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# BioScience®

**A Forum for Integrating the Life Sciences**  
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## Seeing the Big Picture

**E**ven before the Millennium Ecosystem Assessment (MA) was published some seven years ago, forward-thinking governments and scientists recognized the importance of worldwide monitoring of ecosystem services. Yet, the MA served as an important wake-up call, because its global scope and clearly reported results made evident to governments of all stripes that degradation of the planet's ability to provide many key services was real and widespread. At the same time, the MA demonstrated that on many essential topics, the available data were insufficient for a complete understanding of the trends and their likely implications.

Despite its importance, the MA was a one-off effort—a snapshot of a complex process with many unknowns. As soon as its results became known, questions about what could follow it became hard to ignore. The complexities of international negotiations involving a plethora of organizations with an interest in environmental issues, not to mention the different perspectives of developing and developed nations, meant that progress has been slow. Yet, structures to coordinate scientific observations have been created, one of the most important being the Global Earth Observation System of Systems (GEOSS). GEOSS is a multipart entity that will develop data services for disasters, health, energy, climate, water, weather, ecosystems, and biodiversity. It is being designed by the Group on Earth Observations, an organization founded a decade ago that now includes about 90 governments.

A key network established under GEOSS is the Group on Earth Observations Biodiversity Observation Network (GEO BON), some of whose activities were described in *BioScience* last year (see Ferrier 2011; doi:10.1525/bio.2011.61.2.2). It has the principal goal of integrating satellite-derived and *in situ* biodiversity observations. GEO BON in turn consists of multiple working groups, one of which will focus on ecosystem services.

In the article that starts on p. 977 of this issue, Heather Tallis and her colleagues lay out an ambitious scheme for a global, multiscale effort to monitor ecosystem service change that will operate under the auspices of GEO BON. The vision is uplifting—some might say “breathhtaking”—but the article usefully identifies key distinctions that must be observed in trying to analyze ecosystem services. It also points out some of the crucial gaps in available data and difficulties in combining them. If it cannot indicate solutions to the many difficulties that can be anticipated, it serves a useful purpose in laying out what they (now) appear to be. There are enough to occupy more than a few productive careers.

The difficulties will not all be technical. Questions about priorities will inevitably arise, and in order to earn continuing support from international sponsors, the initiative will have to play nicely with other international efforts that sit in the same space. Notable among these is the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), established earlier this year. IPBES, which compares itself to the Intergovernmental Panel on Climate Change and will have its first plenary meeting in Bonn next year, may have its own ideas about priorities. Still, Tallis and her coauthors indicate a readiness to collaborate with IPBES and other programs, as well as with the scientific community in general. There is hope that a fuller understanding of trends in ecosystem services will emerge and start to answer the burning questions that the MA raised.

TIMOTHY M. BEARDSLEY  
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