

W A T E R R E S O U R C E S

IMPACT

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**A NEW
PARADIGM FOR
WATER RESOURCES
MANAGEMENT**

AWRA

Community, Conversation, Connections

AMERICAN WATER RESOURCES ASSOCIATION

**HAVE SOME COMMENTS ABOUT
THIS ISSUE OF IMPACT?**

SEND US YOUR FEEDBACK

Water Resources IMPACT is in its 11th year of publication and we have explored a lot of ideas. We hope we have raised some questions for you to contemplate. "Feedback" is your opportunity to reflect and respond.

We want to give you an opportunity to let your colleagues know your opinions ... we want to moderate a debate ... we want to know how we are doing. For this issue send your letters by e-mail to:

Joe Berg (jbberg@biohabitats.com) or

Earl Spangenberg (espangenberg@uwsp.edu).

Please share your opinions and ideas. Please limit your comments to approximately 350 to 400 words. If published, your comments may be edited for length or space requirements. Also visit AWRA's Water Blog at <http://awramedia.org/mainblog/> to view past essays from our Future-ing Project.

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A NEW PARADIGM FOR WATER RESOURCES MANAGEMENT

Joe Berg ~ Guest Associate Editor
jberg@biohabitats.com

The temporal and spatial context of water resource management in North America has limited our understanding and vision for effective conservation, management and restoration of this important resource. Colonial land clearing practices changed stream valley morphologies from broad, shallow streams moving through highly connected wet landscapes that made efficient use of transported materials. Today, the stream valley morphologies generally appear as narrow, deep channels cutting through drier landscapes overloaded with thick deposits of sediment delivered by alluvial and colluvial processes, a result of forest clearing and agricultural production. Add to this situation the extra energy associated with stormwater runoff from developed areas, and our streams are eroding and transporting materials while our receiving waters are the dumping grounds for these materials. This issue documents and addresses this situation and identifies 'new' or rediscovered approaches for more appropriate (and cost-effective) water resource management.

FEATURE ARTICLES

- 3 The South River, Legacy Sediments, and the Future of the Resource ... Erik Michelsen**
A new perspective on the continuing effects of historic land clearing and land use patterns points to the need for a change in our management of water resources.
- 5 Implementing Regenerative Storm Conveyance Restoration Techniques in Anne Arundel County: An Innovative Approach to Stormwater Management ... Hala Flores, J. Markusic, C. Victoria, R. Bowen, & G. Ellis**
Regenerative stormwater conveyance, an ecological engineering approach to open channel conveyance of stormwater, provides cost effective conveyance with a range of quantity and quality control values.
- 8 Sand Seepage Wetlands: A Key to Improving Water Quality and Species Recovery ... Keith Underwood**
Using a failed drinking water reservoir dam as a model, the use of sand seepage wetlands is presented as a new model for restoration of drainage corridors.
- 11 Preliminary Reconstruction of a Pre-European Settlement Valley Bottom Wetland, Southeastern Pennsylvania ... Mark Vail, D. Merritts, R. Walter, E. Ohlson, K.Datin, M. Rahnis, L. Kratz, W. Deng, W. Hilgartner, & J. Hartranft**
Using germination of seed removed from under recent stream valley and floodplain sediment deposits, this article describes the plant composition associated with our eastern stream valleys before the comprehensive changes wrought by our initial waves of land clearing.
- 14 Baseflow Stream Channel Design: An Approach to Restoration That Optimizes Resource Values and Ecosystem Services ... Joe Berg**
Presents a new paradigm for stream restoration in small, urban streams using an understanding of historic conditions as the foundation for restoring ecosystem function.
- 17 Stream Restoration Can Improve Water Quality But is Far From Being the Silver Bullet Solution ... Solange Filoso & M. Palmer**
Acknowledges the differential potential that alternative approaches to stream restoration can have on meeting our water quality goals, but reinforces the reality that no single solution can deliver the degree of improvement needed to reverse current water quality problems
- 19 Application of Regenerative Stormwater Conveyance With Other LID Elements to Approach Zero Discharge Systems ... Ted Brown**
Management of stormwater has evolved from a lack of management, through a focus on controlling peak water elevations, to stormwater source reduction efforts. This article focuses on using regenerative stormwater management, sand seepage systems, and other low impact development elements to approach no net increase in stormwater.

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**Front Cover ... North Grays Bog Restoration,
Anne Arundel County, Maryland, courtesy of
Keith Underwood.**



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