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The Emerging Global Concept of Ecosystem Services

Abstract Title:

Ecosystem Services – A Strategic Research Direction for the U.S. EPA

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Abstract:

The contributions of nature to human well-being are not considered comprehensively in environmental policy and decision making, largely due to the lack of the ecological and socioeconomic knowledge needed to do so. With its Ecosystem Services Research Program (ESRP), the U.S. EPA's Office of Research and Development has set a new strategic direction of innovative and integrated transdisciplinary research to develop a comprehensive theory and set of information, models, and methods for quantifying ecosystem services and their relationship to human well-being that will enable decision makers to assess the implications of available decision alternatives on the delivery of key ecosystem services. The goal of the ESRP is to transform the way decision makers understand and respond to environmental issues, making clear the ways in which policy and management choices affect the type, quality, and magnitude of services we receive from ecosystems – such as clean air, clean water, productive soils, food, and fiber. The ESRP is employing a tripartite approach to accomplish this. First, place-based studies, conducted at watershed to regional scales, serve as test-beds for developing analysis methods and web-based, decision-support tools. Alternative future scenarios, reflecting local, national or global drivers of change, are used to examine potential ecological, human health, and economic outcomes in these locations. Quantifying the services provided by wetland and coral reef ecosystems, and how these are affected by human actions, is a second programmatic emphasis. With an initial focus on reactive nitrogen, the third emphasis focuses on developing an understanding of pollutant impacts on ecosystem services. These emphases are supported by core research on ecosystem modeling, monitoring, and mapping. Through partnerships with other organizations, this research is contributing to our understanding of the ecosystem service tradeoffs involved in environmental decision making, and is being used to inform development of ecosystem services markets and trading schemes.