Cultivating Community Conservation: Techniques, Engagement and Education

Webinar Nine: Water Quality - Restoration Techniques and Best Practices
October 20, 2015
11:00 am PDT/ 2:00 pm EDT
How to Participate

- Type your question into the questions box at any time during the presentation.
- The questions box and buttons are on the right side of the webinar window.
- This box can collapse so that you can better view the presentation. To unhide the box, click the arrows on the top left corner of the panel.
- Your question will be read during the Q&A session.
- If you are having technical difficulties, please send us a message via the questions box on your right. Our organizer will reply to you privately and help resolve the issue.
Learn about innovative ways environmental leaders have addressed watershed and wetland management in restoration projects.

Learn how Five Star and Urban Waters grantees are aligning restoration goals with environmental stewardship opportunities.

Explore how environmental restoration leaders are gathering support from volunteers and community groups.

Discuss new engagement strategies.
Webinar Speakers

Marie Branch
Grant Writer and Special Projects Coordinator
Wolf River Conservancy

Mark Adler
Director of Special Projects
Keep Indianapolis Beautiful
Engaging Urban Youth with the Wolf River Watershed in Shelby and Fayette Counties, TN
Wolf River Conservancy

“Preserve, protect and enhance this irreplaceable natural resource and ensure the Wolf River area’s natural beauty for future generations.”

-Esther West, circa 1980’s
Wolf River Conservancy

* Land trust dedicated to the protection and enhancement of the Wolf River watershed as a sustainable natural resource
* Founded in 1985 (celebrating our 30th anniversary!)
* Ghost River Section saved in 1995 (20th anniversary)
Wolf River Conservancy

* Conservation
* Recreation
* Education
* Commitment
Wolf River Facts

* The Wolf River begins at Baker’s Pond, a huge spring in Holly Springs National Forest (north Mississippi)
* The Wolf River ends at the Mississippi River in downtown Memphis

Wolf River
Wolf River Watershed
Rural vs. Urban Wolf River
Rural vs. Urban Wolf River

* Rural (Fayette Co.)
  * Unchannelized
  * Healthy wetlands
  * Extensive floodplain
  * Greater biodiversity
  * Fewer exotic invasive plants
  * Popular paddling destination
  * Less erosion
  * Less pollution
  * Fish safe to eat

* Urban (Shelby Co.)
  * Channelized
  * Diminished floodplain
  * Less biodiversity
  * Exotic invasive plants – lots!
    * Some sections OK
  * Highly eroded
  * More pollution
  * Fish unsafe to eat
Habitat Restoration and Watershed Stewardship Needs

Efforts focused on urban Wolf River...

* Removal of exotic invasive plants, esp. privet
* Planting of native trees, shrubs, and other plants to protect watershed and retain biodiversity
* Trash removal (including tires, furniture, etc.)
* Erosion control
* Storm water filtration and retention
Goals of Youth Engagement

* Increased environmental knowledge, especially in regard to drinking and storm water, biodiversity protection
  * Outcomes – improved water quality and environmental behavior, future stewards and advocates

* Restoration and Stewardship of Urban Wolf River:
  * Outcomes – improved water quality, improved biodiversity, healthier habitats, less litter – as well as sense of ownership and pride among participants

* Appreciation for wild and beautiful upper Wolf River:
  * Outcomes – continued protection and participation, advocacy for river into the future
How We Engage

* Indoor Presentations

* Service projects – watershed stewardship; habitat creation and restoration along Wolf River and at schools within watershed.

* Field trips and paddling experiences

* Follow-up, evaluations and feedback when possible
How to Engage: Making Contact

* WRC contacts adult leaders – school system admin, principals, teachers, scout leaders, youth groups, etc.
  * Teacher workshops, school events, teacher in-service, public events, media, website, direct communication

* Adult leaders (e.g. teachers) contact WRC
  * Education Director, Land Protection Associate, River Guides
Classroom Presentations

* Introduction to Wolf River

* Water quality concepts and issues

* Specific information about service project and/or field trip
Field Trips: “Watershed Tour”
Field Trips: Wolf River Greenway along urban river
Rotation Stations for Large Groups

Station activities dependent on availability of other instructors.
Rotation Stations

<table>
<thead>
<tr>
<th>Site Visit Workstations</th>
<th>Description</th>
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<tbody>
<tr>
<td>Planting</td>
<td>WRC staff led discussion and demonstration of proper way to plant native plants.</td>
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<tr>
<td>Nature and Art</td>
<td>Using natural art materials such as charcoal, and bird feathers, participants drew and painted the surrounding natural landscapes.</td>
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<tr>
<td>Privet Removal</td>
<td>Students were supervised as they learned to identify Privet and cut/pull it out of the ground.</td>
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<tr>
<td>Watersheds, Wildlife, and Water Quality</td>
<td>WRC staff discussed watersheds, demonstrated how to test water quality, and showed students native Wolf River creatures.</td>
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<tr>
<td>Storm Water Pollution</td>
<td>Clean Memphis representative discussed and demonstrated water pollution and recycling using an interactive model.</td>
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Field Trips: Upper Wolf, Fayette Co. Ghost River State Natural Area
Field Trips: U of M Aquifer Research Site, Upper Wolf River Watershed
Field Trips: Paddling
May 20, 2014: Stewardship trash pick up along urban Wolf River ...combined with a rafting trip.

“I never thought I’d be doing something like this!”

“I want to do this again and again and again and again!”
Service Projects: Trash Pickup
* Exotic invasive plant removal, esp. privet
Privet Removal
Service Projects: Planting for Biodiversity
Girl Scout Gold Star Project

This fall, working with U of M graduate students to plant two additional beds.
Girl Scout Gold Star Project: Pollinator Habitat
Results of Combined Field Trip and Service Project

* Increased knowledge: Students reported learning about invasive privet, water pollution, caring for the river, wildlife species, littering, recycling, aquifers, watersheds, water quality...

* Students overwhelmingly described pulling privet as their favorite part of the trip...
Results from school programs...

* “I first got interested in science and nature when Ms. Cathy visited our class and taught us about watersheds, species around the Wolf River, aquifers and many other things about the environment and the Wolf River.”

* “I got to experience nature. I now understand how a watershed works.”

* “I learned about how the river and creek provide habitat for the animals.”
Results ...

* “I enjoyed cutting down trees [privet] because it was a new experience. It was something I had never done before. I was proud of myself because I worked hard.”

* “The field trip to the Wolf River and Cypress Creek was amazing. I realized that we do put and throw things in our river that do not belong there. We need to watch out and take control of what we put in there.”

* “We can’t drink contaminated water and neither can the fish or other life forms in the water.”
2015 Projects and Outreach

* Continuing restoration efforts within the Wolf River Watershed – exotic invasive plant removal, planting of native trees and other plants

* Storm water and habitat projects at schools within the urban Wolf River watershed

* Environmental education presentations and field trips for school groups

* Outdoor experiences for youth and families
Fall 2015 Projects and Plans

* Collierville High School – service project and field trip
* Raleigh Egypt High School - classroom program, service project, field trip
* Lausanne Elementary – classroom program, service project
* Cordova High School – classroom program, field trip
* Math/Science Nights at Raleigh Egypt HS, Springdale ES
* Rhodes College and Univ. of Memphis student service projects
* Ongoing membership paddling trips and hikes
Rhodes College Environmental Science Class Service Project (privet removal) and Comparative Plot Studies
**Fall 2015 Projects**

- Collierville High School Outdoor Classroom Service Project
- Field trip to Fayette County on Nov. 5th
Collierville High School Outdoor Classroom Service Project
Collierville High School Outdoor Classroom Service Project
Lausanne Elementary

* Classroom program
* Small-scale native butterfly garden project for 2nd graders
Kingsbury High School Project – storm water storage and rain barrels
Kingsbury High School Project: increasing biodiversity
Effective youth engagement

PLANNING

* Clear communication with adult leaders, admin, teachers, etc.
* Thorough planning and logistics
* Liability waivers, parent signatures
* First aid kit, emergency plan
* Scale project to age group
* With some exceptions, kids don’t use power tools or herbicides

* E.g. for a large service project, 100+ kids
  * Communicate to group/group leaders
  * 1 adult per 20 or fewer kids
  * Rotation stations as needed
  * Adequate staff and/or volunteers
  * Adequate supplies and first aid kit
  * Water, snacks
  * Emergency plan, charged cell phone
Service Projects: Communication

* Talk to the students first if possible
  * overview of project, clothing and footwear

* What to expect, what’s expected of them:
  * e.g., you might get muddy, we might see wildlife; you have to listen and follow instructions; safety issues

* Allay fears:
  * urban youth often uncomfortable or frightened outside; photos of previous service projects, etc.

* Evaluations/Opportunity for feedback afterward
Snakes and Poison Ivy
For service projects, keep in mind...

* With volunteers, and especially with youth, it’s about them more than the work that gets done.

* Safety and adequate supervision is the first concern.

* Everyone should feel they’ve had a POSITIVE experience and leave with a SENSE OF ACCOMPLISHMENT.
Effective youth engagement

* Relevant
* Experiential, memorable
* Sensory or physical, “hands-on”
* Good teaching methods
* Outdoors
* Interactive
Less effective

* Activity booklets and posters
* Web resources
* One time classroom visits
* Information tables
* Highly technical and abstract
* Visually unappealing
What’s a WETLAND?

A wetland is a land area that is saturated with water, either permanently or seasonally, such that it takes on the characteristics of a distinct ecosystem.[2] The primary factor that distinguishes wetlands from other land forms or water bodies is the characteristic vegetation of aquatic plants,[3][4] adapted to the unique hydric soil. Wetlands play a number of roles in the environment, principally water purification, flood control, carbon sink and shoreline stability. Wetlands are also considered the most biologically diverse of all ecosystems, serving as home to a wide range of plant and animal life.[5] Wetlands occur naturally on every continent except Antarctica,[6] the largest including the Amazon River basin, the West Siberian Plain,[7] and the Pantanal in South America.[8] The water found in wetlands can be freshwater, brackish, or saltwater.[4] The main wetland types include swamps, marshes, bogs, and fens,[9] and sub-types include mangrove, carr, pocosin, and varzea.

The UN Millennium Ecosystem Assessment determined that environmental degradation is more prominent within wetland systems than any other ecosystem on Earth.[10] International conservation efforts are being used in conjunction with the development of rapid assessment tools to inform people about wetland issues.[citation needed]

Constructed wetlands can be used to treat municipal and industrial wastewater as well as stormwater runoff, They may also play a role in water-sensitive urban design.
WHAT’S A WETLAND?

Where land and water meet -

a **transitional zone** between land and water
Better...

How *long* is the Wolf River?

* 5 miles?
* 20 miles?
* 50 miles?
* 90 miles?
* 200 miles?
About 90 miles long!

Tennessee River: 652 miles
Mississippi River: 2,320 miles
Amazon River: 4,000 miles
Nile River: 4,130 miles
Memorable experiences...
Meaningful engagement leading to future commitment
Working with adult volunteers

• Goals:
  * Site restoration
  * Education
  * Positive experience
  * Continued organizational involvement
  * Partnerships
  * Fundraising
FedEx Employee Volunteer Days
FedEx Employee Volunteer Days
Tree Planting Events

* Date and time specific
* Hands-on activity
* Family friendly
* Not difficult to organize
* Easy connection to environmental benefits
* Connection to future generations
Tree Planting Events
Tree Planting Events
Clean up projects
Kennedy Park Project
Kennedy Park Project
Kennedy Park Project
Kennedy Park Project
Kennedy Park Project
Working with adult volunteers

• Keep in mind:
  * Can be a great engagement tool
  * Valuable matching contributions
  * Staff commitment required!
  * Balance needs and expectations
  * Make it meaningful (but doable)
Thank you for listening!
Questions?

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Webinar Speakers

Marie Branch
Grant Writer and Special Projects Coordinator
Wolf River Conservancy

Mark Adler
Director of Special Projects
Keep Indianapolis Beautiful
KEEP INDIANAPOLIS BEAUTIFUL: Helping People & Nature Thrive

Mark Adler
Director of Special Projects
WHO IS keep Indianapolis beautiful, inc.

KIB engages diverse communities to create vibrant public places, helping people and nature thrive.

KIB sees a vibrant city, with every neighborhood landscape thriving and well, and its people empowered, mobilized, and devoted toward that vision. The result: a city defined by strong neighborhoods; inspired places; and a clean, flourishing environment.
A KIB SNAPSHOT

• 37,000 volunteers
  (71 FTE equivalent)

• 500 projects
  All over Indianapolis

• Community
  forestry, placemaking, and litter abatement
Volunteer Led
Invasive Removal

Fall Creek
Invasive Removal Process

• When you begin your day:
  
  ○ You and your group will have a designated parking area and then report to the section you have been assigned to.
  
  ○ The group will then divide tasks and begin to open up an area to get deeper into the area of removal. This will be done through stump cuts with loppers.
Invasive Removal Process

- When you begin your day:
  - Once the items are cut, they can be dragged as close to the roadway (NOT IN THE ROADWAY) as possible.
  - All of the cut ends should be facing the roadway and not just piled up together, this will help the chipping crews.
  - If there is a large piece of invasive that you cannot cut through, you will need to cut the growth off the main trunk or stem as high as you can go. The remaining large trunk will be cut and treated at a later date. Having this initial cut will still provide great value.
Invasive Removal Process

- When you begin your day:
  - The trained herbicide applicator team will follow as the stumps are cut in the field.
  - It is important to wait for this person(s) before you begin cutting as the cut stumps must be treated immediately or the herbicide will not reach its full potential.
Overview of Jobs

- Working together to:
  - Follow Project Manager
  - Arrive at time assigned
  - Place material correctly
  - Cut material
  - Stay away from chipping equipment
  - Spray stumps (authorized team only)
  - Clean-up trash
Tools Needed

- Both a list of items to bring and NOT to bring will be coming soon, but some things that will be needed are:
  - Loppers
  - Arbor Saws
  - Bug Spray
  - Gloves
  - Safety Glasses
  - Snacks / Water
  - Trash Bags
  - Ear Plugs
Team Member Duties

- To encourage a great day for all involved, talk with your team members to find out their capabilities.

- Jobs include:
  - Safety Captain
  - Manual Labor
  - Checking team in
  - Taking pictures
  - Clean-Up Crew
Invasive Removal

Community Involvement to Address a Long-standing Invasive Species Problem: Aspects of Civic Ecology in Practice
Rebecca W. Dolan, Kelly A. Harris and Mark Adler

ABSTRACT

Invasive non-native species (INS) are found in every city around the globe, but their impacts in urban settings as biological agents of visual pollution that block views of natural landscapes and disconnect citizens from nature are not as often addressed as comprehensively as their impacts in natural areas or agricultural settings. The multiple impacts of INS in cities make them ideal candidates for aspects of Civic Ecology Practice, where local environmental stewardship action is taken to enhance green infrastructure and community well-being in urban and other human-dominated systems. We present details of a community driven program focused on removal of an INS, Amur bush honeysuckle (*Lonicera maackii*), from banks of a creek in Indianapolis, Indiana, in the midwestern USA. Unlike many civic ecology practices, this project was motivated by community response to the long-developing environmental, social, and economic impacts of an INS and includes involvement of a major corporation. In response to local residents’ concerns and following months of planning, over 2,000 volunteers removed more than 760 m3 of Amur bush honeysuckle from 30 acres of land along Fall Creek during a single day. The honeysuckle removal served ecological and environmental goals of removing an invasive species, but it also helped foster in citizens a sense of place and connection with Indianapolis’ waterways, reflecting local history and culture. Aspects of the project can serve as a model for action in other cities.
THE FAIRFAX NEIGHBORHOOD

- Quarter mile
- Neighborhood Composition
  66% Minority Population
- Household Income
  75% Earn <$50K
- Housing Occupancy
  70% Owner/Renter Occupied
  30% Vacant

— Social Assets and Vulnerabilities Index, Polis Center, IUPUI
SHARED VALUES

- Environment
- Business
- Community

- Social
- Environmental
- Economic
WHAT ARE COMBINED SEWERS?

- 6 Billion Gallons Annually
- $1.6 Billion Fix Through 2025
- KIB Can Help!

[Diagram of stormwater management system]
100% ABOVE SURFACE STORMWATER SEPARATION

• Environment: Create Amenities in a Low Income Neighborhood with Less Neighborhood Disruption

• Business: Save CEG Money

• Community: Beautify Neighborhood, and Bring Neighbors Together, and Employ/Enrich Youth
BEGIN WITH 50 TREES

1st Community Tree Planting in the Fairfax Neighborhood: May 2014
STORMWATER PLANTERS

• RFQ for Planting Partner & Subcontracting Contractor
• KIB Oversight Of Project & Community Engagement
MORE TREES!

2\textsuperscript{nd} Community Tree Planting in the Fairfax Neighborhood: \textit{October 2014}
URBAN NATURALISTS

- Paid Horticulturist and 4+ College-Age Students
- 2015-2016 Stormwater Planter Maintenance
  (Watering, Weeding, Litter Pick-Up & Plant Replacement)
- “Green Collar Job”  
  March – October
- Enrichment Activities Over Summer Months
STRATEGIC KIB OPPORTUNITY

- Potential Long-Term Income Stream for Future Projects
- Engaging New Communities
- Next Generation of Environmental Stewards
- More Trees & Natives in the City!
THANK YOU!
Q&A with speakers.

Any questions?
Upcoming Webinar

Success Stories: Successful Five Star Projects
Tuesday, December 15, 11am PT/2pm ET