

# Iowa's River Restoration Toolbox Level 1/Base Training

## 2020

August 31<sup>st</sup> - September 3<sup>rd</sup>

Clive Aquatic Center  
1801 NW 114th St.  
Clive, IA 50325



## What to Expect

- Four days of team-based training in the latest stream assessment and restoration practices conducted by restoration experts, lunch included during field days
- Level 1 Certificate of Completion
- Listed on IRR and ISWEP websites as having completed the training requirements
- Eligibility to participate in Level 2 Advanced Training
- Professional Development Hours (PDHs)
- Course Fee: \$600 per person

## Course Details

Learn about streambank stabilization and restoration techniques from Iowa experts and how to use the new IDNR Toolbox to restore stream functions. Due to the COVID-19 pandemic, this class will be implemented using a combination of webinars, online interactive team activities, and live stream assessment using social distance protocols.

## Featured Speaker: George Athanasakes

George is the Ecosystem Restoration Program Leader for Stantec, and has 25 years of experience working on innovative stream restoration projects nationwide. George has taught at numerous restoration workshops, and worked with the IDNR river restoration planning team to create Iowa's River Restoration Toolbox. Additional instructors will supplement George's presentations.

## Who should attend?

Design professionals including engineers and landscape architects, biologists, ecologists, project managers, WMA coordinators, natural resources specialists, urban conservationists, university faculty, floodplain managers, environmental professionals in Iowa and other interested professionals.

## Register Today!

[www.iowaRivers.org](http://www.iowaRivers.org)



## Questions?

Contact Sara Carmichael  
[sara@iowarivers.org](mailto:sara@iowarivers.org)

## Defining the Iowa River Restoration Toolbox

The Toolbox was developed by the Iowa Department of Natural Resources to assist Iowa designers and reviewers of stream stabilization and restoration projects by providing proven techniques that incorporate natural materials, such as logs, rocks, and live plantings. Among the many techniques included in the Toolbox are: longitudinal peaked stone toe protection, j-hook vanes, rock arch rapids, oxbows, riparian corridor restorations, and tree/shrub plantings. Included are an assessment method and reviewable design checklists to aid in decision making among multidisciplinary teams (i.e. – funding partners, designers, project managers, and contractors etc.). The Toolbox also provides detailed design guidance, drawings and specification requirements to assist with project bidding.

## Toolbox Development

The goal of this resource is to assist design teams with the evaluation of streams and the selection of suitable practices that will result in successful projects. Just as important, the Toolbox will prevent the installation of practices that are unsuccessful and destructive to the stability of river ecosystem. A national expert in the design and installation of these practices was hired to research and merge common engineering and restoration practices into useful assessment and design guidance. It was then reviewed and adapted by a statewide team of Iowa engineering, river restoration, project management, and aquatic habitat professionals from various cities, state agencies, federal, and non-governmental organizations with a stake in its development. Efficiencies are anticipated with the use of the Toolbox from inception to permitting, because reviewers can work from generally accepted design assumptions and calculations to support the selected practices.

## Why Use the Toolbox?

This resource focuses on natural techniques in streambank stabilization and stream restoration that provide multiple benefits while remaining the most cost-effective options. The Toolbox will help you understand the driving factors that cause an unstable stream segment to erode or damage infrastructure prior to jumping to solutions, which leads to long-term stable, economically beneficial solutions. It takes the user through the major steps of stream assessment, including field-collected stream survey data, key stream stability issues, and multiple practices and techniques that are appropriate for the type of restoration project. The Iowa DNR State Revolving Fund (SRF) Sponsored Project Program will be requiring its applicants to use the Toolbox to be eligible for the Clean Water Loan Program. Through this program, wastewater utilities can finance and pay for projects, within or outside the corporate limits, that cover best management practices for nonpoint source pollution control.

## What Should I Wear?

Plan on clothing and foot attire for muddy and wet conditions. Hip waders or long rain boots will be needed. Please bring extra footwear for the classroom. Bring several pencils and a clipboard. Bring a laptop. Please also view basic surveying <https://www.youtube.com/watch?v=OWERdvgoq8w>



## Questions?

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[sara@iowarivers.org](mailto:sara@iowarivers.org)

# Iowa's River Restoration Toolbox

## Level 1/Base Training

*Due to pandemic conditions in Iowa, portions of this training have been converted to a virtual experience.*

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### **Monday, August 31<sup>st</sup>**

#### **Introduction to River Restoration Toolbox**

**(All modules on day 1 conducted via live webinar)**

- 8:00am - 8:30am** Module 1: Welcome & Course Overview
- 8:30am - 9:00am** Module 2: What Causes Stream Instability
- 9:00am - 9:30am** Module 3: What is a Healthy Stream? How to ID & Evaluate Stream Function
- 9:30am - 10:00am** Module 4: Basic Hydrologic/Hydraulic Calculations & Impact of Urbanization
- 10:00am - 10:15am** Break
- 10:15am - 11:15am** Module 5: Morphology, Facets, Ratios & Stream Classification
- 11:15am - 11:45am** Module 6: Field Methods to Determine/Verify Bankfull Elev., XS Area & Discharge
- 11:45am-1:00pm** Lunch Break
- 1:00pm-2:00pm** Module 11: Vegetation Establishment, Erosion-Sediment Control, Pollution Prevention
- 12:45pm-1:00pm** Break
- 2:00pm-3:00pm** Module 15: Joint Permit Applications in Iowa's Stream Mitigation Method

### **Tuesday, September 1<sup>st</sup> (Arrive at Clive Aquatic Center)**

- 8:00am - 8:15am** Module 7: Field Exercise Forms & Procedures - Meet in Field to Review Forms
- 8:15am - 12:00pm** Field Exercise 1
- 12:00pm-1:00pm** Lunch Break
- 1:00pm-3:00pm** Teams Work Up Field Data
- 3:00pm-3:30pm** Teams Present Exercise 1
- 3:30pm-4:00pm** Module 8: Channel Evolution Implications and Drivers of Instability
- 4:00pm-4:30pm** Module 9: BANCS Model
- 4:30pm-5:00pm** Module 10 - Review of Field Day 2 Data Collection

# Level 1/Base Training Agenda

## Wednesday, September 2<sup>nd</sup>

- 8:00am - 12:00pm** Field Exercise 2, Meet in Field
- 12:00pm-1:00pm** Lunch Break
- 1:00pm-1:30pm** Module 12: Data Entry into the River Restoration Toolbox
- 1:30pm-3:30pm** Teams Enter Data & Finalize Presentations
- 3:30pm-4:00pm** Teams Present Findings and Stability & Bank Assessments
- 4:00pm-5:00pm** Module 13: Understanding the Key Instability Drivers to Inform Design/Decision Matrix

## Thursday, September 3<sup>rd</sup>

- 8:00am-9:30am** Module 14: Overview of Practices
- 9:30am-10:00am** Review Teams River Restoration Toolbox & Discuss Appropriate Practices
- 10:00am-10:15am** Break
- 10:15am-10:45am** Module 16: Overview of Geomorphic Channel Design & Preview of Level 2 Course
- 10:45am-12:00pm** Module 17: Keeping Parameters within Functioning Range & Real World Case Studies

*Certificates of completion will be provided via email.*

### COVID-19 PRECAUTIONS

We care about your safety – and ours! While we are unable to completely eliminate all live classroom or fieldwork to offer a meaningful workshop, we will be practicing way to minimize virus hazards in the following ways:

- Anyone exhibiting cough, sore throat, or fever symptoms should not attend sessions.
- One travel day has been eliminated from the 4-day event.
- All participants will be expected to practice >6' distancing (12' distance between speakers and participants).
- Masks for participants will be required during seminars. They should be accessible at all times and be used during fieldwork or any other time if a <6' separation distance is anticipated between fieldwork team partners.
- Microsoft Teams will be used throughout the training for virtual collaboration and live attendance is optional, with the exception of the fieldwork portion of the training.
- Individuals can drive themselves to site visits.
- Hand sanitizer will be provided.
- Surfaces and equipment will be disinfected after use.
- All meals provided will consist of box lunches from a caterer.



### Questions?

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