

# ZEBRA AND QUAGGA MUSSEL MITIGATION

**March 2-3, 2020**  
**Hilton Garden Inn Charlotte Uptown**  
**Charlotte, NC**



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Photo Credit: Bureau of Reclamation



EUCI is authorized  
by IACET to offer 1.1  
CEUs for the course

# OVERVIEW

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Proliferation of invasive zebra and quagga mussels pose a host of challenges such as damaging or clogging industrial infrastructure, adversely impacting native fish and mussel populations, decreasing property value, and discouraging recreation. Whether you are a utility or a park and recreation department, invasive mussels are an expensive nuisance when populations aren't controlled.

The Zebra and Quagga Mussel Mitigation training course will educate participants on the biology of mussels, distribution patterns, early identification and prevention techniques, the adverse impacts of invasive mussel infestations, control techniques, and touch on public communication strategies. This course will walk you through the steps of zebra and quagga mussel mitigation from monitoring and planning through control techniques and implementation.

# LEARNING OUTCOMES

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After attending the course, participants will successfully be able to:

- Describe zebra and quagga mussel biology including reproduction, population dynamics, growth patterns, and feeding
- Define distribution patterns including vectors for population expansion
- Recognize environmental changes due to mussel invasion
- Explain the adverse impacts that mussels will have on the environment, recreation, drinking water plants, reservoirs, pipelines, and power plants
- Identify general control strategies
- Construct a zebra mussel monitoring program beginning with detection upon first arrival
- Anticipate infestation challenges and identify a control method
- Review other biofouling challenges
- Apply public outreach and communication strategies

# WHO SHOULD ATTEND

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This course is designed for anyone who wishes to obtain a basic understanding of zebra and quagga mussel mitigation:

- Invasive Species Specialists
- Aquatic Biologists
- Source Water Specialists
- Watershed Managers
- Hydroelectric dams
- Water utilities
- State agencies
- Parks departments
- Boating organizations
- Environmental groups
- Distribution System Operators, Maintenance
- General Managers, Directors, Project Managers
- Engineers
- Public Communications teams
- US Bureau of Reclamation
- US Fish & Wildlife
- US Army Corps of Engineers

REGISTER TODAY! CALL 303-770-8800 OR VISIT [WWW.EUCI.COM](http://WWW.EUCI.COM)



# AGENDA

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MONDAY, MARCH 2, 2020

<b>8:00 – 8:30 am</b>	<b>Registration and Continental Breakfast</b>
<b>8:30 – 8:45 am</b>	<b>Course Introductions and Objectives</b>
<b>8:45 – 9:45 am</b>	<b>Biology and Mussels Overview</b> <ul style="list-style-type: none"><li>• Reproduction</li><li>• Population Dynamics</li><li>• Growth Patterns</li><li>• Feeding</li></ul>
<b>9:45 – 10:00 am</b>	<b>Morning Break</b>
<b>10:00 – 11:00 am</b>	<b>Environmental Requirements</b> <ul style="list-style-type: none"><li>• Environmental Limits</li><li>• Distribution Patterns</li><li>• Vectors of Population Expansion</li><li>• Environmental Changes Due to Mussel Invasion</li></ul>
<b>11:00 am – 12:00 pm</b>	<b>Impacts</b> <ul style="list-style-type: none"><li>• Environmental Impacts</li><li>• Recreation Impacts</li><li>• Impacts on Drinking Water Plants, Reservoirs, and Pipelines</li><li>• Impacts on Power Plants</li></ul>
<b>12:00 – 1:00 pm</b>	<b>Group Luncheon</b>
<b>1:00 – 2:00 pm</b>	<b>General Control Strategies</b> <ul style="list-style-type: none"><li>• Proactive V. Reactive</li><li>• Chemical</li><li>• Physical</li><li>• Biological</li></ul>
<b>2:00 – 3:00 pm</b>	<b>Chemical Strategies – Overview of Experience and Research Conducted</b> <ul style="list-style-type: none"><li>• Chemicals Available/Chemicals Approved</li><li>• Methods of Chemical Addition</li><li>• Environmental Concerns</li><li>• Neutralization of Chemical Discharges</li></ul>
<b>3:00 – 3:15 pm</b>	<b>Afternoon Break</b>
<b>3:15 – 4:15 pm</b>	<b>Physical Methods – Overview of Experience</b> <ul style="list-style-type: none"><li>• Strainers</li><li>• Filters</li><li>• UV Systems</li><li>• Other</li></ul>
<b>4:15 – 5:00 pm</b>	<b>Biological Methods</b> <ul style="list-style-type: none"><li>• Biopesticides</li><li>• Bio Bullets</li><li>• Fish</li><li>• Others</li></ul>

# AGENDA

TUESDAY, MARCH 3, 2020

<b>8:00 – 8:30 am</b>	<b>Continental Breakfast</b>
<b>8:30 – 9:30 am</b>	<b>Other Control Methods, Used and Proposed</b> <ul style="list-style-type: none"><li>• Coatings</li><li>• Copper Ion Generators</li><li>• pH Adjustments</li><li>• Ultrasound</li><li>• Bubble Screens</li><li>• Thermal Control</li></ul>
<b>9:30 – 10:00 am</b>	<b>Monitoring</b> <ul style="list-style-type: none"><li>• Monitoring for First Arrival</li><li>• Monitoring for Optimizing Control Strategy</li><li>• Monitoring for Success Control</li><li>• Monitoring for Population Growth</li></ul>
<b>10:00 – 10:30 am</b>	<b>Living with an Infestation</b> <ul style="list-style-type: none"><li>• Firsthand Account of Problems Encountered</li><li>• Year 1</li><li>• Year 4 and Beyond</li><li>• Questions and Answers</li></ul>
<b>10:30 – 10:45 am</b>	<b>Morning Break</b>
<b>10:45 – 11:45 am</b>	<b>Other Biofouling Issues</b> <ul style="list-style-type: none"><li>• Colonial Hydroids</li><li>• Bryozoa</li><li>• Algae</li><li>• Other</li></ul>
<b>11:45 am – 12:00 pm</b>	<b>Public Outreach – the Most effective Method for Prevention</b> <ul style="list-style-type: none"><li>• Communications</li></ul>
<b>12:30 – 1:00 pm</b>	<b>Wrap up: Questions, Comments, and Remarks</b>

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# COURSE INSTRUCTORS



## Renata Claudi

**Environmental Scientist, RNT Consulting**

Ms. Claudi is an environmental scientist with over 30 years of diverse business and technical experience. After more than 15 years in the electric power industry, where she established the mussel mitigation program for Ontario's largest electricity utility, Ms. Claudi formed RNT Consulting Inc. to respond to the broader industry need for expert mussel support. As aquatic nuisance species became geographically more widespread, Ms. Claudi has provided mussel expertise internationally on the various aspects of alien species invasions, including their economic impact, protection of assets, selection of appropriate control options, and installation of these control options.



## Tom Prescott

**Chief Engineer, RNT Consulting**

Mr. Prescott has over 30 years of engineering and project management experience on design, installation, and testing of mechanical and process systems in various areas including military, petrochemical, and electric power production industries. Mr. Prescott has particular expertise in vulnerability assessments and pilot testing of control facilities for mussel biofouling control. He has experience with many clients throughout Canada, U.S.A., and overseas and is currently a partner and senior project engineer at RNT Consulting Inc.

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## REQUIREMENTS FOR SUCCESSFUL COMPLETION

Participants must sign in/out each day and be in attendance for the entirety of the course to be eligible for continuing education credit.

## INSTRUCTIONAL METHODS

This program will use PowerPoint presentations and discussion.

## EVENT LOCATION

A room block has been reserved at the **Hilton Garden Inn Charlotte Uptown**, 508 E M.L.K. Jr Blvd, Charlotte, NC 28202, for the nights of March 1-3, 2020. Room rates are \$209 plus applicable tax. Call **1-704-373-0917** for reservations and mention the **EUCI group code**. The cutoff date to receive the group rate is February 14, 2020 but as there are a limited number of rooms available at this rate, the room block may close sooner. ***Please make your reservations early.***

## IACET CREDITS



EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

**EUCI is authorized by IACET to offer 1.1 CEUs for the course**

## REGISTER 3, SEND THE 4TH FREE

Any organization wishing to send multiple attendees to this course may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.

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# REGISTRATION INFORMATION

# EVENT LOCATION

## Mail Directly To:

EUCI  
6400 S Fiddlers Green Cir., Suite 1620  
Greenwood Village, CO 80111  
OR, scan and email to: [conferences@euci.com](mailto:conferences@euci.com)

**WWW.EUCI.COM**

**p: 303-770-8800**

**f: 303-741-0849**

A room block has been reserved at the **Hilton Garden Inn Charlotte Uptown**, 508 E M.L.K. Jr Blvd, Charlotte, NC 28202, for the nights of March 1-3, 2020. Room rates are \$209 plus applicable tax. Call **1-704-373-0917** for reservations and mention the **EUCI group code**. The cutoff date to receive the group rate is February 14, 2020 but as there are a limited number of rooms available at this rate, the room block may close sooner. **Please make your reservations early.**

## PLEASE REGISTER

### ☐ ZEBRA AND QUAGGA MUSSEL MITIGATION COURSE

MARCH 2-3, 2020: US \$1395

Early bird on or before February 14, 2020: US \$1195

## ENERGIZE WEEKLY

Energize Weekly is EUCI's free weekly newsletter, delivered to your inbox every Wednesday. We provide you with the latest industry news as well as in-depth analysis from our own team of experts. Subscribers also receive free downloadable presentations from our past events.



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How did you hear about this event? (direct e-mail, colleague, speaker(s), etc.)

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List any dietary or accessibility needs here

### CREDIT CARD INFORMATION

Name on Card

Billing Address

Account Number

Billing City

Billing State

Exp. Date

Security Code (last 3 digits on the back of Visa and MC or 4 digits on front of AmEx)

Billing Zip Code/Postal Code

**OR** Enclosed is a check for \$ \_\_\_\_\_ to cover \_\_\_\_\_ registrations.

### Substitutions & Cancellations

Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before January 31, 2020 in order to be refunded and will be subject to a US \$195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of course cancellation, EUCI's liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our offices at 303-770-8800.

EUCI reserves the right to alter this program without prior notice.

