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Presidential Report Calls for Improved Accounting of Ecosystem Services and Greater Protection of Environmental Capital

President's Council of Advisors Calls for Periodic Ecosystem Assessments and Increased Public Access to Federal Biodiversity Data

The Federal Government should launch a series of efforts to assess thoroughly the condition of U.S. ecosystems and the social and economic value of the services those ecosystems provide, according to a new report by the President's Council of Advisors on Science and Technology (PCAST), an independent council of the Nation's leading scientists and engineers. The report also recommends that the Nation apply modern informatics technologies to the vast stores of biodiversity data already collected by various Federal agencies in order to increase the usefulness of those data for decision- and policy-making.

"Sustaining Environmental Capital: Protecting Society and the Economy" notes that a tremendous amount of economic activity is underpinned by the Nation's ecosystems and the biodiversity they contain, and that the Federal government—as part of its larger responsibility to strengthen the economy and improve Americans' quality of life—has an important role to play in the stewardship of this environmental capital.

It also concludes, however, that the Nation lacks a careful accounting of the services provided by ecosystems and the condition of many environments that support these ecosystems. As a result, PCAST recommends that the Federal government institute and fund a Quadrennial Ecosystems Services Trends (QuEST) Assessment, which would draw upon ongoing monitoring programs as well as newly recommended activities to identify trends related to ecosystem sustainability and possible policy responses.

"It is common wisdom in business that economic growth depends on regular inventories of capital and assets, along with assessments of risks. Given that so much of our Nation's economy is underpinned by our ecosystems, it is only sensible to periodically take an accounting of our environmental capital and assess the risks to it," said Rosina Bierbaum, PCAST member and co-chair of the working group that led the study. "Such assessments will greatly inform public policy concerning these assets."

The report also notes that the science of the valuation of ecosystem services—whether those values accrue directly, as in the case of income-generating fisheries, or indirectly as in the psychological and social benefits of pristine recreational lands—is still young and inexact but steadily improving. The report calls for the development of more sophisticated methodologies for ecosystem services valuation, including satellite-based remote sensing of natural resource changes, to help mature the science and to improve the quality of information available to policy-makers and the public.

The report released today updates a 1998 report of President Clinton's PCAST that called for greater understanding of and investment in America's "living capital." The new report notes that the intervening 13 years have brought a deeper understanding of the trends that are degrading U.S. environmental capital, including replacement of complex natural ecosystems with simpler and less stable man-made ones, overexploitation of resources, increased chemical pollution, expanded ranges of invasive species, and—amplifying the impacts of all of these—global climate change.

The report focuses primarily on solutions to this loss of capital—why government has an essential role to play in the stewardship of environmental capital, what approaches are most promising for doing so both alone and in concert with the private sector, and what specific measures the Administration could embrace to most cost-effectively enhance these crucial assets—noting that the economic gains to be achieved can support significant commercial growth and help create jobs.

In addition to QuEST, which the report suggests could be coordinated with the quadrennial National Climate Assessment already required by law, the report calls for:

- Better prioritization by Federal agencies of the approximately $10 billion spent annually on ecological restoration and related biodiversity-preservation activities so as to achieve the greatest possible environmental benefits from that national investment;
- A concerted effort by the interagency National Science and Technology Council (NSTC) to identify data gaps within existing biodiversity inventories and fill those gaps in part through enhanced coordination of individual agency-based ecological monitoring systems;
- Periodic intergovernmental assessments of ecological changes on a global scale, with the U.S. Department of State playing a leading role in coordination with the White House Office of Science and Technology Policy (OSTP).

The report also recommends that NSTC establish an Ecoinformatics-based Open Resources and Machine Accessibility (EcoINFORMA) initiative. A primary goal of the initiative would be to ensure that Federal datasets relating to environmental health—as well as supporting socio-economic and geophysical data relevant for ecosystem valuation and decision-making—are published in machine-readable, interoperable formats to facilitate use by various stakeholders, including academic researchers, community organizations, and public policy officials.

The report notes with concern that the vast majority of the 55 national environmental monitoring programs surveyed by PCAST have not yet posted their data sets to Data.gov, the Federal data clearinghouse. Moreover, the report found, some agencies appear to be using overly strict security regimes on ecosystem data sets, making it unnecessarily difficult for policy-makers to take environmental capital into account.

"Government agencies over the years have invested heavily in environmental data gathering, but those investments will be wasted if the data are not made available to the public and other agencies in usable formats," said Barbara Schaal, PCAST member and working group co-chair. "By making these data accessible and applying new informatics techniques, we stand to gain answers to difficult ecological and economic questions and can plan wisely for a robust and sustainable future."

The full report can be downloaded here.

PCAST is an advisory group of the Nation's leading scientists and engineers who directly advise the President and the Executive Office of the President. PCAST makes policy recommendations in the many areas where understanding of science, technology, and innovation is key to strengthening our economy and forming policy that works for the American people. For more about PCAST please visit: www.whitehouse.gov/ostp/pcast.