Can Ecosystem Services Thinking Help with Climate Change?

The National Council for Science and the Environment’s annual national conference has become a must-go event for anyone interested in policy and ecosystems, and the one held last January in Alexandria, Virginia, “Building climate solutions,” was no exception. Among the profusion of workshops was one organized by Frank Casey and Carl Shapiro of the US Geological Survey and Greg Arthaud of the US Department of Agriculture Forest Service, “Applying an ecosystems framework for adaptation.” In breakout sessions, a couple of dozen agency and university scientists, as well as consultants, batted around questions that are increasing in importance as the effects of climate change loom larger: How can the concept of ecosystem services be applied to plan adaptation to climate change? How will the necessary work be done? And who can do it?

Like many alluring concepts, ecosystem services offer a framework that needs a lot of filling in to be useful. Although there are helpful case studies, much of the research needed to make the ideas generalizable and actionable is at an early stage. Monetary valuation seems essential, although there is widespread recognition that nonmonetary values must also be considered and that any valuation becomes harder when the climate change now in progress is recognized. Valuing avoided losses of ecosystem services requires estimating how much loss might be avoided, not just the service’s current marginal value.

The effort launched at the January conference did not end there. Expert groups are being formed to carry forward three groups of topics that arose from the discussions.

One will examine policy issues for the federal government, including whether a common framework across agencies is desirable and how a federal effort should engage with states and local jurisdictions. It will also encompass what policy measures should be developed to better use existing data and what sort of policy tools might be recommended.

The second expert group is focused on how valuation can be improved and how it might contribute to understanding the trade-offs between adaptation choices over long periods of time and at different spatial and temporal scales. Again, the appropriate role of the federal government is a central question. Among the other questions: how nonmonetary values and uncertainty might be addressed and incorporated.

The third group will ponder what useful biophysical or other metrics are available or might be developed. This includes matters such as how tipping points resulting from climate change might be identified and what metrics that can be applied to local ecosystems can also be scaled up to a regional level. The group will also think about how an appropriate mix of process-based versus outcome-based metrics can be identified.

The expert groups will continue to meet and will present their thoughts at the ACES (A Community on Ecosystem Services) conference to be held in Washington, DC, in December. Those who think they have expertise to contribute might, in the first instance, write to Frank Casey at ccasey@usgs.gov. Your correspondent will look forward to reporting on more detailed outcomes from the December event.

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