



PRINCIPLES GUIDING ASSESSMENTS OF ECOSYSTEM SERVICE VALUES

PUBLIC AND PRIVATE organizations have become increasingly interested in measuring the benefits that nature provides, such as clean drinking water, fertile soil, and habitat and livelihoods for people and other species. However, the approach to assessing these ecosystem services varies greatly.

The 10 guiding principles for ecosystem services assessments are designed to encourage thorough assessments that take into consideration ecological, social, and economic values—an interdisciplinary approach that examines interdependent relationships.

Practitioners, resource managers, academics, policy makers, local communities, and other stakeholders—including the environment—stand to benefit from a set of principles

to guide the emerging approaches to assessments of ecosystem service values. Following these principles will lead to more comprehensive and credible assessments that can improve public and private decisions and the well-being of current and future generations.

The intended audience for these principles is individuals who make or influence natural resource decisions. They include policy makers at the local, state, and federal levels; natural resource agencies and tribes; nonprofit organizations; academics and consultants who conduct ecological, social, and economic studies; and private businesses. The principles can also provide context for conservation, business, and trade organizations, the media, and interested, engaged citizens.

THE PRINCIPLES

To foster comprehensive assessments of nature's ecological, social, and economic benefits that consistently produce sound resource management decisions, ecosystem service assessments should:

1. Articulate a clear purpose for the assessment and a rationale for the methods used.
2. Reflect a fair and honest effort to represent ecosystems and all of the benefits they provide without intent to produce a predetermined outcome.
3. Identify and engage all interested and affected stakeholders in a transparent, inclusive manner.
4. Use interdisciplinary approaches to address the landscape attributes, ecological functions, and stakeholder perspectives at scales that allow decision makers to understand the full range of benefits, costs, and potential solutions.
5. Assess the full suite of ecological, social, and economic costs and benefits in quantitative and qualitative terms using credible methods, while avoiding the double counting of monetized values.
6. Consider resilience and the ability to maintain biodiversity and sustain ecosystems for current and future generations.
7. Be based on the best scientific information available while disclosing uncertainties that bear on the decision, and provide analysis on the potential effects of those uncertainties.
8. Apply robust methodologies and approaches that strive to be consistent, repeatable, and transparent, while encouraging the improvement of ecosystem services assessment methodologies and tools.
9. Provide a rationale for the exclusion of any social, ecological, or economic attributes relevant to the management decision that were not included in the assessment, and make the full assessment available for technical review.
10. Use language that is relevant to the intended audience and sparing in its use of acronyms and abbreviations to make valuation results accessible for non-technical stakeholders.

“ There is an urgent need for the community to move beyond the either biodiversity or ecosystem services debate to one that acknowledges that both biodiversity and ecosystem services—both intrinsic and instrumental values—are important arguments in stemming the tide of biodiversity loss. ”
 —Reyers, 2012

THE PRINCIPLES IN ACTION

How would these principles be used in an ecosystem services values assessment? Let's use the example of a floodplain development.

Historically, many of the floodplains in the U.S. were converted to other uses, such as housing and industrial development. However, floodplains are natural systems that can deliver a diverse array of ecosystem services, including food production, flood control, pollution filtration, wildlife habitat, cultural and spiritual experiences, and more.

Some of the benefits are easily quantified and monetized, such as crop values and reduced flood damages. Others may just be credibly quantified, as for endangered species habitat, while still others may only be described qualitatively, such as cultural and spiritual experiences. Following the principles proposed here

assures that, if a land use authority were asked to consider housing or other development on such a floodplain, the full suite of ecosystem services—whether captured in monetary, quantitative, or qualitative terms—would enter a values assessment.

The approach begins with understanding the biophysical attributes of the system and engaging with interested and affected stakeholders to identify all the salient ecosystem services impacted by the proposal. This comprehensive scoping process may initially add time and expense, but it can avert problems when impacted groups are left out and enter later to challenge the decision. Once all economic, ecologic, and social impacts are identified, rigorous analytical methods can be used to assess the value of each impact.

THE PRINCIPLES IN DEVELOPMENT

In July 2013, the Cascadia Ecosystem Services Partnership, Portland State University's Institute for Sustainable Solutions, and Defenders of Wildlife convened an ecosystem services

valuation workshop of 30 scientists and practitioners. The principles were developed collaboratively by that group, which included participation from the following organizations.

