



LakeFront

Quarterly Newsletter of the Whitefish Lake Institute

Winter 2019

WLI Welcomes New Board Members

WLI is excited to welcome two new board members to the team; Camisha Sawtelle and Debbie Pierson.



New board members (L-R) Cami Sawtelle and Debbie Pierson.

Camisha is an attorney whose practice focuses primarily on land and water law. Camisha was raised in the small town of Huntsville, Utah. She received a Bachelor's degree in biology from the University of Oregon in 1998. Camisha then worked as a transient field biologist throughout the Western US for four years before returning to school to pursue a Master's Degree from the School of Forestry and Conservation at the University of Montana. Following graduate school Camisha took a job with the Tahoe Regional Planning Agency. Concluding a field season in Lake Tahoe, Camisha readily returned to Montana and worked for a small environmental consulting firm in Whitefish. After four years of consulting work on rivers and streams of Montana, Camisha enrolled in law school at the University of Montana with the plan to apply her science background to her legal work. Camisha feels lucky to call Whitefish, Montana home. She lives with her husband Eric and sons Keller Rye and Ruedi Max. (con't on Page 3...)

Lake Elevation– A Closer Look

WLI has compiled 61 years of lake elevation data for Whitefish Lake. In 2015, WLI produced a memo with summary statistics detailing various lake elevation attributes. For instance, the lake elevation annually fluctuates on average 3.81 feet. The minimum fluctuation of the lake occurred in 1977 at 2.21 feet as compared to the maximum fluctuation in 1996 of 5.03 feet.

Between 1957-2014 the mean high water elevation was 3,000.63 feet above sea level and the mean low water elevation of the lake was 2,997.06 feet. In 2015, a record low elevation of 2,996.03 feet eclipsed the previous low water elevation of 2,996.28 feet from 1967. Of interest is the continued low water elevations of the lake since 2015. From 2016-2018 the low water elevation was much lower than the historic average. (con't on Page 3...)

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Back issues available at www.whitefishlake.org



A 501 (c)(3) Nonprofit Corporation



Whitefish Lake Institute
550 East 1st Street #103
Whitefish, MT 59937

Voice: 406.862.4327
Fax: 406.862.0686
info@whitefishlake.org
www.whitefishlake.org

Founded in 2005

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

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Cover Photo:
*WLI staff at City Beach surveying a
Whitefish Lake elevation*



We are gearing up for the Montana Lakes Conference to be held March 13-15 at The Lodge at Whitefish Lake, and hope you are too! We'll be featuring 30 talks in two concurrent sessions offering knowledge in areas such as Research & Management, Lake Associations & Citizen Science, Watershed Protection, Aquatic Invasive Species, Fisheries Management, Education & Outreach, Floodplain Management & Contaminants, and Policy & Commissions. The conference workshop—***Lake Ecology 101: How biology, chemistry and physics interact to shape how lakes function*** will be taught by Shawn Devlin of the Flathead Lake Biological Station and WLI from 1:00 to 4:00 PM on Wednesday 3/13, and is ***open to the public and free of charge***. This will be an excellent opportunity to learn more about the waterbodies you love and on which you enjoy recreating, and how they function from a biological, chemical and physical perspective.

We are very excited about our Keynote and Plenary speakers. Conference attendees will have a rare opportunity on Thursday, March 14 at 9:30 AM, to hear global climate strategist, Dr. Edward Cameron put our changing climate in perspective during his conference keynote: ***A just and sustainable world: Building low-carbon, climate resilient and inclusive economies***. We are thrilled that Dr. Jim Elser, Director of the Flathead Lake Biological Station, will follow with his plenary talk at 10:30 AM, ***The state of (some) Montana lakes***. Dr. Geoffrey Schladow, Director of the Tahoe Environmental Research Center, will then engage us in ***The meaning of lake restoration in the face of climate change: The case of Lake Tahoe at 11:15 AM***. And, Glacier National Park Superintendent Jeff Mow's will present a luncheon keynote on Friday, March 15th at 12:10 PM, ***Glacier National Park: Challenges and opportunities during uncertain times***.

We are also pleased to offer a community presentation jointly presented by Dr. Jim Elser, Director of the Flathead Lake Biological Station and Erich Pietzsch, physical scientist from the USGS Northern Rocky Mountain Science Center. The presentation ***A glimpse of fading glaciers: Impacts on life in mountain regions*** will take place on Wednesday 3/13 at 7:00 PM at the Whitefish Performing Arts Center after a Welcome Reception. ***This presentation is open to the public and free of charge***. Nine posters will be presented at the conference—some traditional, others engaging young students and community members. WLI will also be presenting its annual ***Stewardship Award*** and the ***Chris Ruffatto Excellence in Education Award*** at our Conference Banquet. Click on Montana Lakes Conference from the WLI website for more information. Please join us to rub elbows with some of the leading lake and climate scientists in the world—we hope to see you there!

(New Board Members, con't from Page 1...)

Debbie's love of Montana began at a young age when her Dad's positions with the US Forest Service brought the family to the Flathead Valley. Debbie graduated from Flathead High School and received a BA in Interpersonal Communications from the University of Montana. Her most rewarding summer job was working on the Youth Conservation Corps Trail Crew, improving recreational trails throughout the Flathead National Forest, and building the first leg of the Danny On trail on Big Mountain.

Debbie began her professional career working for non-profit organizations, including positions with the Arthritis Foundation, Special Olympics, United Way and the American Red Cross. Debbie has spent the last 12 years working for Flathead County and currently serves as the Clerk & Recorder. Prior to her elected role, Debbie worked for the Commissioner's Office managing special projects, which included writing and administering grants. Her most noteworthy accomplishment was facilitating the Bigfork Stormwater Project, a collaborative community project utilizing federal, state and local funding to upgrade the stormwater management system in Bigfork village. Debbie feels that implementing practices to improve and protect water quality are vital to sustaining the life we all enjoy in the Flathead Valley.

Debbie and her fish-slaying husband Mike live in Whitefish. When not enjoying recreation on local lakes and rivers, Debbie spends her time relaxing at home with family, friends and her golden retriever...the only "child" still in the nest!

Summer Internship Opportunity

One of the most important aspects of WLI's educational programming is to encourage and mentor students. WLI has been hosting college interns for several years. Thanks to our Ripple Effect Scholarship Fund, a \$1,000 scholarship is awarded to an upper level university student who completes a successful summer internship with WLI.

WLI interns learn about streams, rivers and lakes, watershed processes, limnological data collection, and data processing and analysis. The intern also learns about—and participates in—the daily functioning of a non-profit corporation. WLI attempts to match the intern with special projects that are in their interest area. One intern can be accepted each summer. Internship applications are due April 15.

To learn more about the internship and application, visit our website: www.whitefishlake.org.

(Lake Elevation– A Closer Look, con't from Page 1...)

In 2016, the low water elevation was 2,996.52 feet, in 2017 it was 2,996.1 feet, and in 2018 it was 2,996.26. So why are we seeing consistently low water elevations in recent years?

Lower lake elevations can be attributed to three primary variables commonly associated with climate change. First, if there is no or reduced ice cover, the lake will lose a significant amount of elevation due to evaporation. WLI has patched together all known ice data from different observers over time. From 1914 to 1962, Whitefish Lake did not freeze 8% of the time for the 48 year period. No records exist for 1962 to 1995. From 1996 to 2015, the lake did not freeze 27% of the time. If this trend continues, it represents a significant departure from historic conditions. If there is no ice cover, the lake will heat up faster in summer, increasing the evaporative rate.

The second variable is that even though our snowpack has been near average in recent years, we have recently experienced flash droughts during the summer. The Whitefish Pilot recently reported that precipitation in 2015 through 2018 for the months of June, July and August was below average as measured in Kalispell, according to the U.S. Department of Agriculture. The average precipitation between 1980 and 2010 for those months combined is 5 inches. In 2018, those months saw a combined 2.42 inches of precipitation, in 2017 there was 1.71 inches, in 2016 there was 3.93 inches, and in 2015 just 1.09 inches for the same months.

Climate change is driving the timing and magnitude of runoff from the mountains. Whitefish Lake is getting more volume loading to the lake from streams earlier in the year but base stream flows in summer are decreasing.

The last factor in the water elevation equation for Whitefish Lake involves water consumption. The three largest water rights holders include the City of Whitefish, Whitefish Lake Golf Course and Mountain Harbor comprising 88% of the potential consumptive use. In total, there are 228 unique water rights totaling 8,510.92 acre feet for this 3,341 acre lake, but that doesn't mean that actual consumption nears that potential. The City of Whitefish draws municipal drinking water from the lake to augment the Haskill Basin source, especially in late summer and fall during base stream flows.

In 2015, WLI ran a scenario for the previous year and found that 2.57 inches of lake would have been drawn down by consumptive use. Bottom line, climatic conditions currently influence Whitefish Lake elevations substantially more than consumptive use.

—Back issues of *LakeFront* available at www.whitefishlake.org—

Winter Photos– Whitefish Wildlife



Urban Wildlife– A whitetail buck and a pileated woodpecker outside the WLI office.

Wetland wildlife– An elk calf walks through the Averill's Viking Creek Wetland Preserve.



A white-tailed buck makes it way through the Averill's Viking Creek Wetland Preserve.



This camera location has provided photos of multiple animal species— this time a bull elk.



A black bear ambles through the snow and it looks like it has put on weight ahead of hibernation.



A coyote runs through the wetlands. This area is important habitat for wildlife species in the wildland / urban interface.

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Whitefish Lake Institute ♦ 550 East 1st Street #103 ♦ Whitefish, MT 59937

Voice: 406-862-4327 ♦ Fax: 406-862-0686

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