



LakeFront

Quarterly Newsletter of the Whitefish Lake Institute

Fall 2015

Whitefish Area Water Resources Report

WLI Finishes Comprehensive Look at Local Aquatic Resources

WLI is pleased to announce that it completed its *Whitefish Area Water Resources Report: A Status of the Whitefish Lake Watershed & Surrounding Area*. The report provides a scientifically comprehensive foundation for long-term water quality management. It provides analysis of data and information, identifies known and potential concerns, and offers recommendations to the conservation management organizations responsible for the health of the watershed. The report was a deliverable to the Department of Natural Resources & Conservation. The entire report can be downloaded from WLI's website at <http://www.whitefishlake.org/download/index.php> and is available on CD at the WLI office. WLI plans to develop a community friendly version of the report in the first quarter of 2016.

Septic Leachate Project Update

You may recall the work of the Whitefish Community Wastewater Management Committee to develop a *Whitefish Community Wastewater Management Plan* in response to the findings of the *Investigation of Septic Leachate to the Shoreline Area of Whitefish Lake (Curtis & Koopal, 2012)*. With that plan in place, the Whitefish County Water District (WCWD) applied for funds to begin the process of further defining improvements that need to be made to the wastewater management infrastructure. Carver Engineering was selected as the engineering firm most uniquely qualified to conduct the Preliminary Engineering Report (PER) which will be completed in early 2016. The Lion Mountain area is the first neighborhood to receive planning grant funds to conduct a PER. Funds are provided by the Department of Natural Resources & Conservation (DNRC) and the Treasure State Endowment Program (TSEP) with matching funds contributed by the City of Whitefish and the WCWD.



Whitefish Lake and the Whitefish River.
Photo courtesy gravityshots.com

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Founded in 2005—Celebrating 10 Years

The Whitefish Lake Institute is committed to science, education, and community stewardship to protect and improve Whitefish Lake and Whitefish area water resources today, while providing a collective vision for tomorrow.

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LakeFront is published quarterly by the
Whitefish Lake Institute

Cover Photo:
Lazy Bay Sunrise
courtesy of gravityshots.com

A Fond Farewell to WLI

Editors note: Jen Croskrey's last day at WLI was September 30th. She will be missed! A note from her-

While it's been a great pleasure working for WLI the past 3 ½ years, I am hanging up my hat as the Finance and Administration Manager. I've learned a tremendous amount throughout my time here. It's been incredible seeing the passion and dedication that the staff has for the science and education of water quality. I sheepishly remember one of our first staff meetings when I actually had to ask what AIS stands for. I've also learned a great deal about how difficult it can be raising money for the mission of WLI, regardless of its importance. I have enjoyed the days out on the lakes and especially those out on the trail with school groups. I've really appreciated the connection to the non-profit community of Whitefish and will look forward to seeing all of your friendly faces in other places. Moving on, I have decided to focus more on helping my husband's construction business, Croskrey Building. I'll also be spending more time with my kids, as many of you know; the time with them goes by far too fast.



Jen Croskrey

Great Fish Challenge and WCF Community Grant

WLI raised \$27,672.76 through the first year of the Great Fish Challenge, a new fundraising vehicle of the Whitefish Community Foundation. According to The Great Fish Challenge website, the campaign received 1,391 contributions totaling \$917,764 for the 32 participating non-profits. The Whitefish Community Foundation match amounted to 53% on the first \$15,000 for each organization for a total of just over \$209,000. Matching funds stemmed from contributors to the Circle of Giving and from individuals donating directly to the Great Fish Match Fund. More than half the participating nonprofits raised \$15,000 or more and received the maximum matching grant of \$7,982.

On November 5th at the Whitefish Community Foundation's Grant Awards Ceremony WLI received full funding to complete a *mysis* shrimp survey on the lake in 2016. Introduced to Whitefish Lake in 1968, *mysis* shrimp have caused significantly shifts to the fish community assemblage and nutrient cycling. At the grants award ceremony, WLI also received a donor advised grant from the AGL Foundation.



Whitefish Lake Elevation Analysis

This past spring, WLI completed an analysis of the mean minimum and maximum water elevations along with associated statistics for Whitefish Lake spanning 58 years (1957-2014). In the time period from 1957, 39 years have survey data. Data for the analysis came from Brian Sullivan and his crew at F&H Surveying who voluntarily collected the elevations.

An elevation analysis of Whitefish Lake has multiple implications. First, the mean high water elevation determination from the analysis was compared to the existing mean high water elevation used in the lake-shore protection regulations to determine if an adjustment was needed. Second, the mean low water elevation was needed to answer regulatory questions for the City of Whitefish which annexed the bottom of the lake in 2005, Flathead County which now administers the lakeshore protection regulations in the county, Montana DNRC which regulates the state owned lakebed, and private landowners whose property extends to the mean low water elevation.

Result- DNRC requested that the jurisdictional low water boundary follow State of Montana (A.R.M. 36.25.1101) which utilizes the 10th percentile on navigable waterways for state land leasing. Koopal (2015) modified the low water analysis using the 10th percentile method for the same period of record and calculated 2,996.44 feet as the low water elevation for jurisdictional purposes.

Whitefish Lake Breaks Low Water Elevation Record in 2015

On October 26th, the Whitefish Lake elevation was recorded at 2,996.03 feet which is 0.25 feet lower than the previous record of 2,996.28 feet set in 1967. There is a chance that the lake elevation could further retreat by the end of the year but recent rain events have increased the elevation to 2,996.17 as of November 5th.

Whitefish Lake Elevation Summary Statistics (1957-2014)

Item	Elevation (NAVD88)	Feet	Date
Mean High Water Elevation	3,000.63		
High Water Elevation Range	2,998.73-3,002.48		
Mean High Water Date			June 7
Mean Low Water Elevation	2,997.06		
Low Water Elevation Range	2996.28-2997.88		
Mean Low Water Date			November 21
Mean Fluctuation		3.81	
Fluctuation Range Minimum		2.21 (1977)	
Fluctuation Range Maximum		5.03 (1996)	
Total Fluctuation Range Potential		6.2 High (1961=3002.48) Low (1967=2996.28)	

On April 28th, the Flathead County Commissioners adopted revisions to county-wide Flathead County Lake and Lakeshore Protection Regulations to add Whitefish, Blanchard, and Lost Coon Lakes to the list of lakes under the jurisdiction of those regulations. All lakes in rural Flathead County "having a water surface area of at least 20 acres for at

least six months in a year of average precipitation are now regulated by one set of regulations. On September 15, 2005, the City of Whitefish annexed "that body of water known as "Whitefish Lake," extending only to the low water mark of Whitefish Lake" (Resolution #05-25). Therefore, Flathead County jurisdiction of rural properties on Whitefish Lake extends up from the low water mark. Flathead County defined the mean annual high-water elevation for Whitefish Lake as determined by WLI at 3,000.63' (NAVD88).

On June 1, 2015 the City of Whitefish passed Ordinance No. 15-09 that amended Whitefish City Code Title 2, Title 12, Title 13 and Title 14 pertaining to the Lake and Lakeshore Regulations to remove references to the extraterritorial planning jurisdiction, the Whitefish City-County planning board, Blanchard Lake, and defined city limits. Under Code Title 12 (Subdivision Regulations) the City maintained the mean high water elevation at 3,000.79' and established the low water elevation of 2,996.44' for all properties annexed into the city limits and Whitefish Lake. The mean high water elevation is subject to re-evaluation after five consecutive years of data which will occur at the end of 2015. On June 1, 2015 the City of Whitefish also passed Ordinance No. 15-10 creating the Whitefish Lake and Lakeshore Protection Committee for the lake area administered by the city.



Fall Photos



During a break in their conference activities at The Lodge at Whitefish Lake, former state school superintendents from around the U.S. took a tour of the wetlands led by WLI's Mike Koopal and Lori Curtis.



Nature's Wonder– Mike Koopal discovered these perfectly formed larch needle balls along a shoreline reach of Whitefish Lake. Although balls comprised of organic material are uncommon, they have been reported worldwide. It is suspected that the curling action of waves may form these balls but specific local conditions are needed (these balls were found within a few feet of each other). Stop by the office to see these unique creations or visit the Stumptown Historical Society for two examples from Lindbergh Lake.



F 06/12/2012 09:08PM MYCAMERA

Motion activated cameras were downloaded this fall from the Averill's Viking Creek Wetland Preserve which is owned and managed by WLI. Numerous photos show this area as important urban interface habitat for elk and many other species.



51°F 07/05/15 07:50 PM WLI CAM C

The preserve offers good cover for a healthy deer population, including some nice bucks!



In the fall, water quality data are collected on 41 lakes in NW Montana as part of the volunteer lake monitoring program. Here, the program boat awaits launching at Murphy Lake. Visit our website at www.whitefishlake.org for the program report.

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