



EURASIAN WATERMILFOIL CONTROL IN THE INLAND EMPIRE 2008 END-OF-YEAR REPORT



Clockwise from the top: Posting notices-ISDA, dissolved oxygen readings-IDFG, Captain-KCNWC, Diver survey-Coeur d'Alene Tribe, water sampling-KCNWC, herbicide application-Lakeland Restoration Services

November 2008
Nina Eckberg, Project Manager/Chair-IECWMA
Major funding provided by the Idaho State Department of Agriculture

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± Phase I & Phase II (2006-2007) IECWMA/EWM Control Project End-of-Year Reports can be found at the offices of the Idaho State Department of Agriculture (ISDA)/EWM Control Program, P O Box 790, Boise ID 83701 or phone 208/332-8615 and ask for the Aquatic Plant Specialist or contact by email weeds@agri.idaho.gov

ACKNOWLEDGEMENT OF PARTNERS

The IECWMA wishes to thank all contributors and/or partners with our 2008 Eurasian Watermilfoil (EWM) Control Project; the participation was greatly appreciated.

- ✦ State of Idaho Legislature (grant funds)
- ✦ Rep. Eric Anderson-Dist. 1 (legislation)
- ✦ Celia Gould-Director, Idaho State Dept. of Agriculture (ISDA)(grant funds)
- ✦ Matthew Voile-Manager, ISDA/Noxious Weed Program (grant funds)
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- ✦ Idaho Dept. of Fish & Game/Coeur d'Alene & Harrison Office (project support)
- ✦ Idaho Dept. of Water Resources/Boise Office (water diversion maps)
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- ✦ Panhandle Lakes RC&D/Coeur d'Alene (grant administration)
- ✦ Dave Lamb-Lake Ecologist, Coeur d'Alene Tribe (consulting, survey)
- ✦ Colleen Allison-Grant Writer, Kootenai County (grant review, authorization)
- ✦ Kootenai County (KC)- Board of County Commissioners (grant authorization)
- ✦ KC – Administrative Services (consulting, contracts)
- ✦ KC – Noxious Weed Control (project management)
- ✦ KC – Parks & Waterways (equipment-boats)
- ✦ KC – Reprographics Mailing Center (brochure publishing)
- ✦ Anatek Labs, Moscow ID (sample testing)
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- ✦ ACE Diving (diver dredging work)
- ✦ Jerry Ellis, Helena Chemical (consulting, project support)
- ✦ Brian Lind, Applied Bio Chemists (consulting)
- ✦ Coeur d'Alene Press, Coeur d'Alene ID (public notification & support)
- ✦ Spokane Review, Coeur d'Alene office (public notification & support)
- ✦ Hayden Lake Recreational Water & Sewer Dist. (public notification, proj. support)
- ✦ Dalton Irrigation Dist. (public notification, project support)
- ✦ Hayden Marina (staging area-Hayden Lake)
- ✦ US Forest Service (staging area-Cave & Medicine Lakes)
- ✦ Camp MiVoden, Hayden Lake (moorage-diver dredging)
- ✦ Mr. Robert Williams, Hayden Lake (moorage-diver dredging)
- ✦ Johnson's Johns, Priest River (on-site bathroom & hand-washing facilities)
- ✦ Lake City Marine Services, Post Falls (boat repair)
- ✦ Caruso's Deli (project food)

BACKGROUND

In 1997, Eurasian Watermilfoil (EWM), a submerged, non-native aquatic plant, was identified in approximately 600 acres of Hayden Lake, a prime recreational lake in Kootenai County, Idaho. Control measures were started by the Kootenai County Noxious Weed Control Department with the help of cost-share funds from the Idaho State Dept. of Agriculture (ISDA) and contributions from landowners around the lake. In 2002, the Inland Empire CWMA (encompassing Benewah, Kootenai and Shoshone counties), decided to make EWM control a priority. In the following years, control efforts have been managed by the CWMA, using integrated management tools for control while building public awareness.

In 2005 in Benewah County, approximately 400 acres of EWM was reported in the tribal waters of Lake Coeur d'Alene by the Coeur d'Alene Tribe. An active control program was started by the Tribe and continues today. By 2006, the State Milfoil Taskforce surveyed and treated approximately 350 acres of EWM in the Coeur d'Alene River chain lakes of Cave and Medicine (Kootenai County). As of 2007, the project has been part of the IECWMA's control efforts. Since 2007, confirmation of EWM in the Harrison Slough (at the mouth of the Coeur d'Alene River, Kootenai County) and the St. Maries River (Benewah County) has been noted, but no control measures implemented due to various circumstances.

The 2008 EWM Control Project was funded from an appropriation put in place by the Idaho State Legislature and administered as a Phase III grant from the ISDA. The IECWMA was awarded \$464,415, plus \$20,000 matching funds from Kootenai County Board of County Commissioners and \$5,328 in contributions from private, shoreline landowners (Table #1).

2008 PROJECT RESULTS

The IECWMA control efforts focus on an integrated pest management (IPM) approach to weed management. During the 2008 season (April through November), the activities completed were herbicide applications (June), diver dredging (August-October), mapping/surveys (July and August) and educational programs (April-October).

Table #1 – 2008 EWM Control Funding Sources

Source	Award	Used
ISDA	\$ 464,415	\$ 345,276
Kootenai Co.	20,000	0
Private	5,328	4,628
Totals	\$ 489,743	\$ 349,904

Table #2- 2008 EWM Control Project Costs

Activity	Cost *
Herbicide Application (products, applicator, sampling, equipment)	\$ 300,173
Diver dredging (divers, equipment rental, fuel)	27,436
Surveys (surface/diving, fuel, air cards)	5,778
Education (publications)	75
Grant administration fee (RC&D)	16,442
Total	\$ 349,904

*Grant funds + contributions; does not include in-kind match summary (page 9)

Table #3- EWM Control Activity Costs per Acre

Activity	Cost/Acre
Herbicide Application (cost ÷ 548 acres)	\$ 548
Diver Dredging (cost ÷ 28.5 acres)	\$ 963
Surveys (cost ÷ 2903 acres)	\$ 2

Herbicide Applications

Herbicide applications were conducted by Lakeland Restoration Services (LRS). All maps, equipment and technologies used for the project can be found in the herbicide application final reports. Herbicide application projects occurred in two (2) areas, Hayden Lake (Appendix A-Hayden Lake Herbicide Treatment Report) and Cave and Medicine Lakes (Appendix B –Cave and Medicine Lakes Herbicide Treatment Report). The Harrison Slough herbicide project (Appendix C –Harrison Slough Parcel Map) was not completed due to

- ✦ Contested ownership of the land below the high-water mark by nearby landowners.
- ✦ Active grebe nests and fish spawning would be disrupted at the scheduled treatment time.
- ✦ No pre-treatment survey had been conducted by ISDA, so information was not available as to infestation size and Slough depths.

Table #4-Hayden Lake/Herbicide Application and Table #5-Cave and Medicine Lake/Herbicide Application, describe acres, herbicide and rate. Two (2) herbicides were used, Navigate®, a granular 2,4-D and Ecotriclopyr®, a liquid triclopyr (Appendix D-Aquatic Herbicide Labels).

Hayden Lake total acres treated with herbicide = **242**

Cave/Medicine Lakes total acres treated with herbicide = **306**

Total herbicide treated acres = 548

The staff of the Kootenai County NWC (Nina Eckberg, Linda Ely and Bill Hargrave), IDFG (Aaron McKarley) and ISDA (Erin Mader) conducted water sampling and dissolved oxygen tests as per the ISDA/Water Quality Assurance guidelines. Samples were analyzed from Hayden Lake on the same day for public reporting and analysis of samples from Cave/Medicine Lake were done within 48-hours. The water quality testing and dissolved oxygen results can be found in Appendix E-EWM Treatment Samples. Levels necessary to lift drinking and irrigating restrictions

- ✦ Triclopyr – 0.40 ppm
- ✦ 2,4-D – 0.10 ppm for irrigation use, 0.07 ppm for drinking

Diver Dredging

Diver dredging was done on Hayden Lake by ACE Diving for a total of 30 days. Two (2) divers, scuba equipment (air-supply pump, suits) and a trash pump with vacuum venturi were supplied by ACE Diving (contractor). Pontoon barge with 50-hp outboard motor, catch-cage for EWM (plus rakes and totes), fuel, safety equipment and trailer were supplied by the project manager, Kootenai County Noxious Weed Control (NWC). A schedule of survey sites and areas of EWM-pulling were provided to the divers by the project manager. A combination of underwater survey and plant removal was achieved over **28.5 acres** and **6,100 lbs.** of aquatic plant material were collected (Table #6 – Hayden Lake/Diver Dredging). NWC disposed of the EWM at the landfill.

Location, area of activity, total bins of material collected and future diving activity are found in Table #6. The end-of-project evaluation meeting held October 14th 2008 (with ACE Diving and NWC) brought the project into perspective from the diver's point of view. The 2009 diver dredging activity was discussed and a tentative plan was formulated for next season.

Survey/Mapping

The survey and/or mapping activities of susceptible waterways in the IECWMA were conducted by the ISDA (surface), LRS (surface) and the Coeur d'Alene Tribe (underwater). The surface surveys (rake toss from boat) were done using the ISDA Survey Protocol (Appendix F-ISDA Survey Protocol) and latitude/longitude points provided by the ISDA/GIS-Mapping Dept. Final reports from LRS and the Tribe provide maps and describe the equipment and technologies

used to perform the survey (Appendix G-LRS Restoration Services Survey Report and Appendix H-Coeur d'Alene Tribe Survey Report).

Survey conclusions:

- ✦ **Fernan Lake**, a **230 acre** area; Results, no signs of EWM.
- ✦ **Harrison Slough**, a **300 acre** area; Results, approximately **268 acres** of EWM.
- ✦ **Lake Coeur d'Alene** had three (3) areas of survey:
 - **Kidd Island Bay (40 acres)**; Results, no signs of EWM.
 - **Mica Bay (600 acres)**; Results, no signs of EWM.
 - **Cougar Bay (70 acres)**; Results, no signs of EWM.
- ✦ **Spokane River**, a **686 acre** area; Results, no signs of EWM.
- ✦ **Upper and Lower Twin Lakes**, a **977 acre** area; Results, no signs of EWM.

Education and Awareness Activity

Interest is still high in Eurasian watermilfoil and its affect on the environment. Our NWC website, www.kcweeds.com, features a webpage for the Eurasian Milfoil Project, where the public can track the treatment activities and restriction notices during each project. A dedicated phone line was installed in the NWC Department with pre-recorded, daily up-dates about water-use restrictions during herbicide applications. NWC conducts EWM educational programs and public meetings throughout the year. Civic groups, elected officials and homeowner associations request presentations and information; EWM prevention efforts are measured by educational programs presented, attendance numbers, total website hits and publications distributed (Table #7 –EWM Educational Awareness Activity).

Monitoring

Post-treatment surveys are conducted by the ISDA and comparisons to prior project treatments determine effectiveness of treatment activity.

Benefits

Benefits of EWM control are

- ✦ Healthy aquatic wildlife habitat; for fish, waterfowl and terrestrial animals that rely on shallow water for food and shelter.
- ✦ Safe recreating environment for the public.
- ✦ Better water quality.

Consequences of not doing EWM control are

- ✦ Poor quality habitat for nesting waterfowl and spawning fish when diverse, native plant populations are replaced with an invasive mono-culture.
- ✦ Reduced water quality due to slow water flow (stagnation) and lower dissolved oxygen.
- ✦ Dangerous conditions for recreational activity caused by matted, EWM beds that tangle and panic swimmers.

Timelines and Milestones

Originally, the goals were

- ✦ Eradicate EWM from waterways wherever possible.
- ✦ Educate the public about the hazards of EWM and how they can be part of the solution.

The IECWMA has reduced existing populations of EWM, but the technology made available (through mapping and surveys) has caused other infestations to be found. Eradication is a great goal for infestations in waterways that are not heavily used by the public or where public awareness allows for cooperative control measures to be implemented.

When the public recognizes a County craft on the water, the subject of EWM will be part of the conversation. We are happy to say that more people are aware of the problem than ever before and they are willing, when asked, to clean their boats and equipment and/or tell others to do the same. We recognize this attitude as a success of educational awareness.



2008 Preston Bay on Hayden Lake in Idaho

Inland Empire CWMA -EWM Contribution In-kind Match Summary *

Dates Covered By This Summary: From April 24, 2008 To November 28, 2008

Amount Contributed	Contribution Category	Cooperator	Contact	Contact Phone
\$4,628	Landowner/Private	Shoreline landowners (list)	Nina Eckberg	208/446-1290
\$11,641	Non-Federal Govt.	Kootenai County NWC	Nina Eckberg	208/446-1290
\$223	Non-Federal Govt.	Idaho Dept. of Lands	Carl Washburn	208/769-1577
\$1,586	Non-Federal Govt.	Idaho Dept. of Fish & Game	Aaron McKarley	208/689-3453
\$311	Other	Lakeland Restoration Service	Dave Klutz	208/448-2222
\$18,389	Grand Total			

Nina Eckberg

 SIGNATURE

11-28-08

 DATE

Contribution Category	Grand Totals
Federal Government	
Landowner/Private	\$4,628
Non-Federal Government	\$13,450
Other	\$311
Grand Total	\$18,389

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Table #4 - Hayden Lake Project/Herbicide Application

Location	Actual Avg. Depth (ft)	Surface Acres (planned)	Acre change±	Triclopyr (gallons)‡	Actual Triclopyr Used (gallons)	2,4-D (lbs)§	Actual 2,4-D used (lbs.)
Berven Bay	6.0	2.0	2.0			300	300
Taylor Terrace	15.0	4.0	5.5	178.0	172.5		
Shenandoah	10.5	8.0	10.5	211.0	205.0		
Victoria Bay	10.0	10.0	13.0			1500	1500
Sportsman's Bay	9.0	47.5	57.0			7125	7000
Rollins Beach	10.0	3.0	4.0	73.0	72.5		
McLean's Bay	10.0	14.0	18.5	340.0	342.5		
Revilo Point	10.5	0.5	1.0	13.0	12.5		
Henry Point	12.0	1.0	1.5	32.0	32.0		
Skinner Bay	9.5	7.5	8.5	167.0	160.0		
Welbourne	8.0	3.5	2.5	57.0	57.0		
Chicken Point	8.0	3.0	2.5	49.0	49.0		
Gem Shores	12.0	7.5	5.5			1125	1100
Mokins Slough	7.0	32.0	46.0			4800	4700
Schmidt's Bay	7.5	4.5	3.5			675	650
Preston Beach	8.0	8.0	9.0			1200	1150
Hayden Bay	8.0	3.0	2.5			450	450
Ripple Bay	7.5	1.5	1.5			225	250
Burley Bay	7.5	1.5	2.0			225	225
Speakeasy Bay	7.5	1.5	2.0			225	250
Sunset Beach	10.5	10.0	10.0	263.0	255.0		
N. O'Rourke Bay	10.0	4.0	5.5			600	600
O'Rourke Bay	10.0	16.0	19.0			2400	2300
Hart's Bay	11.5	2.0	3.0			300	450
Clark's Bay	12.5	2.5	2.5			375	375
Cooper Bay	12.5	2.0	3.5	69.0	69.0		
Totals		200.0	242.0	1452	1427	21525	21300

± Changes in acreage can occur during the application process. Depth differences, area between docks and/or surface vegetation coverage (such as lilies) cause a re-evaluation of acreage treatment amounts.

‡ Ecotriclopyr (3 lbs/gallon of active ingredient triclopyr) is applied at 1.5ppm per label instructions. Final ppm depends on water depth and area covered.

§Navigate (active ingredient 2,4-D) is applied at 1.0 -1.5ppm per label instructions. Final ppm depends on water depth and area covered.

Table #5 - Cave and Medicine Lakes/Herbicide Application

Location	Actual Avg. Depth (ft)	Surface Acres (planned)	Acre change±	2,4-D lbs	Actual 2,4-D used (lbs) §
Cave N	7.0	109	125	16350	16350
Cave S	8.0	72	97	10800	11150
Cave E		17	25	2550	2550
Medicine N	6.0	18	28	2700	2700
Medicine S	8.0	25	31	3750	3750
Totals		241	306	36150	36500

± Changes in acreage can occur during the application process. Depth differences, area between docks and/or surface vegetation coverage (such as lilies) cause a re-evaluation of acreage treatment amounts.

§Navigate (active ingredient 2,4-D) is applied at 1.0 -1.5ppm per label instructions. Final ppm depends on water depth and area covered.

Table #6 - Hayden Lake/Diver Dredging

Location	Treatment	Average Depth (ft)	Surface Acres	Bins§ Collected	2009 Treatment
Hayden Dam (spillway)	Diving	7.0	1.0	12	Diving
Honeysuckle	Diving	9.0	1.5	3	Diving
Berven Bay	Diving	7.0	1.0	57	Diving, barriers
Cramps Bay	Survey	7.5	1.0		No EWM
English Point	Survey, diving	15.0	1.0	11	Chemical
Evernade Point	Survey, diving	12.0	1.0	4	Chemical
Harris Landing	Surveying	11.0	2.0		Chemical
Henry Point	Survey		0.5		Chemical
Skinner Bay	Survey		0.5		Diving
Hayden Haven	Survey, diving	7.0	1.0	20	Diving, barriers
Welbourne	Survey, diving	5.5	1.5	1	Chemical, barriers
Chicken Point	Survey, diving		1.0	5	Chemical
Gem Shores	Diving	10.0	1.5	3	Chemical
Mokins Bay	Survey		0.5		Diving
Lee's Point	Survey, diving	6.0	1.0	1	Diving, barriers
Burley Bay	Survey	10.0	1.0		Diving
Sunset Beach	Survey, diving	7.5	2.0	5	Chemical, diving
O'Rourke Bay	Survey		5.0		Chemical
S. O'Rourke Bay	Survey		2.0		Chemical
Windy Bay	Survey	11.0	2.0		Chemical, diving
Cooper Bay	Survey	9.5	1.5		Chemical
Totals			28.5	122	

§Bins of wet debris weigh approximately 50 lbs., 122 bins X 50 lbs = 6,100 lbs (3.05 tons)

Table #7 – 2008 Educational Awareness

Date	Group/Agency	Subject	Attendees
04-24	Public Meeting in Harrison ID	EWM Control in Harrison Slough	12
04-25	Inland Empire Soil, Water Conservation Society, Regional Conference, Coeur d'Alene ID	EWM in Kootenai Co.	20
05-07	Kootenai County Sheriff's Marine Academy, Coeur d'Alene ID	EWM identification & control	11
05-07	Idaho Native Plant Society-Calypto Chapter, Coeur d'Alene ID	Effects of EWM on Native Plants	5
06-09	Private landowners	Hayden Lake herbicide application	1180
06-16	Private landowners	Cave/Medicine Lake herbicide application	48
06-18	Bonneville County NWC, Twin Falls ID	Public Relations & EWM Project Information	20
07-07	KVNI/KXLY Talk Radio 1850, Coeur d'Alene ID	EWM Control in Kootenai Co.	‡2,200
08-07	Montana State Dept. of Agriculture & Avista Utilities Public Meeting, Thompson Falls MT	Getting the treatment-EWM Control in Kootenai Co.	60
10-21	Northern Interior Columbia Basin Invasive Aquatic Plant Summit	IECWMA-host	14
	Website hits	EWM Project page	50
	Publication distribution	EWM Identification & control	85
Total			3,705

‡ Potential broadcast audience