

ECOSYSTEM SERVICES:

Integrating the economic and cultural valuation of ecosystem services into natural resource management, and how to message about these services

Ecosystem services are the benefits that ecosystems provide to humans. These benefits can include market values, such as flood protection, crop pollination and recreation, and non-market values, such as aesthetic appreciation, existence value and option value. De Groot et al. (2006) used three general types of value (ecological, sociocultural and economic) to calculate Total Economic Value (TEV) of wetlands, finding each acre of wetlands in the world provided an average value of \$1,325 per acre/year. Integrating the valuation of ecosystem services into natural resource management can highlight the economic and cultural importance of protecting land in its natural state.

Three common methods for ecosystem valuation are direct market valuation, indirect market valuation (or Avoided Cost) and contingent valuation (De Groot et al. 2006). Direct market valuation identifies the exchange value of ecosystem services in markets, as when conservation programs acquire conservation easements by paying landowners not to develop wetlands. Indirect market valuation is used when there are no explicit markets for ecosystem services. It identifies “revealed preferences” by estimating costs that would have been incurred without those services such as the value of using conservation techniques to avoid silting in a wetland, saving the cost of restoring the silted-in wetland. Contingent valuation asks respondents to state their preference for what they would be willing to pay for some ecosystem service, such as conserving a particular wetland for wildlife watching. Proponents of a fourth method argue strongly that using group decision-making is a more appropriate method to identify the ecosystem value of a service.



Birdwatchers at a Central Valley wetland - Mike Peters

Planners and decision-makers are frequently not fully aware of the connections between wetland conditions, the provision of wetland services and the economic and non-economic benefits for people. For example, one study calculated that the total economic impact of ecosystem services in Merced County equaled \$53.4 million per year and 1,100 jobs (Weissman 2001; see also Non-Hunting Recreationists section, above). Lack of awareness can lead to ill-informed decisions to allow development on wetlands. A best practice for performing an ecosystem services valuation to inform decision-making was developed by the U.S. Fish and Wildlife Service’s National Wetlands Inventory (Stelk et al. 2014). It includes these steps: 1) identify the context, 2) define the boundaries, 3) identify stakeholders, 4) develop a functional analysis, 5) perform ecosystem services

valuation, 6) develop trade-off analysis and 7) communicate results.

Using non-jargon terminology is extremely important in communicating effectively with the public. The topic of ecosystem services is especially prone to dense, jargon-rich parlance (Resource Media 2012), and the term “ecosystem services” has been shown to confuse members of the public and management experts alike. A 2010 national voter survey (Metz and Weigel 2010) found that voters strongly preferred the terms “nature’s value” or “nature’s benefits.”