

CITY OF SHELL LAKE 2010 ANNUAL REPORT FOR TECHNICAL OVERSIGHT COMMITTEE

To: Members of the Technical Oversight Committee

From: Bradley A. Pederson, City Administrator, Shell Lake, Wisconsin

According to condition #53 of our DNR permit, we are to submit an annual report by January 31 each year to DNR, the Voigt Intertribal Task Force, GLIFWC and the St. Croix Band. Also, according to condition #63 we are to provide an annual progress report to members of the Technical Oversight Committee prior to the annual meeting. Since our annual meeting is scheduled for February, I'm using this report to satisfy both conditions.

We have not run the diversion since July 18, 2005. Since we had been experiencing below average rainfalls, the level of Shell Lake had continued to decline. In 2010, however, rainfall improved and as a result, Shell Lake is over 5 inches above last year's December reading. The attached Lake Level Chart shows the general decline and small recovery. On 12/2/10 the lake level was 1217.74 MSL.

In this section of the report, you'll find an attachment entitled "Lake Studies-Permit required and Long-Term Monitoring Protocol – 2010". This spreadsheet will show you the tests that were conducted and the respective dates the information was gathered in 2010.

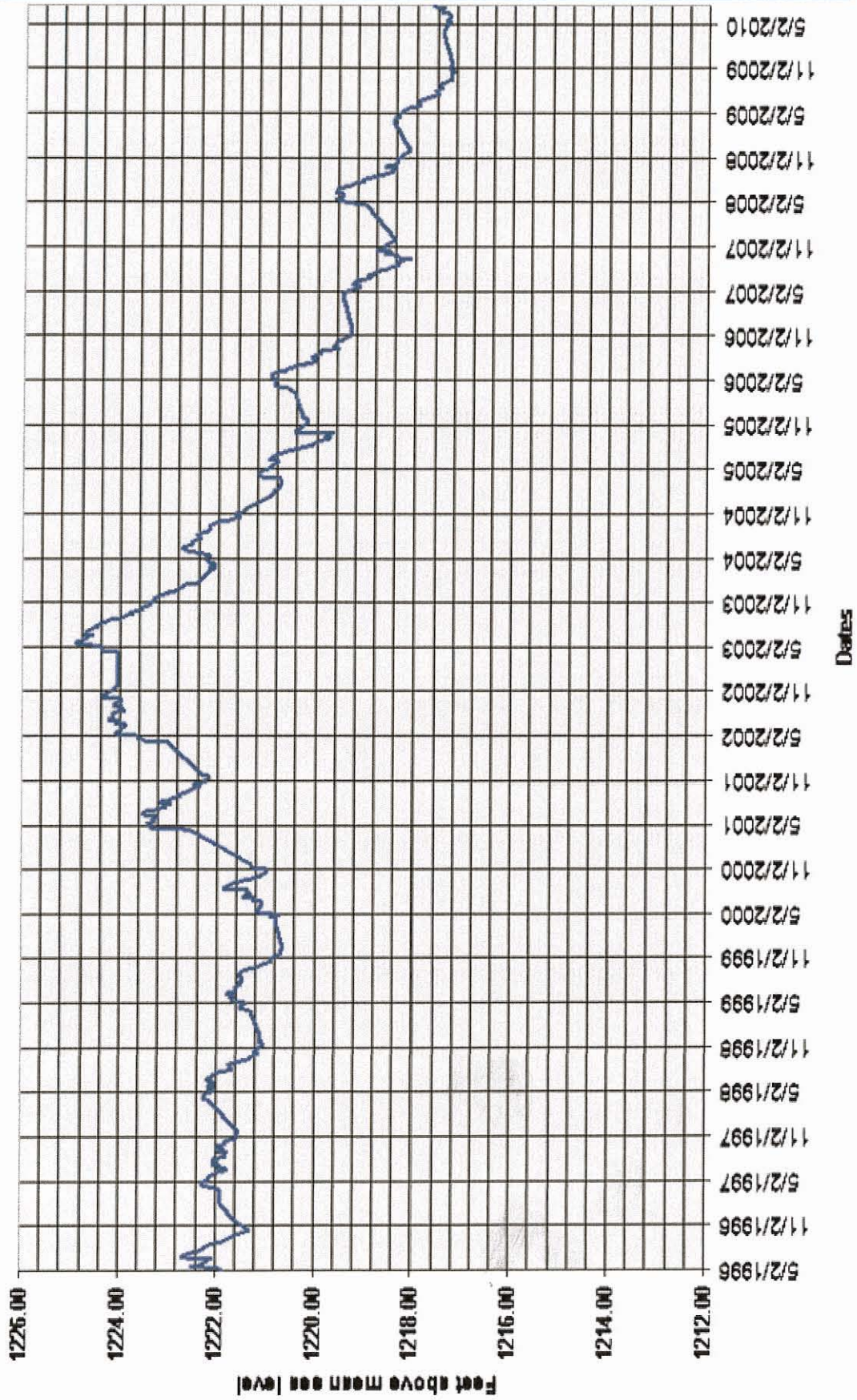
Also in this section of the report, you'll find an attachment entitled "Lake Studies-Permit required and Long-Term Monitoring Protocol-2011". This spreadsheet shows both the monitoring and projects planned for 2011. As you can see, this list is tentative based on the action of the TOC. Please note under the "Lake Protection Grant" section, that we are making good progress on all four projects. Also, in 2010, the City accepted ownership of six USGS groundwater monitoring wells and is measuring water levels on a quarterly basis.

The first white tab contains an updated spreadsheet entitled "Summary of Sampling Requirements by Year". This spreadsheet (prepared and continually updated by Kathy Bartilson) shows the changes in the Long Term Study Protocol as approved by the TOC.

The remaining white tabs contain either monitoring results or progress on the various projects that the City has implemented.

Please review this annual report and don't hesitate to give Lake Coordinator, Dave Vold a call at 715/468-7679 if you have questions or recommendations. We'll also plan to review it and ask for your input at the next TOC meeting. Thanks for your help in assisting the City in meeting its permit obligations.

Lake levels 1996 to present



1217.74
12 - 2 - 10

Lake Studies-Permit required and Long-Term Monitoring Protocol-2010							Revised 12/10
Parameter	Approximate Date of Collection						Remarks
	Feb. Or Mar.	Spring- Right After Ice-Out	Mid- June	Mid- July	Mid- Aug.	Sept.	
Permit Required Monitoring							Refer to note on bottom of page 2.
Eurasian Water Milfoil			6/24/10	7/23/10	8/29/10	9/28/10	Transects at landings and vegetative beds
Zebra Mussel Veliger			6/24/10	7/21/10	8/26/10	9/30/10	2 stations-North Basin, 2 stations-South Basin, 1 station at main landing
Zebra Mussel Adult			6/24/10	X	X	X	-Adult plate samplers on docks
Spiny Water Fleas			6/24/10	7/21/10	8/26/10	9/30/10	2 stations-North Basin, 2 stations-South Basin, 1 station at main landing
Invasive Species along pipe corridor		X	6/29/10	7/29/10	8/31/10	9/29/10	Check for invasive species & Erosion control
Hydrogeology	X	X	X	X	X	X	USGS has completed field work on this 3-yr study
VHS Testing							Plan to test only if diversion is started (refer to note on pg 2)
Groundwater Monitoring		4/27/10			8/31/10	11/8/10	Measure water level elevation in 6 wells on a quarterly basis
Projects to be completed with Lake Protection Grant							
Lake Phosphorus Study Conduc- ted by USGS	X	X	X	X	X	X	Started in 2009 Will be completed in 2011
Ind. Park Stormwater Project					X		Construction completed in 2009
City Park Bio Cell					X		Major construction completed in fall of 2010. Project will be completed in 2011.
Lake Access Improvement Projects	X	X	X	X	X	X	A study has been completed and work will continue on education & erosion control. Draft resource management plans have been completed on most accesses.

Yellow River Studies-Permit required and Long-Term Monitoring Protocol – 2010 Revised 8/10		
Parameter	Approximate Date of Collection	Remarks
River levels at Hector Dam	-weekly when diversion is running and August annually	Started 11/3/03 Recorded 8/17/10
Aerial Photography of River	-first 2 weeks in august – annually	Completed on 8/27/03; 8/1/04 8/14/05;8/5/06 9/1/07;8/6/08; 8/12/09;8/10/10
Permit related Monitoring	-3 sites on River -Dissolved Oxygen -Temperature -Dissolved Gas Saturation -pH -Conductivity -Biological Oxygen Demand -Suspended Solids -Total Phosphorus -Dissolved Phosphorus -Total Kjeldahl Nitrogen -Ammonia -Nitrate plus Nitrite Nitrogen	Up to date- Started in '03 Once in every calendar quarter during diversions and in August annually, even if diversions do not occur each year. Done: 8/25/10
	-Mercury, total -Mercury, methylated	(refer to note below)

Note: Mercury monitoring was dropped on the lake and river by DNR in concurrence with the TOC on 8/17/10 and will resume when:

1. The monitoring will be resumed if the lake level reaches 1220.0 feet mean sea level, regardless of the time of year (as proposed by the City.)
2. The monitoring will be resumed at least two weeks in advance of any future diversion, regardless of the time of year (in addition to item 1 above, unless a recent test results is available from within the previous 12 months).
3. Water quality sampling is required in Shell Lake in 2012, 2013 and 2014 under the Shell Lake Diversion Long-Term Monitoring Protocol. Total and methylated mercury testing must be included in one of these three years of sampling, both on Shell Lake and at the 3 sites on the Yellow River.

VHS Testing

The St. Croix Tribal Natural Resources Department completed VHS testing on Shell Lake on April 21, 2010 and found no apparent sign of the disease.

(Tentative upon Action of the TOC)

Lake Studies-Permit required and Long-Term Monitoring Protocol-2011							Revised 1/11
Parameter	Approximate Date of Collection						Remarks
	Feb. Or Mar.	Spring- Right After Ice-Out	Mid- June	Mid- July	Mid- Aug.	Sept.	
Permit Required Monitoring							Refer to note on bottom of page 2.

Eurasian Water Milfoil			X	X	X	X	Transects at landings and vegetative beds
Zebra Mussel Veliger			X	X	X	X	2 stations-North Basin, 2 stations-South Basin, 1 station at main landing
Zebra Mussel Adult			X	X	X	X	-Adult plate samplers on docks
Spiny Water Fleas			X	X	X	X	2 stations-North Basin, 2 stations-South Basin, 1 station at main landing
Invasive Species along pipe corridor			X	X	X	X	Check for invasive species & Erosion control
Hydrogeology							USGS has completed field work on this 3-yr study
VHS Testing							Plan to test only if diversion is started (refer to note on pg 2)
Groundwater Monitoring							Measure water level elevation in 6 wells on a quarterly basis

Projects to be completed with Lake Protection Grant

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Ind. Park Stormwater Project							Construction completed in 2009
City Park Bio Cell			X				Major construction completed in fall of 2010. Project will be completed in 2011.
Lake Access Improvement Projects	X	X	X	X	X	X	A study has been completed and work will continue on education & erosion control. Draft resource management plans have been completed on most accesses. Construction will start in 2011.

Yellow River Studies-Permit required and Long-Term Monitoring Protocol – 2011 Revised 1/11

Parameter	Approximate Date of Collection	Remarks
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Permit related Monitoring	-3 sites on River -Dissolved Oxygen -Temperature -Dissolved Gas Saturation -pH -Conductivity -Biological Oxygen Demand -Suspended Solids -Total Phosphorus -Dissolved Phosphorus -Total Kjeldahl Nitrogen -Ammonia -Nitrate plus Nitrite Nitrogen	Up to date- Started in '03 Once in every calendar quarter during diversions and in August annually, even if diversions do not occur each year. Done: 8/25/10
	-Mercury, total -Mercury, methylated	In august annually, even if diversions do not occur each year. 8/31/09

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Invasive Species Monitoring

(This section contains information about Shell Lake's Invasive Species Monitoring and inspection program)

Zebra mussel and spiny water flea veliger

Again in this year, the City Crew used two fine-mesh nets to collect lake samples for zebra mussel veliger and spiny water fleas. In 2010, the samples were collected in five locations on Shell Lake on 6/24, 7/21, 8/26, and 9/30. Once the samples were collected, they were sent to DNR for analysis. Again in 2010, all samples were negative. (see attached report)

Pipeline Corridor Inspections

Refer to reports enclosed in this section

Invasive Species Inspection Program

- a. Water Inspections: Again this year with the assistance of a DNR grant, the City hired four inspectors who inspected trailered watercraft entering Shell Lake. They staffed our main landing 14 hours per day, seven days throughout the summer. A power point presentation is enclosed in this section which gives the details of 2010.
- b. Monitoring of Vegetative Beds and Landings for Eurasian Milfoil:
Kris Larsen performed these inspections on 6/24, 7/23, 8/29 and 9/28. His written reports to the City indicated that he had boated across and inspected the weed beds of Shell Lake. He verified that there was no Eurasian milfoil found during these inspections. (note: Kris Larsen is an invasive species specialist with WI DNR)
- c. Adult Zebra Mussel Monitors: Three monitors were installed on docks around the lake in June 2010 and removed in September 2010. No zebra mussels were observed.
- d. VHS Testing: Sixty yellow perch were collected from Shell Lake (Washburn County, WI) by Don Taylor (St. Croix Tribal Natural Resources Dept) on April 21, 2010. Water temperature at the time of collection was 55-56C. The fish arrived to the University of Minnesota Veterinary Diagnostic Laboratory in good condition with no apparent sign of disease. (see attached report)

Invasive Species Education Program

Letter from Mayor: The enclosed letter was sent to all Shell Lake property owners with an attachment on how to establish a buffer.

Purple Loosestrife

Again this year City staff identified locations of Purple Loosestrife infestations throughout the corporate boundaries. The plant was eradicated by the city crew on public property and property owners were notified of their infestations and were asked to eradicate. . Refer to attached inventory.

From: "Larsen, Kris H - DNR" <Kris.Larsen@wisconsin.gov>
To: bradpederson@charter.net
Date: 12/15/2010 09:31:49 EST
Subject: FW: Results of veliger samples on Shell Lake.

Hi Dave Vold --

Here is the results of the Zebra Mussel Veliger and the Spiny Water flea sampling on Shell Lake.

-- Kris Larsen

From: Steinke, James A - DNR
Sent: Wednesday, December 15, 2010 8:03 AM
To: Larsen, Kris H - DNR
Subject: RE: Results of veliger samples on Shell Lake.

Hi Kris, I have looked at all the Shell Lake samples that have been submitted and they were all negative for ZM's and SWF's. The samples were collected on 06/24/10, 07/21/10, 08/26/10, and 09/30/10. Jim

From: Larsen, Kris H - DNR
Sent: Friday, December 10, 2010 10:00 AM
To: Steinke, James A - DNR
Subject: Results of veliger samples on Shell Lake.

Hi Jim --

I get a call from the Shell Lake group (Washburn County) wondering if the results of their summer veliger samples and spiny water fleas samples are available. They will need the information for the annual write-up for their grant. If you could forward it to me I will pass it along to them. Thank you.

* Kris H.Larsen
Self Help Lake Monitoring and Invasive Species Specialist
Wisconsin Department of Natural Resources
(*) phone: (715) 635-4072
(*) fax: (715) 635-4013
(*) e-mail: kris.larsen@wisconsin.gov

City of Shell Lake



P.O. Box 520
Shell Lake, Wisconsin 54871
(715) 468-7679 Fax (715) 468-7638

Dear Shell Lake Property Owners:

Spring 2010

We are all ready for summer on Shell Lake! The season will be off and running on May 1, with the opening of fishing season. Our common goal as Shell Lake property owners is to ensure that Shell Lake remain an Outstanding Resource Water for generations to come. Toward that end, we once again ask that you support our Shell Lake protection efforts.

Before launching on Shell Lake, please take the time to inspect your boat(s) and trailers(s). Owners' routine inspection and cleaning helps protect Shell Lake from aquatic invasive species such as Eurasian water milfoil, zebra mussels, and VHS. Shell Lake's aquatic invasive species inspectors will be at the main landing to make sure that boats are launched cleanly and quickly, but there is no substitute for a boat owners' routine that includes draining all water from the boat and washing watercraft and trailers with hot water before they move from one body of water to another.

As the Mayor of Shell Lake and a lakeshore property owner myself, I appreciate your support of the city's initiatives to keep Shell Lake free of invasive species. There are four ways in which we ask you to support the invasive species program and help protect Shell Lake:

- Inspect your property and destroy any vegetative invasive species, such as purple loosestrife (information brochure in City Hall).
- Maintain a natural shoreline.
- Refrain from using fertilizers that contain phosphorous (this past year, Wisconsin enacted legislation that restricts the use of fertilizers containing phosphorous).
- Buy an annual launch permit for \$20 (even if you use a launch service).

Enclosed is information on how to establish a lakeshore buffer and how to determine the ordinary high water mark on your property. The Washburn County Land Conservation Department, located in the Washburn County Courthouse in Shell Lake, will also assist in design and has a recommended plant list for this area. Their phone number is (715) 468-4654.

A natural shoreline is a healthy shoreline; allowing native forbs and grasses to grow helps prevent invasive species from gaining a foothold on the shores of Shell Lake. **Please remember that it is illegal to disturb the soil below the ordinary high water mark.** We also urge and, in some cases, require that property owners maintain a 30-foot wide vegetative buffer above the ordinary high water mark.

I look forward to seeing you at the annual meeting of the Shell Lake Inland Lake Protection District, which will be held at the Shell Lake Community Center on July 26. Coffee and rolls will be served, beginning at 8:30, and Lake Specialist Pat Goggin will speak on effects of low water levels.

Sally Peterson, Mayor
City of Shell Lake

P.S. We are looking for a citizen lake monitor. If you're interested in volunteering or learning more about the program, please call City Hall at 715-468-7679.

Shell Lake Aquatic Invasive Species Project - 2010
Purple Loosestrife Inventory Sheet

NAME: City of Shell Lake

<u>Site Number</u>	<u>Date</u>	<u>Location</u>	<u>Water Body</u> (if applicable)	<u>#of Plants</u>	<u>Extent of Infestation</u>			<u>Lake, ditch, etc.</u>
					<u>.0.1 acre</u>	<u>.1-5 acre</u>	<u>.0.5 acre</u>	
1	7/13/2010	Airport property	Shell Lake	220				Lakeshore
2	7/16/2010	137 So Lake Dr	Shell Lake	5				Lakeshore
3	7/26/2010	1471 So Lake Dr	Shell Lake			X		Lakeshore
4	7/28/2010	Parcel 903-Donovan Cove Ac	Shell Lake	50				Lakeshore
5	7/28/2010	Parcel 69C - North Landing	Shell Lake	30				Lakeshore
6	7/28/2010	Parcel 80A-Winton/Pratt	Shell Lake	50				Lakeshore
7	7/29/2010	Parcel 222 (City Property)	Shell Lake	30				Lakeshore
8	7/29/2010	Parcel 225 (City Property)	Shell Lake	30				Lakeshore
9	7/29/2010	Parcel between 56C & 56D	Shell Lake	100				Lakeshore
10	7/29/2010	155 So Lake Dr	Shell Lake	30				Lakeshore
11	8/5/2010	Class C Access-Diversion Ditch	Shell Lake	30				Lakeshore
12	8/6/2010	Class C Access - So Lake Dr	Shell Lake	50				Lakeshore
13	8/10/2010	Wet Pond @ Cenex	N/A	15				Wetland-Cenex
14	8/12/2010	206 Donovan Cove Rd	Shell Lake	5				Lakeshore
15	8/12/2010	Wetland by Sand Rd	N/A	10				Wetland-Sand Rd

Actions taken

The Mayor sent a letter to all lakeshore property owners asking them to remove purple loosestrife on their property.

If the City noticed purple loosestrife on private property, the owner received a letter or phone call.

The City Crew either pulled or sprayed Roundupt to kill purple loosestrife on all city-owned property and accesses.

An article was placed in the Washburn County Register explaining how to identify purple loosestrife and methods of control.

An invasive species exhibit was displayed at the Lake District Annual Meeting.

UNIVERSITY OF MINNESOTA

Veterinary Diagnostic Laboratory

College of Veterinary Medicine

1333 Gortner Avenue
St. Paul, MN 55108

1-800-605-8787

612-625-8787

Fax: 612-624-8707

e-mail: vdl@umn.edu

www.vdl.umn.edu

Accession Number: D10-018270

Owner: THOMPSON, JERRY
WI TRIBAL CONSERVATION ADVISORY
COUNCIL (WTCAC)
7550 CTY RD V
FALL CREEK, WI + 54742

Veterinarian:

WI Tribal Conservation ADVIS COUN/USDA
225 VetMedCtr
1365 Gortner Avenue
St Paul, MN 55108

Site:

Received: 04/21/2010

Reference:

Species: Fish

Breed:

Age:

Sex:

Weight:

Specimen: 60 yellow perch were collected from Shell Lake (Washburn County, WI) by Don Taylor (St. Croix Tribal Natural Resources Dept) on 21 April 10. Water temperature at time of collection was 55-56C. The fish arrived to the VDL in good condition with no apparent sign of disease.

Virology: Tissue homogenate (12 pools of 5 fish each) were cultured on the EPC and FHM cell lines at 15C for 28 days, blind passed on day 14. RESULTS...

Species	Number (Pool ID)	Result
Yellow Perch	60 (1-12)	VHS NEGATIVE

Nicholas BD Phelps, MS, AFS-FHS Fish Health Inspector

--Report--

Fax (612)6256241 Ph (612)6257755

Fax:	Mail:	Written: 06/11/2010	Addendum:
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