

Economic and ecological concepts for valuing ecosystem services

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Abstract

The purpose of this special issue is to elucidate concepts of value and methods of valuation that will assist in guiding human decisions vis-à-vis ecosystems. The concept of ecosystem service value can be a useful guide when distinguishing and measuring where trade-offs between society and the rest of nature are possible and where they can be made to enhance human welfare in a sustainable manner. While win-win opportunities for human activities within the environment may exist, they also appear to be increasingly scarce in a 'full' global ecological-economic system. This makes valuation all the more essential for guiding future human activity. This paper provides some history, background, and context for many of the issues addressed by the remaining papers in this special issue. Its purpose is to place both economic and ecological meanings of value, and their respective valuation methods, in a comparative context, highlighting strengths, weakness and addressing questions that arise from their integration. © 2002 Elsevier

Keywords : Economic valuation; ecological valuation; ecological services; valuation

Valuing ecosystem goods and services: a new approach using a surrogate market and the combination of a multiple criteria analysis and a Delphi panel to assign weights to the attributes

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Abstract

A new approach to valuing ecosystem goods and services (EGS) is described which incorporates components of the economic theory of value, the theory of valuation (US appraisal), a multi-model multiple criteria analysis (MCA) of ecosystem attributes, and a Delphi panel of experts to assign weights to the attributes. The total value of ecosystem goods and services in the various tenure categories in the Wet Tropics World Heritage Area (WTWHA) in Australia was found to be in the range AUD\$188 to \$211 million year⁻¹, or AUD\$210 to 236 ha⁻¹ year⁻¹ across tenures, as at 30 June 2002. Application of the weightings assigned by the Delphi panelists and assessment of the ecological integrity of the various tenure categories resulted in values being derived for individual ecosystem services in the World Heritage Area. Biodiversity and refugia were the two attributes ranked most highly at AUD\$18.6 to \$20.9 million year⁻¹ and AUD\$16.6 to \$18.2 million year⁻¹, respectively.

Keywords: Valuing; Ecosystem services; Economics; Surrogate market; Shadow prices; Delphi; Multiple criteria analysis