

LakeFront

Quarterly newsletter to Whitefish Lake Institute members

Spring 2006

Annual Meeting Summary

-Gene Hedman, President

For those of you who missed the Saturday (May 13) annual meeting of the Whitefish Lake Institute, we can only say that we missed you, and that those of you who were unable to attend missed a great day on the lake with plenty of food and beverage, boat rides, and opportunity for personal edification regarding the geologic history of Whitefish Lake, along with some pertinent new information.

It impresses me that, when I listen to that geologic history of the lake, and consider the 10,000 years that preceded man to these shores, that events that had previously been proceeding at a geologic pace are now proceeding, relatively speaking, at the pace of the Indianapolis 500. There is plenty to be concerned about, and the need for an institution such as ours is clearly apparent. It can truly be said that there is no time to waste.

We now have a year of history behind us and some specific achievements upon which future progress can be predicted. We have the water quality monitoring program in place to monitor the lake for the long-term; we have a volatile organic compound study detailing the potential health risks for people recreating in the lake and for the ecosystem; we have completed a social survey designed to document lake user density and user types; we have done a campaign to create public awareness of lake issues through a monthly article in the Whitefish Pilot, *LakeFront*, and presentation to school groups and community organizations; and we have become a clearing-house for lake information which contributes to a growing common vision for the lake.

All of this has been done with very limited funds; however, we are now at the point where we need to complete our membership drive (continued on page 2)



At the Institute's annual meeting, Dick Solberg and Chris Ruffatto, members of the Institute's Technical Advisory Committee, take a group out on the lake for an interpretive natural history lesson and

IN THIS ISSUE...

Annual Meeting Summary.....	1
Limnology 101– Spring Turns to Summer in the Lake.....	2
Executive Director's Essay.....	3
Recent Field Trips.....	3
Annual Meeting Photos.....	4
Membership.....	5
Institute Logo Wins Award.....	5
Become a Member.....	6



**Whitefish Lake
INSTITUTE**

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

501 (c)(3) Non-Profit Corporation

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.

Board of Directors

Gene Hedman, *President*
Jack Fletcher, *Vice President*
Charlie Abell, *Secretary/Treasurer*
Bill Leonard
Dr. Michael Ricker
Karen Reeves
Jim Stack
Nancy Svennungsen
MT. Sen. Dan Weinberg

Technical Advisory Committee

Mark Deleray
Tony Nelson
Chris Ruffatto
Dick Solberg
Brian Sugden
Wayne Svee

Citizens Advisory Committee

Bayard Dominick
Greg Gunderson
Dan Keyes
Sue Moll
Steve Qunell

Staff

Mike Koopal—Executive Director

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

Printed on re-cycled paper.

Logo design by Carbery Creative.

Cover photo courtesy of:
GravityShots.com

(Annual Meeting Summary, continued from page 1)

in order to garner more funds so that more can be done.

We absolutely do not duplicate anything else that is being done by any other institution, governmental or not. Perhaps as importantly as any other element, we have been able to put together the citizen's advisory group, technical advisory committee, and a board of directors, all of whom have the same long-term vision and concern about the jewel which exists in our backyard.

Thanks to all of you for your help. I could not be more pleased with the composition of our committees and board along with the new members I see joining our group. It gives me great confidence in the future of our institution and the ultimate benefit to Whitefish Lake. We can all be proud of what we have accomplished to this date.

Special thanks to Bay Point Country Homes and Bay Point on the Lake for allowing us to use their facilities for the annual meeting and to the Great Northern Brewery and Montana Coffee Traders for supplying refreshments. Thanks to Dick and Jane Solberg, as well as Gayard Dominick, for the use of their boats; thanks to Steve Qunell and Greg Gunderson for being such good chefs, and thanks to Chris Ruffatto for his commentary out on the lake.

We couldn't have had better weather and the turnout was certainly acceptable. I look forward to seeing you next year.

Limnology 101- Spring Turns to Summer in the Lake

What goes on underneath the surface of a lake is often a mystery to most people. After all, who spends time down there? Fortunately, scientific equipment gives us the opportunity to partially understand lake dynamics.

Take for instance the relationship between water temperature and density. Perhaps you've heard of spring and fall turnover in lakes?

The reason for lake turnover is the unique property of water, which is densest at 39.2 degrees Fahrenheit. In other words, cooler and warmer water are lighter. Did you ever wonder why ice floats or why the entire lake doesn't freeze from the bottom up?

In spring, cold surface water temperatures warm to the magical 39.2 F. This is the same temperature as the deeper portions of the lake, which remain at 39.2 F for most, if not all of the year. As temperatures become uniform, water has a greater tendency to mix. This mixing process is helped along by strong spring winds. During this time, nutrients also become more evenly distributed throughout the lake. In Whitefish Lake, this usually happens in April.

During summer, as solar radiation heats the surface layer of the lake to above 39.2 F, density changes stratify the lake into three distinct layers. The warmer surface layer of the lake forms what's called the epilimnion and this water literally floats on top of the other two layers. In fact the epilimnion heats to over 70 F during the summer months. Within this layer, almost all of the primary productivity occurs due to the light penetration that feeds photosynthesis.

Below the epilimnion is a transitional zone called the metalimnion, where there is a rapid shift in both temperature and density. Below the metalimnion is the hypolimnion, or bottom layer of the lake. The hypolimnion remains cold and near the maximum density of 39.2 F throughout the year.

There is a direct correlation between water temperature and dissolved oxygen concentrations. The cooler the water, the greater its ability to hold oxygen. During the dog days of summer, the bottom of the lake is the preferred hang out for most species of fish since it is both cold and has plenty of dissolved oxygen.

In the fall, the lake once again turns over due to the cooling of surface waters that sink deeper into the epilimnion. Convection currents and wind do the rest. In the winter, Whitefish Lake will again stratify around mid-December with cooler water floating over warmer water. It's all about density. —MK

Executive Director's Essay

The Younger Crowd -Mike Koopal

We know that 88% of the kids in Whitefish recreated at Whitefish Lake in 2005 from the social data collected by the Institute.

I found that data a bit surprising considering that there are so many opportunities for kids in this area. Although I don't have the data to back me up, I suspect that Whitefish kids do not exhibit the same levels of use for either Big Mountain or Glacier National Park—the two other big draws in the area.

So what does all of this mean? Even though kids are becoming masters in the world of multi-tasking and have many activities to choose from, they seem to especially value and make time to enjoy the lake.

And why not? The lake is a great place to meet friends, enjoy spectacular scenery, all with the opportunity to cool off.

In fact, that is exactly what they told us. The survey found that of the 88% that recreated on the lake, 87% participated in their most favorite activity—swimming. Of that percentage, 29% swam twenty or more days.

When asked what the kids liked best about Whitefish Lake, they noted it was a great recreational opportunity with beautiful scenery, and it is close to town.

But, they also had concerns. At the head of the list were pollution/water quality and that the lake is, or will become, too crowded.

Sound familiar? Other than the fact that you probably don't swim that much, I would bet that the adult residents and visitors of Whitefish have parallel thoughts and concerns about the lake.

At the Institute, it is our goal to educate the younger crowd about local aquatic resources. We've been in elementary and high school classrooms in both Whitefish and Kalispell but there's no substitute for getting kids out on the lake to discuss the issues.

After all, this younger crowd will inherit the ever-challenging issues of protecting water quality as growth continues in the Flathead. If we provide them with an awareness of lake issues, they will have an important tool in their toolbox as they become community leaders.

I also suspect that someday, the kids of Whitefish will have kids of their own. And, perhaps, since they are aware of lake issues, they can talk to their own children about how they can be good stewards of our backyard jewel.

Recent Field Trips



Chris Ruffatto, Whitefish High School Science Teacher and a Technical Advisory Committee Member for the Institute, shows students the City of Whitefish's sewage lift station on Wisconsin Avenue. All sewage north of the lift station, including all of Big Mountain, must be pumped up the hill to the Alpine Market area before being fed by gravity. Chris and Mike Koopal of the Institute took the students to five locations around the lake to discuss lake issues and trends. These students, part of the Project FreeFlow Program, then headed to Haskell Creek in the afternoon to collect stream channel and biological data as part of a long-term monitoring effort.



Mike Koopal, Executive Director of the Institute, talks to students from the Hope Ranch at City Beach. The group stopped at four locations around the lake and discussed topics ranging from the lake's geology to current issues. In the afternoon, the students headed to the library to meet with an open panel consisting of John Wilson, Dan Keyes and Windy Compton-Ring from the City of Whitefish, Paul Heidegger of Park Place Realty and Mike Koopal. The students had the opportunity to ask questions about the growth in this area and how it is being addressed. Field trip organizer Karen Porteous from the Hope Ranch wanted the students to learn more about local issues in Whitefish so that they might become more involved in their local communities when they return home.

2006 Annual Membership Meeting Photos

The meeting was a good time to talk about lake issues.



Life is pretty good for Ada Qunell. Her dad, Steve, is on the Citizens's Advisory Committee.



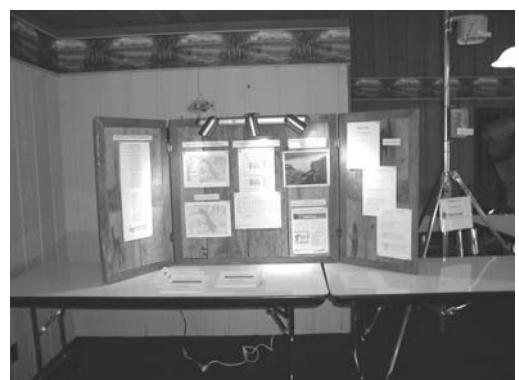
Rob Ford thought that sunshine meant warm water. He didn't last long!



The Institute's weather station, donated by Plum Creek Timber Company, was on display.



Institute members Eric and Cami Sawtelle enjoy the good eats.



The Institute provided information on lake issues.

Membership

Note: We have combined the former Individual/Family and Business Membership categories into a new five category format to reduce confusion and to streamline our databases. We have also added the Research Guarantor category. Membership data as of May 22, 2006.

Research Guarantor (\$1,000 and above)

Dick and Sandra Boyce- Portola Valley, CA
 John and Anne Collins- Whitefish, MT
 Bill and Ruth Leonard- Whitefish, MT
 Plum Creek Timber Company- Columbia Falls, MT
 Scott and Cindy Schmid- Portland, OR

Lake Visionary (\$500)

Richard and Carol Atkinson- Whitefish, MT
 Mark and Constance Cowett- Bozeman, MT
 Carl Hulick- Pasadena, CA
 InvesTech Research, Jim and Lisa Stack- Whitefish, MT
 Mark Mance- San Francisco, CA
 Matt and Ellen Moran- Portola Valley, CA

Lake Benefactor (\$250)

Big Mountain Resort- Whitefish, MT
 Connie Davis, Continental Crown Real Estate- Whitefish, MT
 Bayard Dominick- Whitefish, MT
 Jim Colla- Whitefish, MT
 Joseph Eve- Whitefish, MT
 First Interstate Bank- Whitefish, MT
 Greg and Susan Fletcher- Whitefish, MT
 Jack and Florence Fletcher- Whitefish, MT
 Jean Galloway- Denver, CO
 Gene Hedman- Whitefish, MT
 Bill and Ann Jones- Whitefish, MT
 Mike and Mae Koopal- Columbia Falls, MT
 LaChance Builders- Whitefish, MT
 The Lodge at Whitefish Lake- Whitefish, MT
 Tom and Nancy Suiter- Woodside, CA
 Mark and Nancy Svennungsen- Whitefish, MT
 Watershed Consulting- Whitefish, MT
 Dan and Gayle Weinberg- Whitefish, MT
 Third Street Market- Whitefish, MT
 Whitefish Credit Union- Whitefish, MT

Lake Leader (\$100)

American Bank- Whitefish, MT
 Peter and Cheri Aronsson- Tucson, AZ
 Charlie and Susan Abell- Whitefish, MT
 Koel Abell- Portland, OR
 Sharlot Battin- Whitefish, MT
 Bay Point Country Homes- Whitefish, MT
 Larry and Anne David- Thousand Oaks, CA
 Forestoration, Inc. - Whitefish, MT
 Les Hardy, Jr.- Whitefish, MT

Lake Leader (\$100) (continued)

Jim and Marion Kibbe- Whitefish, MT
 Kintla Copy & Creative- Whitefish, MT
 Joseph and Patricia Kogutek- Whitefish, MT
 Greg and Mary Anne Moffatt- Encinitas, CA
 Sharon Morrison- Whitefish, MT
 PBS&J Consulting- Missoula, MT
 Michael and Dot Ricker- Whitefish, MT
 Bill and Linda Sawtelle- Colleyville, TX
 Dick and Jane Solberg- Whitefish, MT
 Towne Printer- Whitefish, MT

Lake Sponsor (\$40)

Anonymous
 Tarn and Marybeth Abell- Prattville, AL
 Duane Bauch- Whitefish, MT
 Valerie Bauch- Whitefish, MT
 Dale and Gayle Bax- Whitefish, MT
 Ronald Chauner- Aspen, CO
 Vincent and Sally De Rosa- La Canada, CA
 Flavours Personal Chef Service, Susan Schnee- Whitefish, MT
 Judah and Tanya Gersh- Whitefish, MT
 Giselle Harring- Whitefish, MT
 Dewey and Sandra Hartman- Whitefish, MT
 Rollin and Carole Harwood- Whitefish, MT
 Susan Hauber- Norwalk, IA
 Dennis and Frankie Johnson- Whitefish, MT
 Jack and Betty Koopal- Johnston, IA
 Jim and Pam Lewis- Whitefish, MT
 Harold and Marie Lockhart- Whitefish, MT
 Mud Lake Land & Lumber Company- Bigfork, MT
 Randy Ristau- Missoula, MT
 Karl and Elaine Roosa- Deer Lodge, MT
 Eric and Cami Sawtelle- Whitefish, MT
 Mike and Timmie Smart- Helena, MT
 David and Jeannine Trousdale- Whitefish, MT
 Victorian Casino- Whitefish, MT
 Wayne Svee- Helena, MT
 Warren Vaughan- Billings, MT
 Nancy Woodruff- Whitefish, MT

Donated Goods and Services

Christine Hensleigh- Whitefish, MT, Cora Christensen, EA- Whitefish, MT,
 Great Northern Brewery- Whitefish, MT, Indistans Web Development-
 Kalispell, MT, InvesTech Research- Whitefish, MT, Montana Coffee
 Traders- Whitefish, MT, Mobile Logistics Mapping- Whitefish, MT,
 Gravityshots.com- Whitefish, MT, Watershed Consulting- Whitefish, MT

Whitefish Lake Institute Logo Wins Award

The Whitefish Lake Institute logo recently took the Bronze Medal under the Public Service Category at the Summit International Awards. The logo was designed by Carbery Creative of Whitefish.

The Summit Creative Awards were created to recognize the creative accomplishments of small and medium sized advertising agencies and other creative companies throughout the world. Companies and individuals from more than 50 countries and five continents participate in its awards programs.

Carbery Creative provides high-end graphic design, website



**Whitefish Lake
INSTITUTE**

development and illustration services. Carbery Creative partners with web development, marketing and print professionals to create powerful marketing and communication products.

Sign Me Up! Please enroll my membership in the Whitefish Lake Institute.

- My check is enclosed
 Visa Mastercard

Account #: _____

Expires: _____ Signature _____

Name _____

Address _____

City _____ State _____ Zip _____

Please check your **Annual Membership** category:

- Research Guarantor \$1,000+
 Lake Visionary \$500
 Lake Benefactor \$250
 Lake Leader \$100
 Lake Sponsor \$40

Special Giving

- Endowment Fund (\$500 +)
 Frank Morrison, Jr. Scholarship Fund

*Your Contribution is 100% tax-deductible.
501 (c) (3) non-profit corporation*

Whitefish Lake Institute • 635 Denver Street • Whitefish, MT 59937

Visit us at www.whitefishlake.org

Whitefish, MT 59937
635 Denver Street

