

Natural capital and ecosystem services informing decisions: From promise to practice

Anne D. Guerry , Stephen Polasky, Jane Lubchenco, , and Bhaskar Vira [Authors Info & Affiliations](#)

June 15, 2015 | 112 (24) 7348-7355 | <https://doi.org/10.1073/pnas.1503751112>

[VIEW RELATED CONTENT](#) + [THIS ARTICLE HAS A REPLY](#) +

PDF

Abstract

The central challenge of the 21st century is to develop economic, social, and governance systems capable of ending poverty and achieving sustainable levels of population and consumption while securing the life-support systems underpinning current and future human well-being. Essential to meeting this challenge is the incorporation of natural capital and the ecosystem services it provides into decision-making. We explore progress and crucial gaps at this frontier, reflecting upon the 10 y since the Millennium Ecosystem Assessment. We focus on three key dimensions of progress and ongoing challenges: raising awareness of the interdependence of ecosystems and human well-being, advancing the fundamental interdisciplinary science of ecosystem services, and implementing this science in decisions to restore natural capital and use it sustainably. Awareness of human dependence on nature is at an all-time high, the science of ecosystem services is rapidly advancing, and talk of natural capital is now common from governments to corporate boardrooms. However, successful implementation is still in early stages. We explore why ecosystem service information has yet to fundamentally change decision-making and suggest a path forward that emphasizes: (*i*) developing solid evidence linking decisions to impacts on natural capital and ecosystem services, and then to human well-being; (*ii*) working closely with leaders in government, business, and civil society to develop the knowledge, tools, and practices necessary to integrate natural capital and ecosystem services into everyday decision-making; and (*iii*) reforming institutions to change policy and practices to better align private short-term goals with societal long-term goals.

Continue Reading

[VIEW PDF](#) [FULL TEXT](#)

References

1
A Maddison *Contours of the World Economy 1–2030 AD: Essays in Macro-Economic History* (Oxford Univ Press, Oxford, 2007).

[Google Scholar](#)

2

; Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Working Group II Contribution to the IPCC 5th Assessment Report (IPCC). Available at www.ipcc.ch/report/ar5/wg2/. Accessed May 21, 2015. (2014).

SHOW ALL REFERENCES

[VIEW FULL TEXT](#) | [DOWNLOAD PDF](#)

Further reading in this issue

RESEARCH ARTICLE | JUNE 15, 2015 | 

Embedding ecosystem services in coastal planning leads to better outcomes for people and nature

Katie K. Arkema, Gregory M. Verutes, [...] Anne D. Guerry

RESEARCH ARTICLE | JUNE 15, 2015 | 

Conserving tropical biodiversity via market forces and spatial targeting

Ian J. Bateman, Emma Coombes, [...] Andrew R. Watkinson

RESEARCH ARTICLE | JUNE 15, 2015 | 

Spatial patterns of agricultural expansion determine impacts on biodiversity and carbon storage

Rebecca Chaplin-Kramer, Richard P. Sharp, [...] Peter M. Kareiva

Trending

COMMENTARY | NOVEMBER 6, 2019 | 

Stress during pregnancy: Fetal males pay the price

Margaret M. McCarthy

RESEARCH ARTICLE | OCTOBER 31, 2025 | 

Why more social interactions lead to more polarization in societies

In an increasingly interconnected world, rising political polarization threatens social cohesion and democratic stability...
Stefan Thurner, Markus Hofer, and Jan Korbel

RESEARCH ARTICLE | NOVEMBER 25, 2025 | 

Tattoo ink induces inflammation in the draining lymph node and alters the immune response to vaccination

In this study, we characterized the immune responses to the tattoo ink accumulating in the lymph nodes (LNs). This is very...
Arianna Capucetti, Juliana Falivene, [...] Santiago F. Gonzalez

Sign up for the PNAS Highlights newsletter

Get in-depth science stories sent to your inbox twice a month.

name@example.com

SUBSCRIBE >



Proceedings of the
National Academy of Sciences
of the United States of America



BROWSE

CURRENT ISSUE

PNAS NEXUS

SPECIAL FEATURES

LIST OF ISSUES

TOPICS, COLLECTIONS, AND ARTICLE TYPES

PNAS IN THE NEWS

FRONT MATTER

JOURNAL CLUB

MULTIMEDIA

PODCASTS

INFORMATION

ABOUT

SUSTAINABLE DEVELOPMENT GOALS

EDITORIAL BOARD

AUTHORS

REVIEWERS

SUBSCRIBERS

LIBRARIANS

PRESS

COZZARELLI PRIZE

PNAS UPDATES