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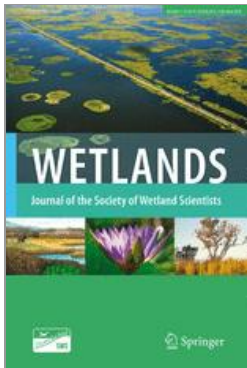
Wetlands

September 2008, Volume 28, Issue 3, pp 553-562

## Linking ecosystem processes with wetland management goals: Charting a course for a sustainable future

### Abstract

Wetland management in the United States has never been as challenging as in today's highly modified landscape. Initially, wetland science and management emerged as professions in response to widespread conversion of wetlands to other uses and concerns over negative impacts on wildlife populations, especially migratory birds. Consequently, wetland management was focused on wildlife, and the initial management technique was simply to protect wetlands. However, extensive conversion of lands for agricultural and urban expansion over the past 60 years has modified ecosystem processes at the landscape scale sufficiently to compromise wetland management activities on adjacent lands dedicated to conservation. Moreover, society now expects a broad suite of ecosystem services to be delivered. As a result, many previously used wetland management techniques are no longer appropriate because they do not take into account influences of adjacent land uses or other ecosystem services, such as ground-water recharge. Other early management approaches may have been ineffective because they were based on an incomplete understanding of wetland processes or social influences. Meanwhile, wetland losses continued, as well as loss of services provided by the remaining managed wetlands. Regulation starting in the 1970s and subsequent research attention on wetland functioning has led to new knowledge and a broader understanding of wetland processes and recognition of the full suite of services (e.g., water storage, water quality improvement, aquifer maintenance, climate mitigation). To be effective in today's highly modified landscape, knowledge of social choices, political influences, and dynamic wetland processes is required to meet wetland management objectives for a range of ecosystem services. We argue that adopting a process-based perspective is critical to develop strategies to optimize a suite of wetland services, including providing traditional wildlife habitat.



• Society of Wetland Scientists

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### Journal

Wetlands

Volume 28, Issue 3 , pp 553-562

### Cover Date

2008-09-01

### DOI

10.1672/07-154.1

### Print ISSN

0277-5212

### Online ISSN

1943-6246

### Publisher

Springer Netherlands

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