

Researchers analyze 'the environmentalist's paradox'

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Global degradation of ecosystems is widely believed to threaten human welfare, yet accepted measures of well-being show that it is on average improving globally, both in poor countries and rich ones. A team of authors writing in the September issue of *BioScience* dissects explanations for this "environmentalist's paradox."

Noting that understanding the paradox is "critical to guiding future management of ecosystem services," Ciara Raudsepp-Hearne and her colleagues confirm that improvements in aggregate well-being are real, despite convincing evidence of ecosystem decline. Three likely reasons they identify—past increases in food production, technological innovations that decouple people from ecosystems, and time lags before well-being is affected—provide few grounds for complacency, however.

Raudsepp-Hearne and her coauthors accept the findings of the influential Millennium Ecosystem Assessment that the capacity of ecosystems to produce many services for humans is now low. Yet they uncover no fault with the composite Human Development Index, a widely used metric that incorporates measures of literacy, life expectancy, and income, and has improved markedly since the mid-1970s. Although some measures of personal security buck the upward trend, the overall improvement in well-being seems robust.

The researchers resolve the paradox partly by pointing to evidence that food production (which has increased globally over past decades) is more important for human well-being than are other ecosystem services.

They also establish support for two other explanations: that technology and innovation have decoupled human well-being from ecosystem degradation, and that there is a time lag after ecosystem service degradation before human well-being will be affected.

Raudsepp-Hearne and her colleagues find little reassurance about human well-being in coming decades in these conclusions, because observable effects threaten future gains in food production, and events such as floods and [droughts](#) clearly harm people within restricted areas. In general, technology provides only limited and local decoupling from ecosystem services, and "there is mixed evidence" on whether humans will become more or less able to adapt to ecosystem degradation. One factor arguing against complacency is growing evidence of "ecosystem brittleness." Raudsepp-Hearne and her colleagues urge researchers to pay more attention to how ecosystem services affect multiple aspects of well-being, ecosystem service synergies and trade-offs, technology for enhancing ecosystem services, and better forecasting of the provision of and demand for [ecosystem services](#).

More information: www.aibs.org/bioscience/current_issue.html

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