



LakeFront

Quarterly Newsletter of the Whitefish Lake Institute

Winter 2012

Whitefish Lake Septic Leachate Report

WLI recently released a report “*Investigation of Septic Leachate to the Littoral Areas of Whitefish Lake.*” The report and companion maps can be found on our website www.whitefishlake.org.

The Whitefish Lake Institute conducted the investigation for the Whitefish County Water District under a Montana Department of Natural Resources (DNRC) grant to determine the extent of septic leachate to the shoreline areas of Whitefish Lake, and to provide a scientific basis for identifying ecological threats to the lake, economic threats to the community of Whitefish, and potential public health risks resulting from decreased water quality.

Septic “leachate” is the liquid that remains after wastewater drains through septic tank solids. The liquid can contain elevated concentrations of bacteria and organic compounds from waste, detergents, and other household materials. When properly placed, functioning, and maintained, septic systems are designed to collect wastewater and neutralize these contaminants before they enter ground or surface water systems.

Modern septic systems are considered cost-effective for wastewater treatment, however issues such as improper initial system design, impermeability of soil, improper soil drainage class, improper vertical distance between the absorption field and the water table, improper slope, and improper maintenance may lead to system failure. Even when properly installed and maintained, septic systems have a finite life expectancy based on a number of factors.

Previous studies specific to Whitefish Lake have indicated septic system failures, and confirmed the presence of Optical Brightening Agents (OBAs) from household cleaning products commonly found in septic leachate. About 97% of cleaning products in the U.S. contain OBAs, which are added because they adsorb to fabrics and materials during the washing and cleaning processes making clothes appear brighter. Laundry wastewater is the largest contributor of OBAs to wastewater systems.

The presence of OBAs in wastewater with laundry effluent as a component is considered an excellent indicator of septic (*continued on page 2*)

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Founded in 2005

The Whitefish Lake Institute is committed to acquiring scientific research and engaging the local citizenry to protect and improve the Whitefish area lake resources of today, while providing a collective vision for tomorrow.

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LakeFront is published quarterly by the Whitefish Lake Institute.

Mike Koopal, Editor

printed on recycled paper
 logo design by Carbery Creative

Cover Photos:
 Penguin Plunge during the Whitefish Winter Carnival (courtesy *Whitefish Pilot*)

(continued from page 1) or sewage system failure. Because OBAs are easily measurable, they are one of the key data parameters we used in tracking ineffective sewage treatment from septic systems. The investigation employed the techniques of prior studies as well as newer data collection techniques, and bacterial source tracking.

In total, we identified three confirmed areas of contamination around the lake, two areas of high potential for septic leachate contamination and four areas were identified as having medium potential for septic leachate contamination. The remaining 10 sampling sites are considered to have a low potential for contamination by septic leachate.

WLI is pleased to provide the study results to help citizens and resource managers consider programs to support the common goal of protecting Whitefish Lake water quality, the Whitefish economy, and the health of Whitefish citizens and visitors. -LC

Lake Volunteer Monitoring Report

The Northwest Montana Lakes Volunteer Monitoring Network 2011 field season was filled with rain, more rain, and 46 rock star volunteers that spent time monitoring the 42 lakes and 56 monitoring sites that are included in the program.

In total, volunteers contributed 812 hours which is the equivalent of \$17,344 at the national rate of \$21.36 per hour. The volunteers also assisted WLI staff in the collection of more in-depth water chemistry samples, depth profiles and conducted aquatic invasive species surveys. The program is fortunate to have such dedicated volunteers who are committed to protecting, and understanding more about Northwestern Montana lakes.

The program is always looking for more people to get involved with the monitoring by choosing a lake to monitor twice per month between May and October. The program will offer two trainings at the end of April. One of the training sessions will be followed by a volunteer appreciation party where snacks and refreshments will be provided. Look for training dates, volunteer applications and the 2011 Program Summary Report on the website

www.nwmtlvnmn.org in early March.-JG

Upcoming Reports for 2012

WLI's staff is currently working on a number of reports that will be made available in 2012.

The Whitefish Lake Status Report will provide a comprehensive analysis of Whitefish Lake and the Whitefish Lake watershed including an analysis of historical data. The report will include management recommendations.

WLI has been conducting research at Tally Lake over the past four years. The study has determined that the lake is one of the most unique lake resources in Montana. The report will be available this summer.

WLI will also be collecting additional data this year to add to the 2007 gasoline constituent loading report. Look for this report towards the end of the year.

WLI Attends Conferences

Montana Chapter of the American Fisheries Society

The Whitefish Lake Institute attended the 45th Annual Meeting of the Montana Chapter of the American Fisheries Society held in Helena in February. The American Fisheries Society (AFS) was founded in 1870 and is the oldest and largest professional society representing fisheries scientists. In addition to promoting continuing resource education and organizing scientific meetings where new results are reported, AFS publishes some of the world's leading fisheries research journals. The Montana chapter was formed in 1967 and now includes about 300 fisheries professionals from state and federal agencies, universities, NGOs, and industry. The 2012 conference focused on "Successfully Navigating the Social and Political Realm of Conservation." The key presenter on the topic was Dr. Scott Bonar from Arizona Cooperative Fish and Wildlife Research Unit/University of Arizona, and author of *The Conservation Professional's Guide to Working with People*. A number of professionals discussed the complex human dimension and the diversity of values and techniques that are part of all conservation efforts. Mike Phillips, executive director of the Turner Endangered Species Fund and a State Representative, discussed the power of politics in decision making about scientific matters. Scientific results reported through papers and poster sessions at the conference covered topics such as restoration projects, water quality trends, fisheries population dynamics, large-scale conservation efforts, anthropogenic and natural limiting factors, suppression efforts, hybridization, effects of climate change, genetic markers to assess impacts of fragmentation, and the use of strontium isoscapes for modeling fish migration. In all, the conference offered an excellent anthology of current research in fisheries sciences. Student members took advantage of opportunities to speak with fisheries professionals, and trade show exhibitors presented the latest in equipment for fisheries field work. -LC

Montana Aquatic Invasive Species Summit

In mid January, WLI attended the 2012 Aquatic Invasive Species (AIS) Summit in Helena. There were several presentations on current efforts from

state and federal agencies. One recurring theme centered on the watercraft inspection stations that Montana Fish Wildlife & Parks and Montana Department of Agriculture will be operating primarily on major highways at border crossings in the state. The general consensus is that the state needs more money to fund boat inspections that help to protect our waterbodies from AIS. Currently, Idaho is our only neighbor that is inspecting boats before they enter Montana. The Idaho Department of Transportation is notifying Montana agencies of boats that are fouled with mussels. Already, in 2012, there have been two zebra mussel fouled boats that have traveled through Montana with the intent of launching in Washington. It is worrisome that in mid-February, we are already threatened by the invasion of mussels, and it only reaffirms the need for additional watercraft inspection stations. WLI participated in the AIS summit by presenting a summary of Northwest Montana Lakes Volunteer Monitoring Network's 2011 prevention and early detection monitoring efforts. In 2011, with help from volunteers, the NWMTLVMN collected veliger (zebra and quagga mussel larvae) samples on all 42 lakes in the program and surveyed 19 lakes for Eurasian watermilfoil. In 2012, the NWMTLVMN will again survey for zebra mussels while expanding the number of lakes surveyed for a host of aquatic invasive plants. -JG

2012 Montana Storm Water Conference Weathering the Storm – Strategies and Solutions for Managing Storm Water

April 10-12 in Kalispell at the Hilton Garden Inn

Storm water experts will provide current perspectives and practical solutions to advance the knowledge and understanding of storm water management in planning, design, implementation, and regulatory compliance. Topics include storm water and property rights, regulatory status, MS4 permitting and construction, storm water planning and management, BMP's, new technologies, funding storm water projects, monitoring water quality and quantity, LID, retrofitting existing infrastructure, developing educational programs, TMDL permitting, and more.

WLI director Mike Koopal will be presenting a paper on the *Bigfork Storm Water Project Pre and Post Construction Water Quality Sampling Design and Analysis*.

Curtis Receives Outdoor Writer Award

Lori Curtis, WLI's Science and Education Director, was recently awarded the 2011 Outstanding Outdoor Writer at the 45th Annual Meeting of the Montana Chapter of the American Fisheries Society held in Helena. Lori was recognized for her work in completing the Flathead Watershed Sourcebook.

The Sourcebook was sponsored by the Flathead Community of Resource Educators Watershed Education Committee. Viewed from a bioregional perspective, it discusses the many people and systems that make up the Flathead Watershed – one of the most biologically intact ecosystems in North America.

Lori brought together over 80 professionals and residents that contributed insight, artwork, and “watershed perspectives” to the book. It took her patience and persistence to blend science and art, nature and human nature into an approachable and appealing publication. Lori also worked to secure funding to print the book, which has become an essential learning tool used by Flathead educators, where teachers and students alike can find information to support a diversity of classroom topics. -MK



Ken Staigmiller, AFS Awards Chair, presented the “2011 Outstanding Outdoor Writer” Award to Lori Curtis.

WLI Website Updated

The Whitefish Lake Institute completed a comprehensive website overhaul in January. We invite you to go online at www.whitefishlake.org and see what we have added. Start in the *Home* page where you can take a 3-D fly-through of Whitefish Lake from high above the lake to below the water and along the shoreline. In *About Us* you will find great information about the people who make the Whitefish Lake Institute function successfully—from our staff and board of directors—to our committees and supporters. The *Programs* section is filled with details about our three major functional areas of work: Scientific Research, Education & Outreach, and Community Stewardship. You can read about where we work, what we do, how we accomplish our work, and who is involved. There is information about our baseline science, our volunteer monitoring program, educational endeavors, ongoing efforts on our Interpretive Nature Trail, and community participation. *News & Publications* has current and archived issues of the *LakeFront* newsletter and our new *ENews*, as well as media releases and press coverage from over the years. You'll also find links to a number of organizations involved in Whitefish water quality issues in *Links & Info*. We welcome your comments about the new site at info@whitefishlake.org. -LC

Wine Auction Call for Donations

Be sure to mark your calendars for Montana's Premier Wine Event: the *Whitefish Wine Auction* to be held July 26 & 27 at The Lodge at Whitefish Lake www.whitefishwineauction.org. Now in its third year, this magnificent event serves as a fundraiser to support the science, education, and community programs of the Whitefish Lake Institute. This is our first call for donations for the event, which includes two raffles, a silent auction, and a lively live auction. In the past, donated items have included gift certificates for restaurants, goods, and services; original art; outdoor recreation and lodging packages; specialty home décor; and numerous wines, winery tours, and wine related items. Check out the 2011 Wine Auction Catalogue for ideas <http://www.whitefishwineauction.org/docs/2011%20Catalogue.pdf>. If you are interested in donating or sponsoring the event, contact Lori at lori@whitefishlake.org or 406.862.4327. We look forward to seeing you there! -LC



**SAVE THE DATE for Montana's Premier Wine Event
to support the Whitefish Lake Institute
July 26-27, 2012 www.whitefishwineauction.org**

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