

# Seeing the hidden services of nature

March 2 2010

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Following an intense study of agricultural ecosystems near Montreal, a new tool that enables the simultaneous analysis and management of a wide range of ecological services has been developed by Ciara Raudsepp-Hearne of McGill University's Department of Geography, Elena Bennett of the McGill School of Environment, and Garry Peterson of the Stockholm Resilience Centre at Stockholm University. Environmental management typically focuses on nature's resources like food, wildlife and timber, but can miss hidden ecosystem services such as water purification, climate moderation and the regulation of nutrient cycling.

The researchers show that ecosystems that maximize agriculture offer fewer hidden ecosystems services than more diverse agricultural landscapes. Ciara Raudsepp-Hearne says "Landscapes managed to provide a lot of one service, such as pig production, can be costly because they have fewer of the hidden services, such as the regulation of [nutrient pollution](#), which are also important to people." They also show that in some areas high amounts of agricultural production can go hand in hand with the production of other ecosystem services. The researchers framework can be used to help identify "best-practice areas" and contribute to developing effective resource policies.

Bennett believes Quebec manages its environment fairly well, but that there are still trade-offs and costs to be recognized. She says "the big local message is that in terms of the landscape we have to be thinking about more than just one thing - we can't just see corn, we have to see deer hunting, nutrients, and tourism, too."

The area surrounding Montreal was selected because it is typical of near-urban agricultural landscapes in many parts of the world. "I hope these methods can be applied to many other landscapes around the world," Peterson says, adding the tool will help decision makers trying to balance the goals of farmers, rural villagers and exurban commuters.

The findings were published in the *Proceedings of the National Academy of Science* on March 1, 2010.

Provided by McGill University

Citation: Seeing the hidden services of nature (2010, March 2) retrieved 26 April 2024 from <https://phys.org/news/2010-03-hidden-nature.html>

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