An Adaptive and Prescriptive Aquatic Vegetation Management Approach

28th Annual
Western Aquatic Plant Management Society Meeting

Thomas J. McNabb

CLEAN LAKES INC.
Aquatic Ecosystem Restoration & Maintenance

An Adaptive and Prescriptive Aquatic Vegetation Management Approach

Public Sensitization
Preprogram Evaluations
Data Incorporation into Field Operations
Treatment Documentation
Post Treatment Reviews and Evaluations

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Public Sensitization

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As of July 11, 2008, there have been 945 (1,045 less start number of 100) hits on the web site since June 3, 2008.

1045

Do you think the 2008 Bonner County Eurasian Watermilfoil Control Program is functioning properly to date?

38 votes

Yes	**52.63%**
Neutral	**7.89%**
No	**39.47%**

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2008 EWM Information Center
Poll Questions and Answers From www.pendoreillemilfoil.com

	Responses	Postive	Neutral	Negative
Do you think the 2008 Bonner County Eurasian Watermilfoil Control Program is functioning properly to date?	53	30	5	18
Do you clean the weeds off your boat and trailer when you pull it out of the water?	26	22	0	4
Are the new Planned Treatment Schedules below sufficient to properly inform the public of the times areas are	38	22	0	16
Are the treatment maps sufficient to properly inform the public of the areas scheduled for treatment?	71	33	3	35
Do you know what the threat of quagga mussels are to Pend Oreille Lake and River?	29	25	0	4
Would you like to tour the 2008 EWM treatment sites?	27	20	0	7
Is there enough information here to answer your questions?	20	2	11	
Is there enough information to answer your questions on control options?	24	17	3	4
Do you feel there is sufficient data here on the herbicides being used in the program	25	6	1	18
Do you feel the 2008 EWM Program is supplying the required data to properly inform the public of what is being done?	26	17	3	6
TOTAL	339	194	26	112

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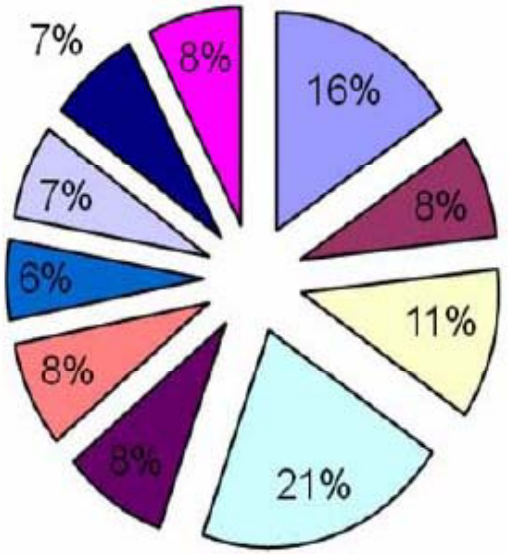
Percentage of Votes to Poll Questions
2008 Eurasian Watermilfoil Web Site



- Do you think the 2008 Bonner County Eurasian Watermilfoil Control Program is functioning properly to date?
- Do you clean the weeds off your boat and trailer when you pull it out of the water?
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- Would you like to tour the 2008 EWM treatment sites?
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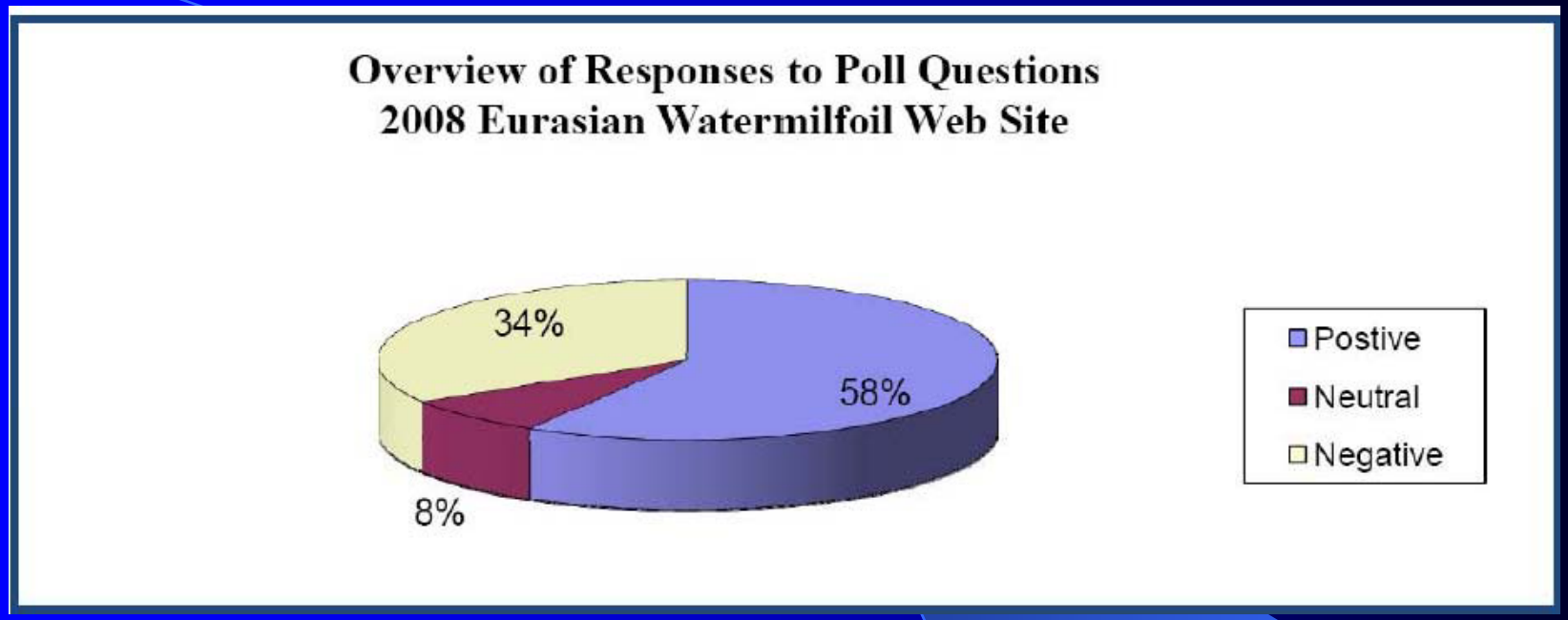

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Pre-Program Evaluations

May 22, 2008 Herbicide Manufacturers Tour. Representatives from Bonner County, ISDA, CLI, Applied Biochemists, SePro, Sygenta, & UPI.

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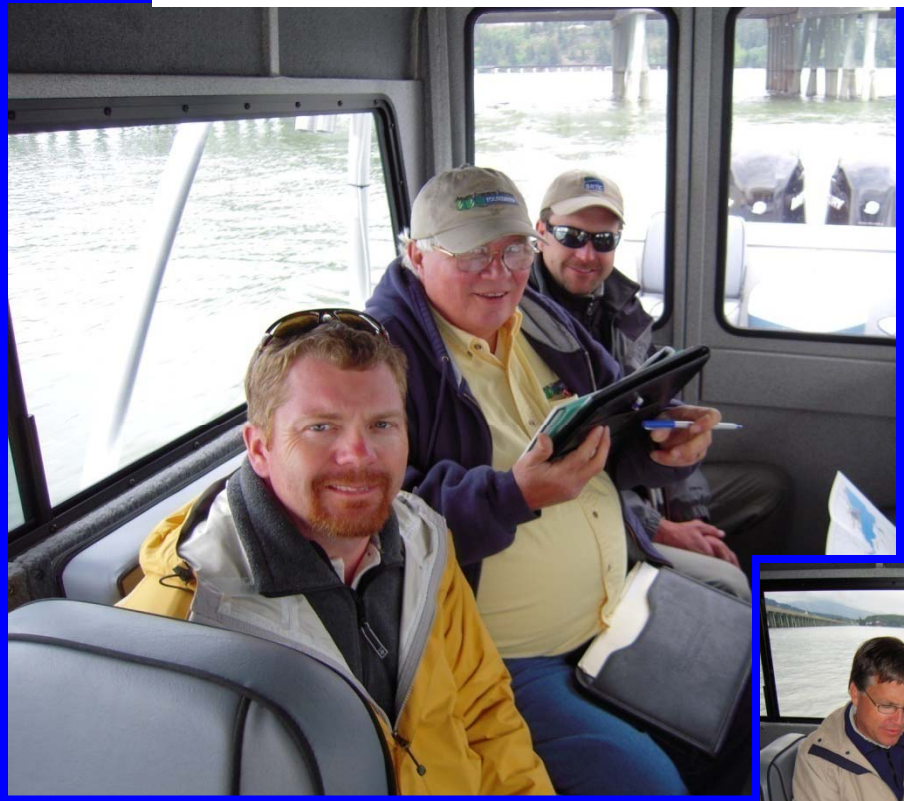
May 22, 2008 Herbicide Manufacturers Tour. Each Site was reviewed and manufacturers provided herbicide recommendations.



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May 23, 2008 Herbicide Manufacturers Project Review/Recommendation Meeting

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Plant Management in Florida Waters

All you want to know about Florida's lakes, rivers, springs, marshes, swamps and canals

How to Build Weighted Trailing Hoses

by Bill Haller(1), Lyn Gettys(1), Margaret Glenn(1) and Greg Reynolds(2)
(1)University of Florida/IFAS Center for Aquatic and Invasive Plants – Gainesville, FL
(2)Syngenta Professional Products – Greensboro, NC
Aquatics, Winter 2007 / Vol. 20, No. 4

MAIN INDEX

Figure 1.
Bottom acre-foot treatment, with trailing weighted hoses. This system delivers the herbicide directly into the weedbed for maximum efficiency and lower cost.

Figure 2.
Whole water column

Back in the 70s (that's 1970s for the younger reader), when Elvis and disco were king and before iPods, PCs, HDTV, cell phones and whole-lake treatments with slow-acting enzyme-inhibiting herbicides like fluridone, most aquatic herbicide applicators were using weighted trailing hoses to treat the bottom acre-foot to control hydrilla and other submersed plants.

Say what?!? Yes, bottom acre-foot and weighted hoses! Read on...

Let's say you had early-season hydrilla that was 3 to 4 feet tall and growing in water 7 to 10 feet deep. Back in the day, you could inject contact herbicides such as diquat, copper and endothall through hoses so that the herbicide was delivered into the plant bed at the bottom of the water column, resulting in less herbicide applied and less money spent (Figure 1). The term "bottom acre-foot" may not be entirely correct, but that was what the method was commonly called. Bill McClintock (Director of Winter Park's Aquatic Weed Control program at the time) had a pontoon boat loaded with a 500-gallon sprayer equipped with four 20-foot trailing weighted hoses spaced about 10 feet apart. Bill would tank-mix 500 gallons of water with the appropriate herbicide and treat 5 acres along the shorelines with an output of 100 gallons per acre (GPA) in the 30-foot wide swath, being careful to miss docks and diving boards. This type of system was not unique to Winter Park – everyone used some variant of this setup to increase efficiency and reduce costs (after all, diquat was $26/gallon, endothall was $20/gallon and copper sulfate was 15¢/pound).

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The main goal of the bottom acre-foot treatment was to place the herbicide where the weeds were growing – in other words, why treat the upper half of the water column when the weeds were in the lower half? This philosophy explains why granular versions of several products have been developed – to facilitate the placement of herbicide directly in target weedbeds.

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Littoral Zone Treatment Technology

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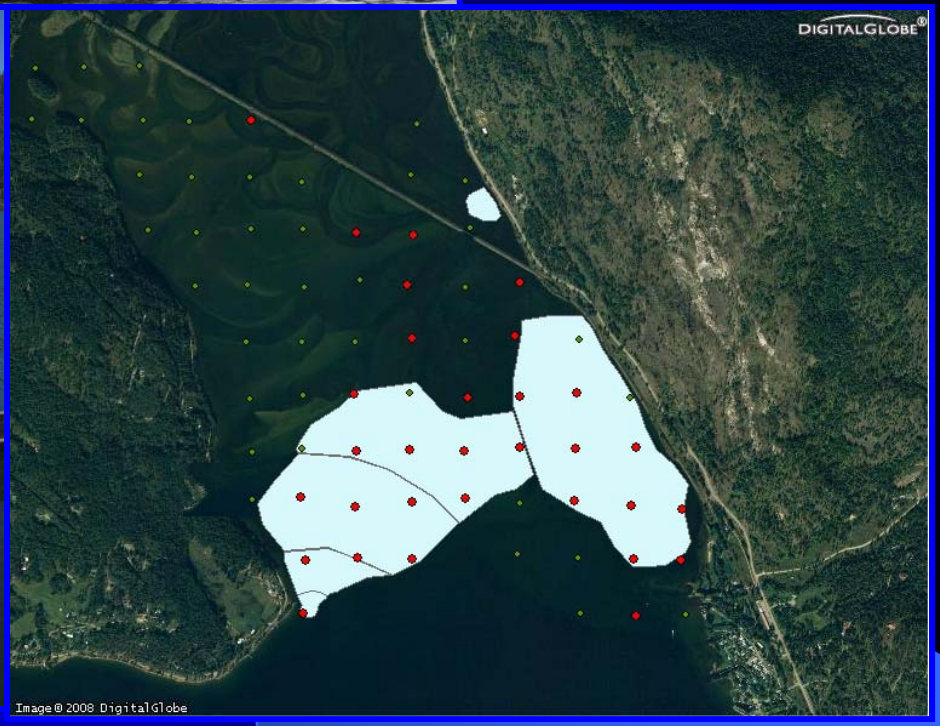

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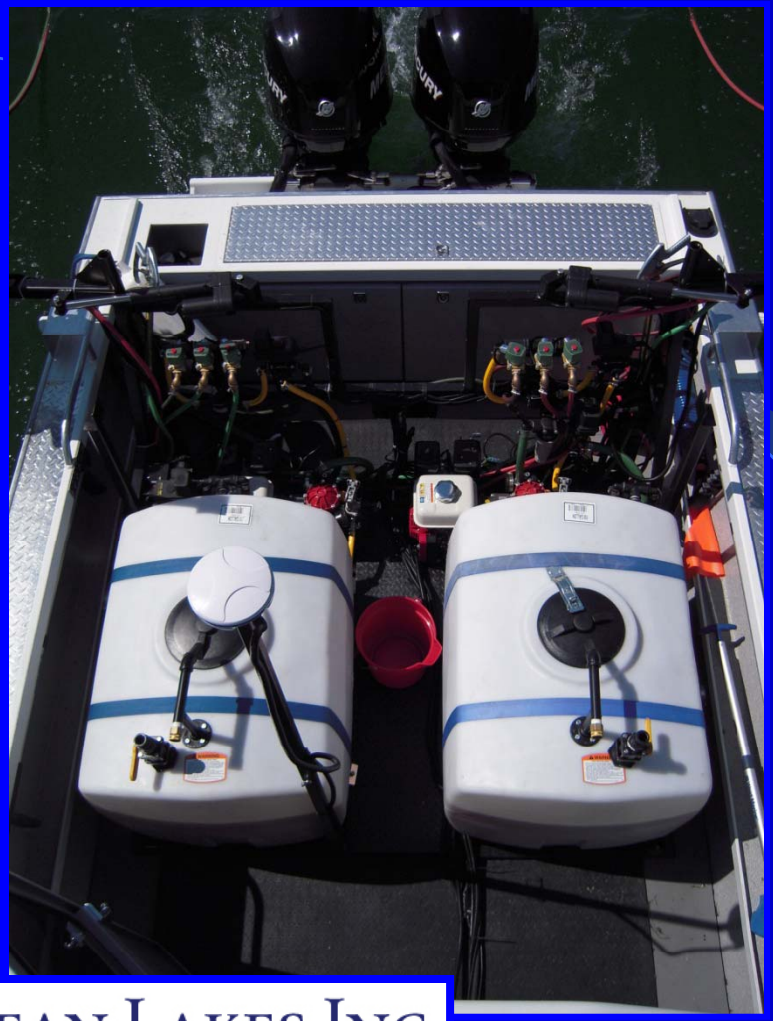
Treatment Documentation



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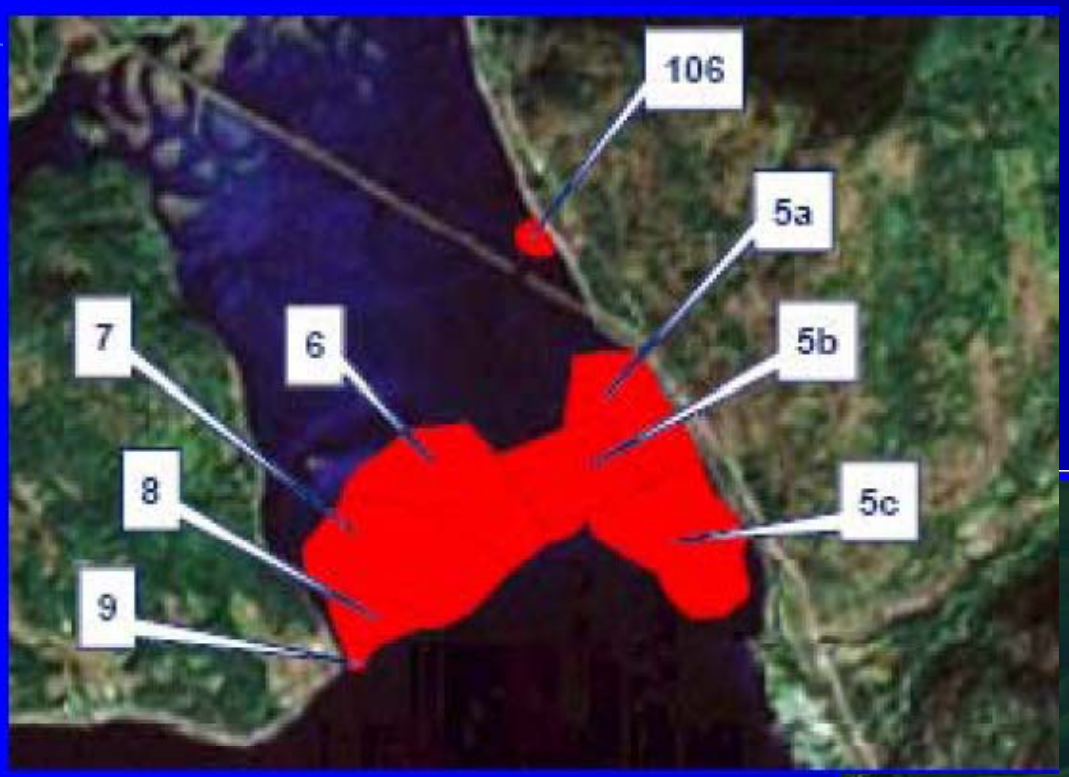

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Post Treatment Reviews and Evaluations

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Post Treatment Reviews and Evaluations

Aquatic Plant Community and Eurasian watermilfoil (*Myriophyllum spicatum* L.) Management Assessment in Lake Pend Oreille, Idaho for 2008

A Report to the Idaho State Department of Agriculture

John D. Madsen and Ryan M. Wersal
Mississippi State University
Geosystems Research Institute
Box 9652
Mississippi State, MS 39762-9652
March 2009

Geosystems Research Institute Report 5032

MISSISSIPPI STATE UNIVERSITY

GRI

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2007 Operations

2,084 Acres Treatment for
$1,647,619.40 ($790.60 Per Acre)
~~$13,305.68~~ under budget

2008 Operations

1,924.6 Acres Treatment for
$1,137,119.64 ($590.83 Per Acre)
$213,008.36 under projected program costs

2008 Operations

Approximately 25% cost saving, increased efficacy

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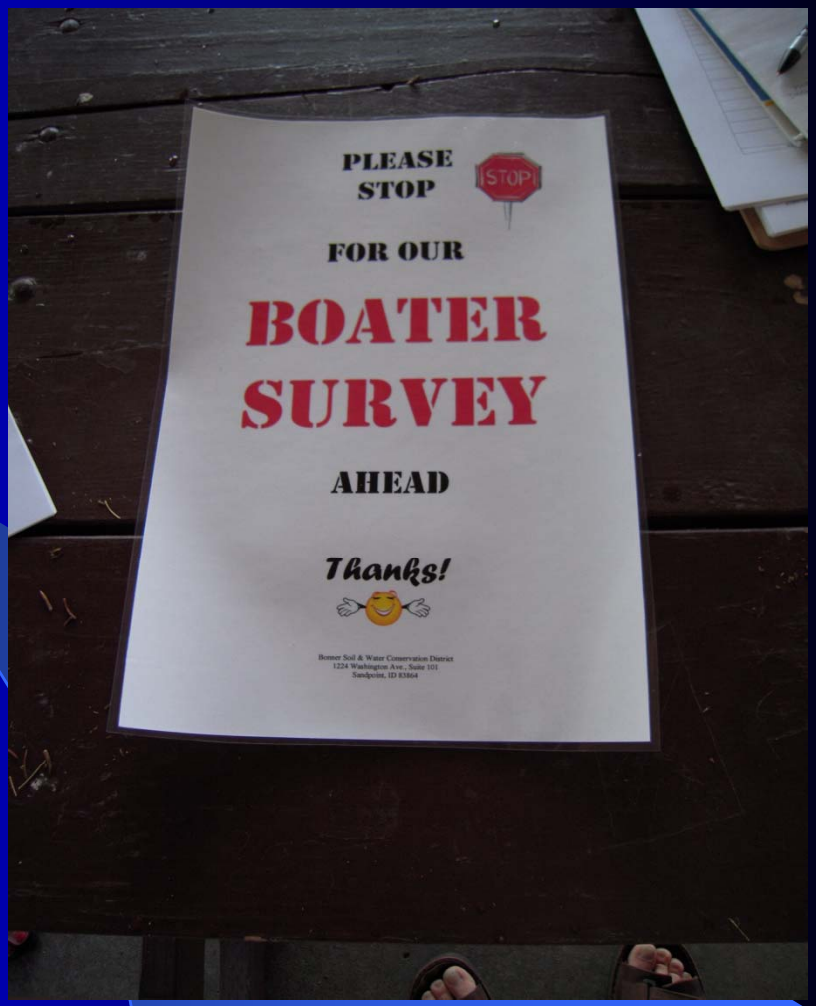

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Lake Pend Oreille & The Pend Oreille River