

The Association of State Wetland Managers Presents:  
Improving Wetland Restoration Success  
Webinar Series

***Bottomland Hardwood Restoration***

***Presenters:***

***John A. Stanturf, PhD, U.S. Forest Service***

***John W. Groninger, PhD, Southern Illinois University***

***Moderators: Jeanne Christie & Marla Stelk***



Supported by EPA Wetland Program Development Grant 83578301  
and the U.S. Fish & Wildlife Service Coastal Program

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# AGENDA

- **Welcome and Introductions** (15 minutes)
- **Bottomland Hardwood Restoration** (60 minutes)
  - Restoring Bottomland Hardwood Forests  
John A. Stanturf, PhD, U.S. Forest Service
  - Bottomland Hardwood Forests: Managing the Middle Years  
John W. Groninger, Southern Illinois University
- **Question & Answer** (20 minutes)
- **Wrap up** (5 minutes)





# WEBINAR MODERATORS



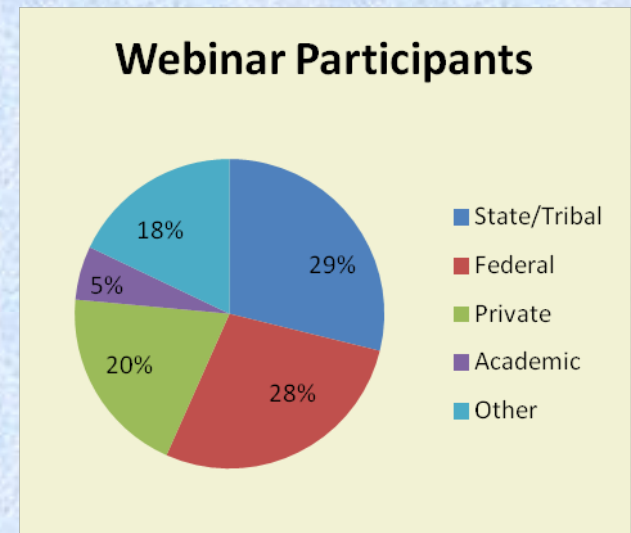
Jeanne Christie,  
Executive Director



Marla Stelk,  
Policy Analyst

# WETLAND RESTORATION PROJECT

- Interdisciplinary workgroup of 22 experts
- Monthly webinar series
- Draft white paper based on webinars, participant feedback, external review
- Pursuing strategies that:
  - Maximize outcomes for watershed management
    - Ecosystem benefits
    - Climate change
    - Invasive species
  - Improve permit applications and review
  - Develop a national strategy for improving wetland restoration success



**ACTION PLAN → IMPLEMENTATION**

# WEBINAR SCHEDULE & RECORDINGS

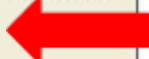
## Association of State Wetland Managers - Protecting the Nation's Wetlands.



### ASWM Upcoming Webinars

- **Stream/Wet Meadow Restoration** - September 8, 2015
- **The Florida Wetlands Integrity Dataset: Part 2** - September 16, 2015
- **Solar Project Siting and Wetland Permitting** - September 29, 2015

For a complete list of ASWM webinars, [click here](#).



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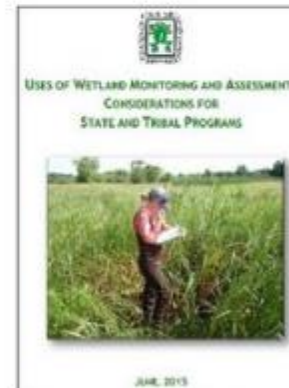
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### ASWM Publications

#### Uses of Monitoring and Assessment in Wetland Programs

The Association of State Wetland Managers has released a new report - *Uses of Monitoring and Assessment: Considerations for State and Tribal Programs*. This report - which was prepared with technical assistance from an EPA State Wetland Program Development Grant - explores the various ways that states and tribes could make better use of existing monitoring and assessment methods to obtain science-based answers to wetland management problems. While it provides an overview of many common approaches to wetland monitoring, the focus is primarily on **why** these methods are selected for a given purpose. This report encourages the thoughtful identification of the most appropriate and efficient methods in light of available financial and staff resources.



### Picture of the Week

#### Lovely Weeds





Jeanne Christie Photo

For information about this picture and to see past pictures of the week click [here](#).

# WEBINAR SCHEDULE & RECORDINGS

Association of State Wetland Managers - Protecting the Nation's Wetlands.



**ASWM Upcoming Webinars**

- Novel Ecosystems and Restoration - 11/20/15
- Climate-Smart Conservation for Wetlands - 12/9/15
- Improving Wetland Restoration "Success": What We've Learned So Far - 12/15/15

[For a complete list of ASWM webinars, click here.](#)

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### ASWM Webinars/Conference Schedule




The Association of State Wetland Managers holds webinars on various topics, most of which relate to a specific project and work group. In addition, ASWM hosts webinars as part of its members' webinar series on topics of interest to members. Please click on the webinar group name below for more details about individual webinars. In all cases, if you have any questions about registering for a webinar, please contact Lewis at [lewis@aswm.org](mailto:lewis@aswm.org).

If you haven't used Go To Webinar before or you just need a refresher, please visit our guide prior to the webinar here.

The Association of State Wetland Managers (ASWM) and the Society of Wetland Scientists (SWS) share the common goal of encouraging sound science in wetland research, management, regulation, policy, and conservation. To meet this goal, the two organizations developed a formal partnership in 2014. ASWM is pleased to provide a 50% to SWS's new Webinars Webinar Series and encourage you to investigate their webinar series as well as our own.

For a full list of all available webinar recordings visit this link [click here](#).

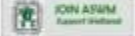


### Members' Wetland Webinar Series

For Members of ASWM Only

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### Hot Topics Webinar Series

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### Natural Floodplain Functions Alliance Webinar


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# FUTURE SCHEDULE

## Topics for the remainder of 2016:

- August (date TBD): How to Select the Right Wetland Restoration Team
- September (date TBD): Long-term Management & Legal Protections for Voluntary Wetland Restoration
- October (date TDB): Prioritizing Wetland Restoration Mitigation Site Selection in the Face of Climate Change
- Tuesday, Nov. 8: Final draft report: A National Strategy for Improving Wetlands Restoration Outcomes

**FOR FULL SCHEDULE, GO TO:** <http://aswm.org/aswm/6774-future-webinars-improving-wetland-restoration-success-project>

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Please contact **Laura Burchill**  
[laura@aswm.org](mailto:laura@aswm.org)  
(207) 892-3399

Provide:

- Your full name (as registered)
- Webinar date and Title

# PRESENTERS



**Dr. John A. Stanturf**  
U.S. Forest Service



**Dr. John W. Groninger**  
Southern Illinois University

# A “COOKBOOK” APPROACH TO WETLAND RESTORATION WON’ T WORK

*There are too many variables.*

- *Every landscape is different*
- *Purpose of restoration varies*
- *Even a good design may not anticipate events*
- *Time needed varies*
- *Intervention and adaptation may be needed during and after construction*
- *Evaluating progress and completeness is needed*



# Major Reasons for Failure (examples)

## Overarching

- Poorly Defined Outcomes/Performance Criteria
- Lack of Access to Expertise and Training
- Lack of Accountability and Enforcement
- Altered and Changing Landscapes/Climate
- Separation of Professions – The ‘Silo’ effect

## Site-Specific

- Planning issues, i.e., Inadequate Assessment of landscape, hydrology & soils
- Construction issues, i.e., failure to implement design, no adaptive management
- Post construction issues, i.e., poor record keeping, limited follow up activity to address problems

# How Do We Improve?

- Better defined goals and performance criteria
- Improve Access to Knowledge and Training
- Require Accountability
- Require Documentation of Credentials
- Develop a Common Taxonomy
- Adopt New Science and Technology into Regulations and Guidance
- Engage Multi-Disciplinary, Integrated Teams
- Regional Data Depositories to Document Reasons for Success and Failure

## EACH WETLAND RESTORATION PROJECT IS UNIQUE:

- *Consider both historic and current landscape setting*
- *Analyze how water moves into and out of the site*
- *Evaluate soils present and identify any onsite drainage*
- *Focus first on hydrology and soil first, last on plants*
- *Develop a plan that is achievable for the site*
- *Develop comprehensive cost estimates*
- *Ensure plan is followed*
- *Hire experienced and knowledgeable contractors*
- *Adapt plan as needed during construction*
- *Determine if monitoring criteria will measure progress*
- *Keep good records and share with others*



# WHITE PAPER AVAILABLE TO REVIEW

<http://www.aswm.org/pdf lib/wetland restoration whitepaper 041415.pdf>

*This white paper is currently in draft form only. The final version is expected to be completed by the end of 2016. Chapter Two will be extensively revised after significant consultation with federal and state agencies and non-governmental organizations involved in wetland restoration efforts in order to identify actions that are already being done, new actions that can be done, and agencies/organizations that can implement them.*

## **Wetland Restoration**

### **Contemporary Issues & Lessons Learned**

**v. 6.29.16**

Additional Information: <http://www.aswm.org/wetland-science/wetland-restoration>



# **CHAPTER 2: ACTIONS TO IMPROVE WETLAND RESTORATION**

## **OVERALL RECOMMENDED ACTIONS**

This current document identifies needed actions. In 2015 & 2016, this part of the paper will be expanded and revised to identify how these changes could be implemented by suggesting who, what and how.

***RECOMMENDED ACTION #1: DEVELOP CLEAR PROJECT GOALS & USE APPROPRIATE AND QUANTIFIABLE PERFORMANCE STANDARDS TO MEASURE PROGRESS***

***RECOMMENDED ACTION #2: DEVELOP ACHIEVABLE PERFORMANCE CRITERIA FOR SHORT TERM EVALUATION AND ESTABLISH A LONG-TERM MANAGEMENT PLAN***

***RECOMMENDED ACTION #3: ESTABLISH APPROPRIATE PERFORMANCE CRITERIA BASED ON RESTORATION GOALS & PROJECT TYPE***

***RECOMMENDED ACTION #4: RESEARCH THE SITE'S LAND USE HISTORY AND MODEL POTENTIAL FUTURE STRESSORS USING HISTORICAL TREND DATA***

***RECOMMENDED ACTION #5: USE A WATERSHED APPROACH***

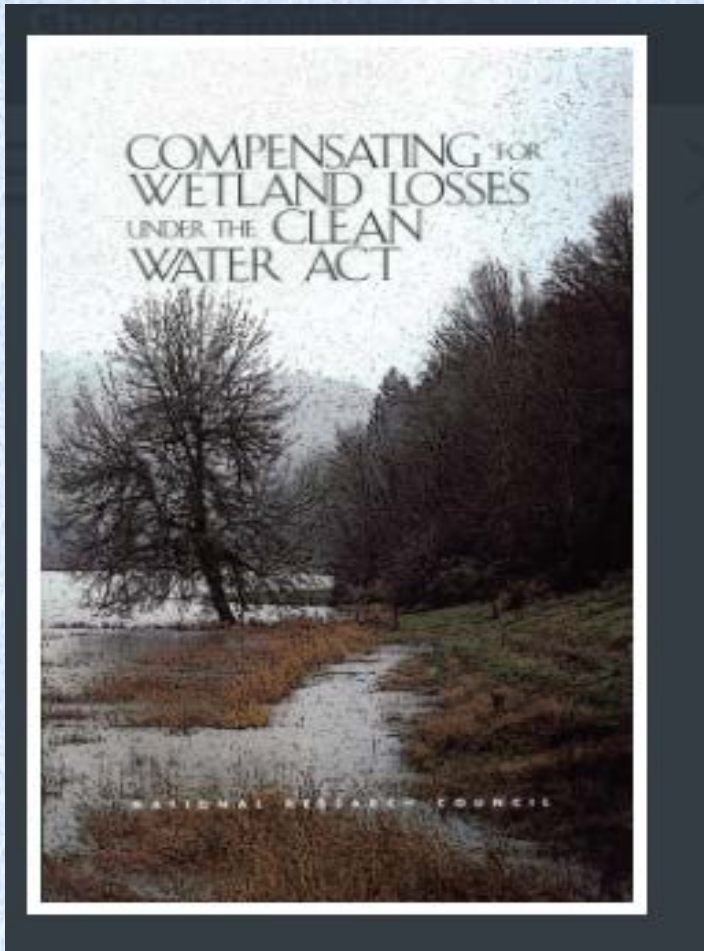
***RECOMMENDED ACTION #6: INCLUDE PRE AND POST CONSTRUCTION COSTS IN ESTIMATES***

***RECOMMENDED ACTION #7: USE AN ADAPTIVE MANAGEMENT APPROACH THROUGHOUT THE LIFE OF THE PROJECT***

***RECOMMENDED ACTION #8: REQUIRE DOCUMENTATION OF CREDENTIALS, PROVIDE INCENTIVES & ENFORCE ACCOUNTABILITY***

***RECOMMENDED ACTION #9: IMPROVE ACCESS TO KNOWLEDGE & TRAINING AND ENGAGE MULTI-DISCIPLINARY INTERDISCIPLINARY TEAMS***

# Identifying Challenges Can Lead to Solutions: A Previous Case



## National Mitigation Action Plan Recommendations

*Example:* The Corps and EPA, in conjunction with USDA, DOI, and NOAA, working with States and Tribes, will co-lead the development of guidance on the use of on-site vs. off-site and in-kind vs. out-of-kind compensatory mitigation by the end of 2003.

## **RECOMMENDED ACTION #2:**

**DEVELOP ACHIEVABLE PERFORMANCE CRITERIA  
FOR SHORT TERM EVALUATION AND ESTABLISH A  
LONG-TERM MANAGEMENT PLAN**

### Seeking Specific Recommendations

- ❖ Who should take action (can be many parties)?
- ❖ What should they do?
- ❖ How should they do it?

# Recommendations Welcome

❖ Please submit to:

Marla Stelk (one of your moderators today!)

[marla@aswm.org](mailto:marla@aswm.org)

# Bottomland Hardwood Restoration

IT WILL TAKE US A FEW MOMENTS TO MAKE THE SWITCH...



Photo Credit: Marla Stelk

# Stanturf Recommendations

Challenges	Recommendation	Selected Measures
Seedling quality variable and of limited genetic composition	<ul style="list-style-type: none"><li>• Adopt Target Seedling Concept</li><li>• Capture more genetic variability in seed collection</li></ul>	<ul style="list-style-type: none"><li>• Collect seed from more stands</li><li>• Provide more information on sources</li><li>• Test planting stock on more sites</li></ul>
Low stocking levels in planted stands limit long-term management options	<ul style="list-style-type: none"><li>• Increase survival</li><li>• Increase planting density</li></ul>	<ul style="list-style-type: none"><li>• Control competing vegetation (herbicides, cover crops) to reduce mortality</li><li>• Plant more seedlings to achieve higher stocking with given mortality levels</li></ul>
Long-term effort is required	<ul style="list-style-type: none"><li>• Incorporate full project cycle in funding programs</li><li>• Adopt adaptive management</li></ul>	<ul style="list-style-type: none"><li>• Require explicit objectives that specify expected restoration trajectories</li><li>• Monitor and report on performance at site, landscape, and program levels</li></ul>
Climate change will alter river base levels and introduce more frequent extreme events	<ul style="list-style-type: none"><li>• Adapt to projected climate change in species selections</li><li>• Increase diversity of composition and structure (risk reduction)</li></ul>	<ul style="list-style-type: none"><li>• Increase understanding of intimate species mixtures</li><li>• Revise planting guideline for site matching as climate changes</li></ul>

# Groninger Recommendations

Challenges	Recommendation	Selected Measures
Delivering high quality ecosystem services on restored lands	State and justify clear and specific restoration objectives	Monitor and report restoration performance in terms of pre-selected indicators (economic impact, key species occurrence, diversity of desired cover types)
Invasive species	<ul style="list-style-type: none"><li>•Accept the inevitability of a changing biota on some sites</li><li>• Retain focus on ecosystem functionality</li><li>•Steady funding to allow consistent management</li></ul>	Performance based, but with focus on establishing clear relationships between biotic composition and indicator performance on a site specific basis
Putting into action the understanding that many disturbances are inherent to a healthy ecosystem	<ul style="list-style-type: none"><li>•Establish and maintain manager-driven research cooperatives to address common problems at the regional level</li><li>•Multi-disciplinary training for managers</li></ul>	Relating existing site conditions to those needed to achieve high priority ecosystem services

# Questions?

Dr. John A. Stanturf  
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Dr. John W. Groninger  
[groninge@siu.edu](mailto:groninge@siu.edu)

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*Thank you for your  
participation!*



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