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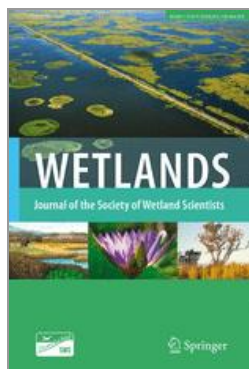
Wetlands

September 2003, Volume 23, Issue 3, pp 517-531

Isolated wetlands and their functions: An ecological perspective

Abstract

The recent U.S. Supreme Court case of *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) has had profound implications on the legal status of isolated wetlands. As a result, policymakers need ecological information on the definition and functions of isolated wetlands to respond to this decision. The term “isolated wetlands” is of fairly recent usage and has been poorly defined. In response, I recommend Tiner’s (2003b) definition as wetlands “that are completely surrounded by upland.” Isolation needs to be considered with respect to specific processes and functions. I suggest that isolation not be viewed discretely but be considered within an isolation-connectivity continuum. Isolation has a fundamental influence on the way water enters and leaves a wetland. This consequently affects any wetland function that depends on water as a vector (e.g., pollutant transport and certain types of dispersal). These wetlands can also have a high level of endemism, extensive plant zonation, and high biodiversity. Isolated wetlands, however, do not represent ecologically isolated habitat for many organisms. I conclude that the effect of isolation may not be as significant as the term “isolated wetlands” suggests: many of the biological features of isolated wetlands may result from environmental conditions that also occur in nonisolated wetlands. As a result of SWANCC, assessment methods are needed that can help regulators distinguish between jurisdictional and non-jurisdictional isolated wetlands. I propose that the merger of simple, source-sink-transport vector concepts with landscape-level assessment methods could be useful in this regard. I point to the need for documented examples of organisms that spend most of their lives in waters of the U.S. but also require isolated wetlands. I conclude that wetland science would benefit from the development of a comprehensive view of isolation as a formative process across different regional wetland types.



• Society of Wetland Scientists

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Journal

Wetlands

Volume 23, Issue 3 , pp 517-531

Cover Date

2003-09-01

DOI

10.1672/0277-5212(2003)023[0517:IWATFA]2.0.CO;2

Print ISSN

0277-5212

Online ISSN

1943-6246

Publisher

Springer Netherlands

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Keywords

- dispersal
- isolation
- connectivity
- isolation-connectivity continuum
- depressional wetlands
- SWANCC
- Clean Water Act
- waters of the United States

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