The EnviroAtlas - Developing a National Approach to Quantify and Map Metrics within an Ecosystem Services Framework

Subfocus: Multi-scale Biodiversity Conservation Metrics

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Ecosystem services, i.e., "services provided to humans from natural systems," have become a key issue of this century in resource management, conservation planning, human well-being, and environmental decision analysis. Mapping and quantifying ecosystem services have become strategic national interests for integrating ecology with economics to help understand the effects of human policies and actions and their subsequent impacts on both ecosystem function and human welfare. The degradation of natural ecosystems and climate variation impact the environment and society by affecting ecological integrity and ecosystems' capacity to provide critical services (i.e., the contributions of ecosystems to human well-being). These challenges will require complex management decisions that can often involve significant trade-offs between societal desires and environmental needs. Evaluating trade-offs in terms of ecosystem services and human well-being provides an intuitive and comprehensive way to assess the broad implications of our decisions and to help shape policies that enhance environmental and social sustainability. In answer to this challenge, the U.S. government has created a partnership among the U.S. Environmental Protection Agency, other Federal agencies, academic institutions, and, Non-Governmental Organizations to develop the *EnviroAtlas*, an online Decision Support Tool that allows users (e.g., planners, policy-makers, resource managers, NGOs, private industry, other researchers, and the open public) to view and analyze the geographical description of the supply and demand for ecosystem services, as well as the drivers of changes. The aim of the *EnviroAtlas* is to improve access to consistently derived ecosystems data which will precipitate more effective decision-making while also providing data to the research, private industry, and education communities. The project is currently being conducted at multiple scales in a phased approach, starting with place-based studies, then multi-state regional areas, culminating in a national-level assessment. The first-level product of the *EnviroAtlas* is tentatively scheduled for public release in April 2014. To demonstrate the utility of this approach, we present an overview of our recent work utilizing biodiversity metrics (for terrestrial vertebrate species) in regard to ecosystem services representative of A) Biodiversity Conservation; B) Food, Fiber, and Materials; and C) Recreation, Culture, and Aesthetics. We describe a new conceptual framework for analyzing these selected ecosystem services, as well as several case studies in the Southwest and Southeast U.S. based on that framework.