



LakeFront

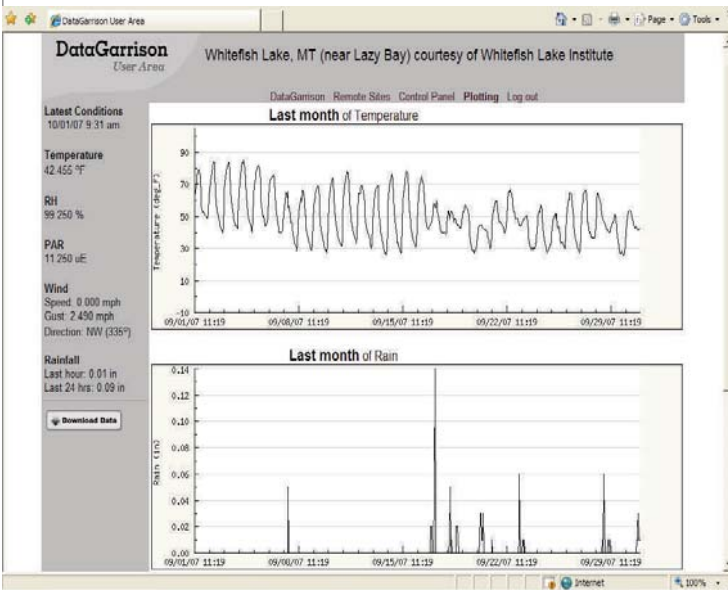
Quarterly newsletter of the Whitefish Lake Institute

Fall 2007

Weather Station Goes On-line

Get real-time and monthly weather information for Whitefish Lake via our weather station (located near Lazy Bay) at our website, or: <https://datagarrison.com/users/400A4GDG1/400A4GDG1/plots.php>

An example of the website is found below:



Information from the station is also stored in a continuous datalogger. The weather station collects temperature, relative humidity, photosynthetically active radiation, rainfall, wind speed and wind direction.

The Institute will use data from the weather station to complement data being collected on the lake. A bulk precipitation collector, shown to the right of the weather

station in the above picture, will determine nutrient deposition (both wet and dry) to the lake. Roughly 30% of the lake's nutrient loading of nitrogen and phosphorus is from atmospheric deposition.

The bulk loading collector works through a moving lid which is activated by rainfall. When it rains a circuit is triggered in the lid moving it over to the dry bucket. When the rain stops, the lid moves back to cover the wet bucket.

Funding for the weather station, satellite uplink, and corresponding atmospheric bulk precipitation collector was made possible by Plum Creek Timber Company, an anonymous donor, Whitefish Lake Institute members, and the City of Whitefish through a Supplemental Environmental Project with the Montana DEQ.

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Whitefish Lake
INSTITUTE

*Protecting and improving the
Whitefish, Montana area
lake resources*

Whitefish Lake Institute

635 Denver Street
Whitefish, MT 59937

Voice: (406) 862-4327

Fax: (406) 862-4341

info@whitefishlake.org

www.whitefishlake.org

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. The opinions expressed in *LakeFront* are those of the authors. We welcome comments and submissions.

Mike Koopal, Editor

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Weather Station near Lazy Creek

What have we accomplished?

- Revealed from our volatile organic compound study that benzene concentrations at City Beach and the Whitefish River could be a potential public health risk, and the City and State have responded.
- Completed a peer reviewed comprehensive monitoring program for Whitefish Lake, and have started implementing it.
- Developed partnerships with Montana FWP, Montana DEQ, Montana DNRC, Flathead National Forest, and Flathead Lake Biological Station.
- Acquired \$50,000 in scientific equipment.
- Installed a full service weather station near Lazy Creek. Citizens can access real time weather information at our website.
- Initiated a channel stability monitoring project on 40 stream locations around Whitefish through a cooperative project with the Flathead National Forest.
- Hired a part-time scientist during the busy summer period to help with the scientific workload.
- Worked to increase the Flathead Lake Biological Stations annual appropriation from the State of Montana by \$25,000 to be used specifically on Whitefish Lake. A Letter of Agreement between the Flathead Lake Biological Station and the Whitefish Lake Institute has also been signed outlying the agreement.
- Presented to over 30 classrooms in the Flathead Valley on various aquatic issues.
- Informed members through our quarterly newsletter, *LakeFront*.
- Represented Whitefish water quality interests at various meetings throughout the Flathead Valley.
- Provided a monthly education column in the Whitefish Pilot for two years.
- Due to receive as a gift 30 acres of vital wetlands habitat along Wisconsin Avenue that will protect wildlife habitat and preserve water quality to Whitefish Lake.

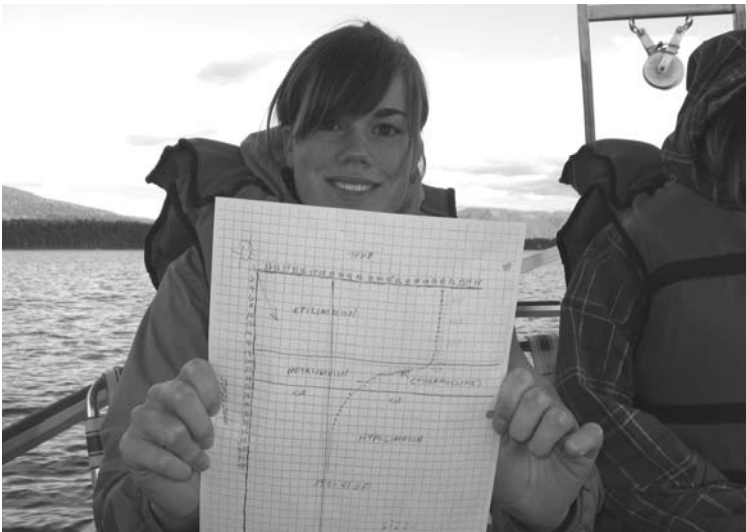
What do we have planned?

- Expand our lake sampling effort to include bay sampling in order to pick up changes happening in specific areas of the lake.
- Initiate a study of the lake to determine if faulty septic systems are impacting water quality.
- Expand our tributary sampling effort to include all inlet streams.
- Sponsor a “Whitefish Conservationist” award positively highlighting the efforts of individuals, businesses, or government agencies that improve water quality in Whitefish.
- Reach more school groups and civic groups through our public awareness efforts.
- Develop an annual fundraiser in cooperation with The Lodge at Whitefish Lake to bring people interested in water quality together for a fun-filled evening.
- Place a conservation easement on the Viking Creek Wetlands Preserve to provide an additional layer of protection from development.
- With partners, construct an interpretive trail network in the Wetlands Preserve and allow limited public access.
- With partners, oversee the restoration of the Wetlands Preserve.

Summer and Fall Photos



Whitefish High School Project FreeFlow students enjoy an outing on the lake while they collect data in Beaver Bay. Below, Tara Sullivan displays a chart of their data, showing that as of late October, the lake is still stratified into three distinct layers based on temperature from top to bottom.



Scientist Chris Ruffatto reads a VanDorn water sampler during a crisp autumn day on the lake. A messenger (held in Chris' right hand) is sent down the steel cable to trigger a button on the VanDorn sampler, closing both ends. The sampler allows water quality samples to be collected at specific depths in the lake.



The conceptual trail layout in the Viking Creek Wetlands Preserve gets some fine tuning by Citizen Advisory member Susan Fletcher, wetlands ecologist Amy Chadwick of Watershed Consulting, and Citizen Advisory member Greg Gunderson.



Mike Koopal records water quality data while Chris Ruffatto measures a stream flow on Swift Creek. Understanding nutrient input and the volume of water entering the lake from tributaries is one component to understanding the overall nutrient cycling for the lake.



Whitefish High School advanced chemistry student Lindsey Schwickert analyzes a phosphate sample from Viking Creek as fellow students Shane Dunlock, Desiree Clarke and Justin Rubalcaba look on.

Introduction to Project FREEFLOW

FREEFLOW stands for Flathead River Educational Effort for Focused Learning in Our Watershed. There are 12 schools in the Flathead Valley who participate in the program. At Whitefish High School the program is offered as a Gifted and Talented, Extracurricular activity that focuses on Water and Natural Resource Issues.

FREEFLOW is designed for those students who wish to go beyond the classroom and get involved in current topics that affect our community. Related fields of study would include: hydrology, chemistry, forestry, fisheries, wildlife, recreation, public utilities, conservation, biology, soils, geology, civil engineering and industrial water development. Many opportunities exist to work with people who are professionals in these fields.

FREEFLOW students measure the chemical, physical and biological characteristics of Haskill Creek three times per year (during school time), and monitor Whitefish Lake from two to four times per year depending on weather conditions (usually right after school). During lake sampling we use a specially designed pontoon boat that has been designed to act as a safe, floating laboratory courtesy of the Whitefish Lake Institute. Special events, such as storm water runoff sampling, are sometimes done on the spur of the moment in order to catch a peak event.

Several field trips and special presentations are scheduled each year. These cover a wide variety of topics as the program remains responsive to contemporary issues

to water resources. We have looked at golf course development, groundwater contamination, protecting bull trout habitat and even gasoline contamination in the Whitefish River. This year we will focus on Whitefish Lake and Cow Creek in addition our long term monitoring on Haskill Creek.

Students in the past have really enjoyed collecting samples on Flathead and Whitefish Lake, planting wetlands vegetation, touring hydroelectric plants, visiting automated water monitoring sites around Montana, trying their hand at water witching, hiking on and studying Big Mountain water issues, collecting aquatic insects, attending the Montana Water Summit, attending the Montana Envirothon, conducting fish surveys, planting fish, touring water treatment plants, etc.

Project FREEFLOW enjoys a working relationship with many private and public entities: Montana Fish Wildlife and Parks / Flathead Conservation District / University of Montana Biological Station, Yellowstone Bay / United States Forest Service, Tally Lake District / Whitefish Mountain Resort / Montana Department of State Lands / City of Whitefish, Public Works / Stoltze Land and Lumber / Iron Horse Golf Course / Liberty Drilling / The Montana Watercourse / The Glacier Institute / Plum Creek / DNRC / Flathead County Health Department / Whitefish Lake Institute / Whitefish Water Quality Advisory committee / Haskill Creek Water Users Coalition. - CR

Be a "Good" web searcher

The Whitefish Lake Institute and GoodSearch.com have partnered

GoodSearch.com is a new search engine that donates half its revenue, about a penny per search, to the charities its users designate. You use it just as you would any search engine, and it's powered by Yahoo!, so you get great results.

Make your Holiday shopping easy! GoodShop.com is a new online shopping mall which donates a percentage of each purchase to your favorite cause. More than 100 great stores including The Gap, Best Buy and Barnes and Nobel have teamed up with GoodSearch and every time you place an order, you'll be supporting our efforts to study Whitefish Lake.

Just go to www.goodsearch.com and be sure to enter **Whitefish Lake Institute** as the charity you want to support. If you are a business owner, consider making GoodSearch.com the homepage or search engine on all the computers at your place of business. -MK

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