

BLM-USGS Pilot Project

Evaluation of Ecosystem Service Valuation Tools

Introduction and Background

The Bureau of Land Management (BLM) and U.S. Geological Survey (USGS) are partnering to evaluate the usefulness and feasibility of incorporating ecosystem service valuation tools into the BLM's decision-making process. Ecosystem services, unlike ecological processes and functions, are defined by the benefits that services provide to humans. Ecosystem services are essential for human existence (e.g., clean drinking water) as well as human satisfaction (e.g., aesthetic enjoyment).

To conduct this evaluation, the BLM and USGS chose the San Pedro watershed in northern Sonora, Mexico and southeast Arizona, which has a patchwork of public lands and a long history of scientific research. More than 40 external partners from government, academic, and non-profit organizations have been engaged, and the project is actively coordinating with similar efforts in the private and public sectors.

Pilot Project

The pilot project was intended to evaluate existing tools for quantifying and mapping ecosystem services in a management context. Through stakeholder consultation, four ecosystem services were selected for analysis: water, carbon, biodiversity, and cultural values. These services were then evaluated in the context of three resource management scenarios: urban growth in the watershed, water augmentation of the San Pedro River, and mesquite management and grasslands restoration. The tools used to perform the analyses included primary valuation, benefits transfer, the Wildlife Habitat Benefits Estimation Toolkit, and the InVEST and ARIES models. The models were evaluated against a series of evaluative criteria, including time requirements, current level of development, scalability, and the inclusion of nonmonetary and cultural valuation perspectives.

Preliminary Results and Next Steps

The results of the pilot study are not intended to guide specific management decisions, but they do show examples where ecosystem services and their monetary and non-monetary values are more and less appropriate in comparing scenario-based management tradeoffs. Significant questions remain about the ability of BLM field staff to independently run and interpret ecosystem services models. Given proper guidance and instruction, BLM offices may be able to take advantage of several of the models, while others either remain in development or require more time and expertise than is practical. The BLM and USGS are initiating a second phase of the pilot project to further evaluate the use of ecosystem service valuation for other regions and resource management issues.



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