



**EarthTec QZ:  
Control of Dreissenid Mussels with a More Rational  
Use of Copper**  
David Hammond, PhD

# Priority Sites for Mussel Control

- **Open Waters (lakes)**
- **Flowing Waters (pipelines, aqueducts)**
- **Closed Systems (ballast, sprinkler)**

# Zebra Mussels discovered in Lake Minnewashta, Minnesota

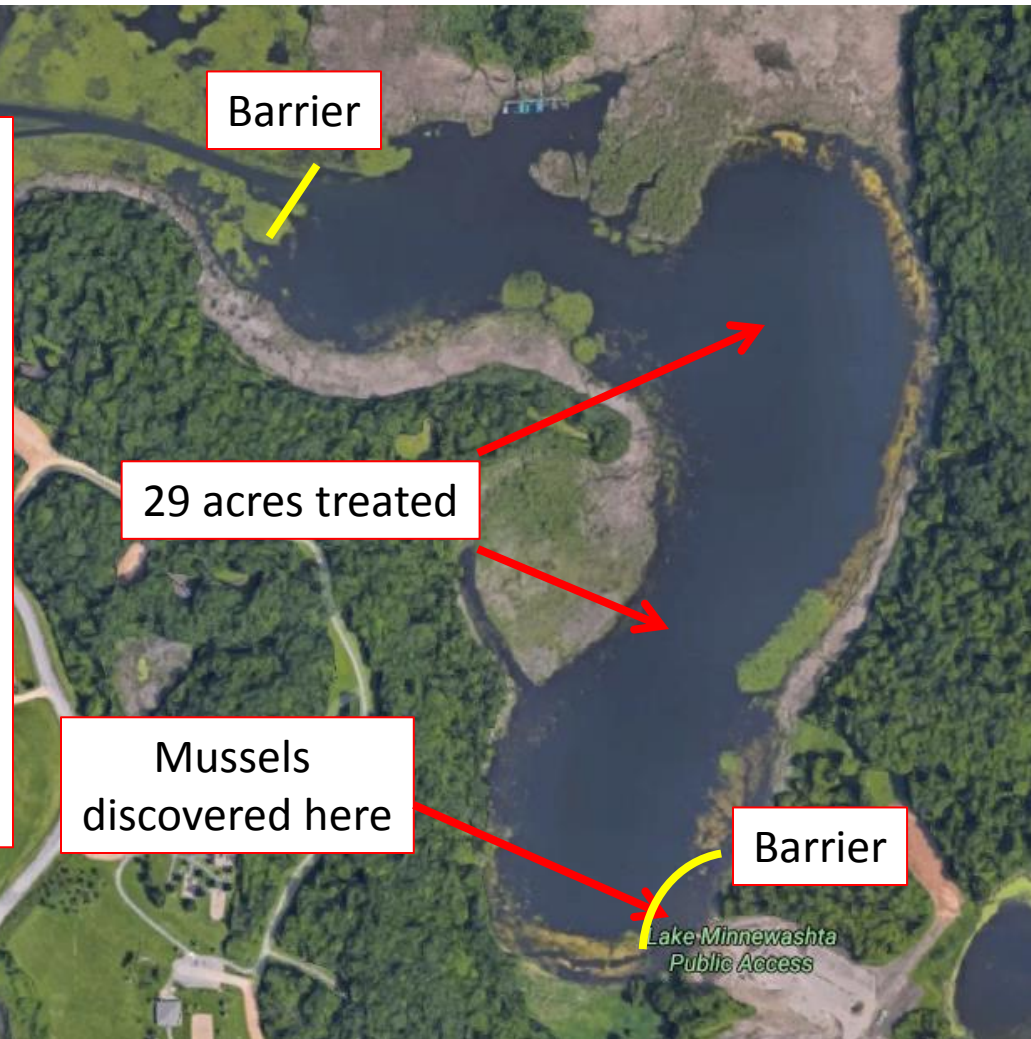
August 18, 2016

Mussel eradication led by:  
**Minnehaha Creek  
Watershed District**

Supported by:

- **Lake Preservation Association**
- **Carver County**

EarthTec QZ applied by:  
**PLM Lake and Land Mgt**

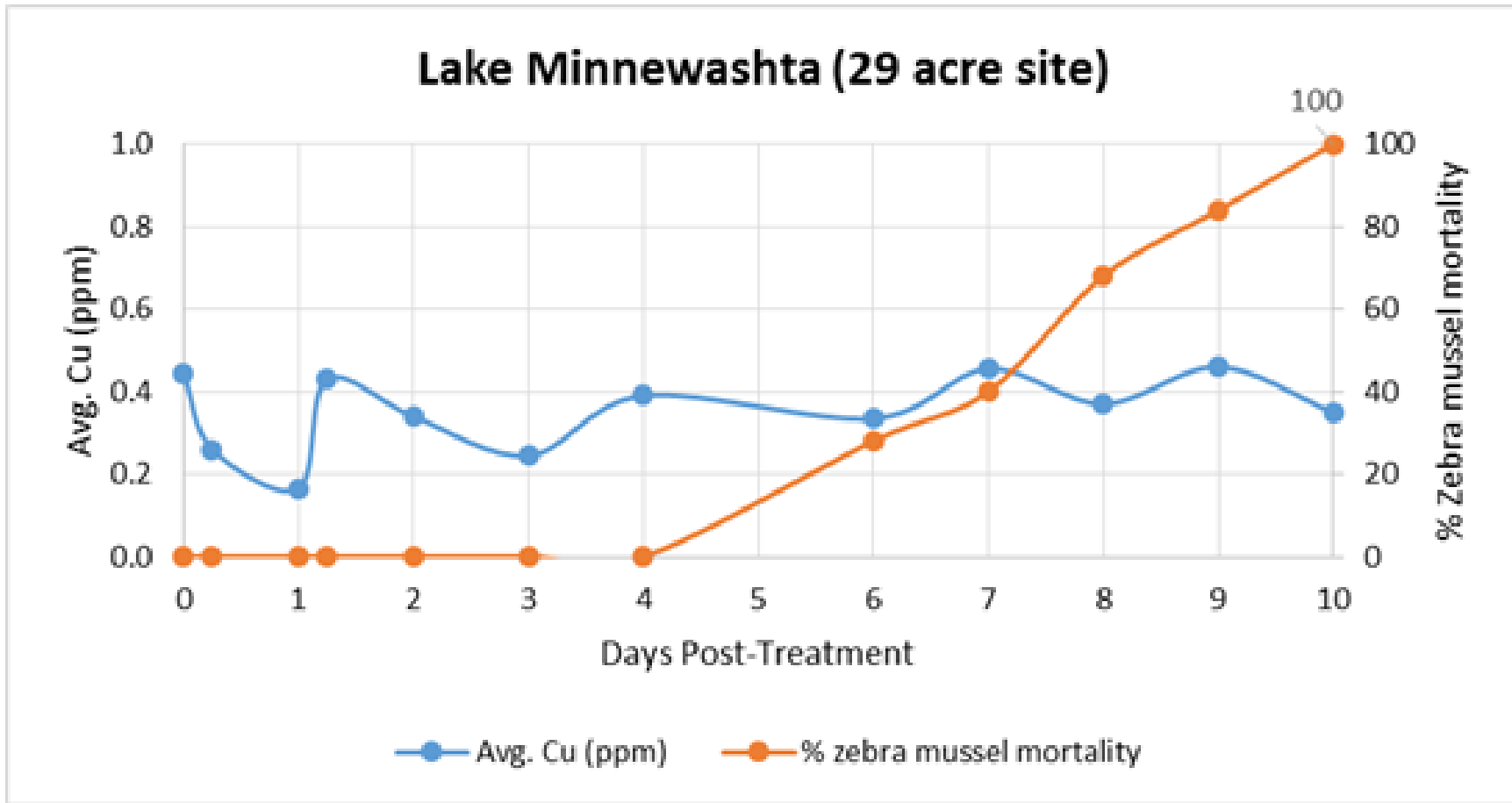




# Eradication of Zebra Mussels from Lake Minnewashta, Minnesota

Sept 13-23, 2016

Water Temperature 19°C = 66°F



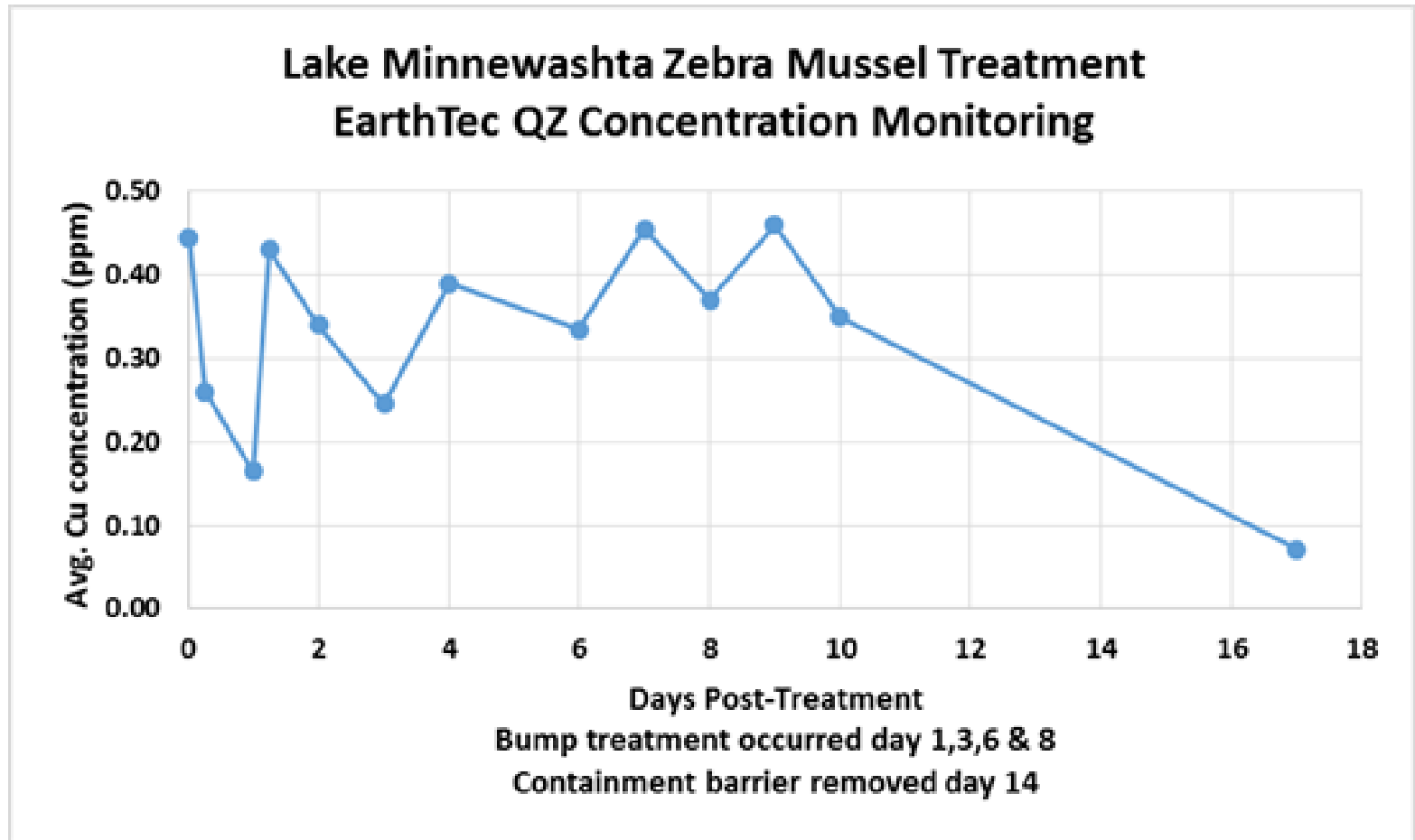
Source: Eric Fieldseth and Jill Sweet, Minnehaha Creek Watershed District



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## Summary of QZ Dosing and Costs

<b>Lake size, acres</b>	<b>29</b>
<b>Avg depth</b>	<b>9 ft</b>
<b># of Applications</b>	<b>5</b>
<b>Treatment period</b>	<b>10 days</b>
<b>Sum of copper applied (5 doses)</b>	<b>1.06 mg/L</b>
<b>Chemical cost</b>	<b>\$22,500</b>
<b>Cost per acre</b>	<b>\$776</b>
<b>Cost per million gallons</b>	<b>\$265</b>

*Work performed by PLM Lake and Land Management, Inc.*





# EarthTec Chemistry

EarthTec is:

- **Liquid** formulation containing **5% copper** by volume
- Made from copper sulfate + ET-3000
- Unique features:
  - **0.3 pH, yet won't burn your skin**
  - Copper is **99.99% cupric ion form (Cu<sup>++</sup>)** so it is **readily bioavailable**
  - **Self-dispersing**, so no need for mixing
  - Infinitely soluble in water, stays suspended, **will not settle** out
  - Low concentrations yield high performance: **30-200 ppb copper**
  - Adjuvant Properties: **Transport of Copper Across Cell Membrane**



# EarthTec Chemistry

- **EPA Registered** as an Algaecide/Bactericide
- Registered in **All 50 States** as Algaecide/Bactericide, in 26+ States as Molluscicide
- Certified to **NSF** Standard 60
- Reduces **Labor** Costs







# Thank you!

David Hammond, PhD

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