

Benefit relevant indicators: Ecosystem services measures that link ecological and social outcomes

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Abstract

There is a growing movement in government, environmental non-governmental organizations and the private sector to include ecosystem services in decision making. Adding ecosystem services into assessments implies measuring how much a change in ecological conditions affects people, social benefit, or value to society. Despite consensus around the general merit of accounting for ecosystem services, systematic guidance on what to measure and how is lacking. Current ecosystem services assessments often resort to biophysical proxies (e.g., area of wetland in a floodplain) or even disregard services that seem difficult to measure. Valuation, an important tool for assessing trade-offs and comparing outcomes, is also frequently omitted due to lack of data on social preferences, lack of expertise with valuation methods, or mistrust of valuation methods for non-market services.

To address these shortcomings, we propose the use of a new type of indicator that explicitly reflects an ecosystem's capacity to provide benefits to society, ensuring that ecosystem services assessments measure outcomes that are demonstrably and directly relevant to human welfare. We call these Benefit-relevant indicators (BRIs) and describe a process for developing them using causal chains that link management decisions through ecological responses to effects on human well-being. BRIs identify what is valued and by whom, but stop short of valuation. A BRI for the ability of wetlands to ameliorate flooding would connect measures of the quantity and quality of wetland in a floodplain, as affected by wetlands management decisions, to the number of people or properties downstream that are vulnerable to flooding. BRIs can support monetary or non-monetary valuation, but are particularly useful when valuation will not be conducted; in such cases they serve as stand-alone measures of "what is valued" by particular beneficiaries. BRIs are valid measures of ecosystem services in that they are directly linked to human well-being. Flexibility in the development of BRIs helps to ensure that they are broadly applicable across practitioner and stakeholder communities and decision contexts.

Read the full paper in [\[1\]Ecological Indicators](#) [\[2\]](#). [\[3\]](#)

Associated Project:

[Interdisciplinary Best Practices for Ecosystem Services Methods in Federal Agency Decision Making](#) [\[4\]](#)

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