FS	emercer@fs.fed.us
Samantha Sifleet (remote)	EPA	Sifleet.Samantha@epa.gov