



Barr Lake and Milton Reservoir Watershed Association

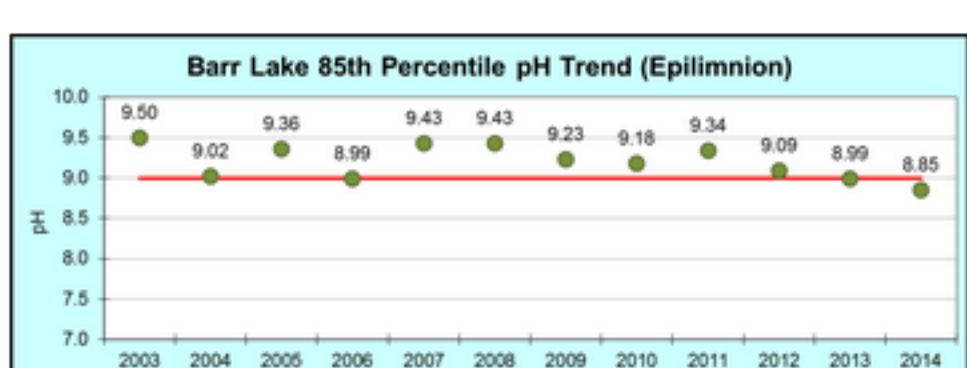
Barr Lake Meets pH Standard Two Years in a Row

Why BMW Association exists is all because of pH. Barr and Milton have had problems staying below the standard of 9.0 for the past 20 or so years. The BMW group was formed to work collectively on this water quality issue and to assist the state and EPA in developing a Total Maximum Daily Load (TMDL) that would solve the pH as well as dissolved oxygen problem. Now that the TMDL is complete, the Association has embarked on the beginning stages of implementation.

For the second year in a row, Barr Lake achieved the pH standard. In 2013, 85% of the pH data were below 9.0 because of a small reduction in alkalinity (the amount of base in the water that has the ability to buffer pH changes) and a reduction in algae growth (the greater the algae growth, the higher the pH). Then in 2014, Barr Lake again attained pH below 9.0 85% of the time. For 2014, it was most likely a result of the fall 2013 storm event that filled the lake with flood waters from Bear Creek Reservoir.

The two main factors that control the pH in Barr Lake and Milton Reservoir are alkalinity and Chl-a. The goal is to reduce alkalinity from about 160 mg to about 95 mg as CaCO₃/mL and to keep Chl-a (algal productivity) below 20 µg/L. In 2014, the June-September alkalinity average for Barr Lake was 116 as CaCO₃/mL and the Chl-a average was 25.7 µg/L.

We will see what 2015 has in store for the lake. If alkalinity continues to decline along with a decline in nutrients, we may see another good water quality year.



Winter-Time Reservoir Sampling

Many lake and reservoir monitoring programs do not sample during the colder winter months. Not the BMW Association. Barr and Milton are monitored all 12 months of the year, mainly because they are filled during the winter months. Starting in March, both reservoirs are sampled twice a month while between November and February they are only sampled once per month. This winter-time sampling requires heated gloves, hats, and boots and a keen knowledge about ice safety.

In most years, ice forms on Barr and Milton in early January and melts by mid March. Ice as thick as 14 inches can form on these reservoirs. Milton Reservoir seems to consistently have thicker ice and for a longer period than Barr Lake.

Sampling on ice demands the use of safety protocols and specialized equipment including ice pickets, cleats, and training in ice rescue. Chipping holes in the ice for lowering sampling equipment into the water as well as keeping the equipment from freezing up are frequently encountered winter-time challenges.

Jordan Parman, Water Quality Technician with Metro Wastewater Reclamation District, is a certified ice rescuer and conducts wintertime sampling on Barr and Milton each year.



External Loading

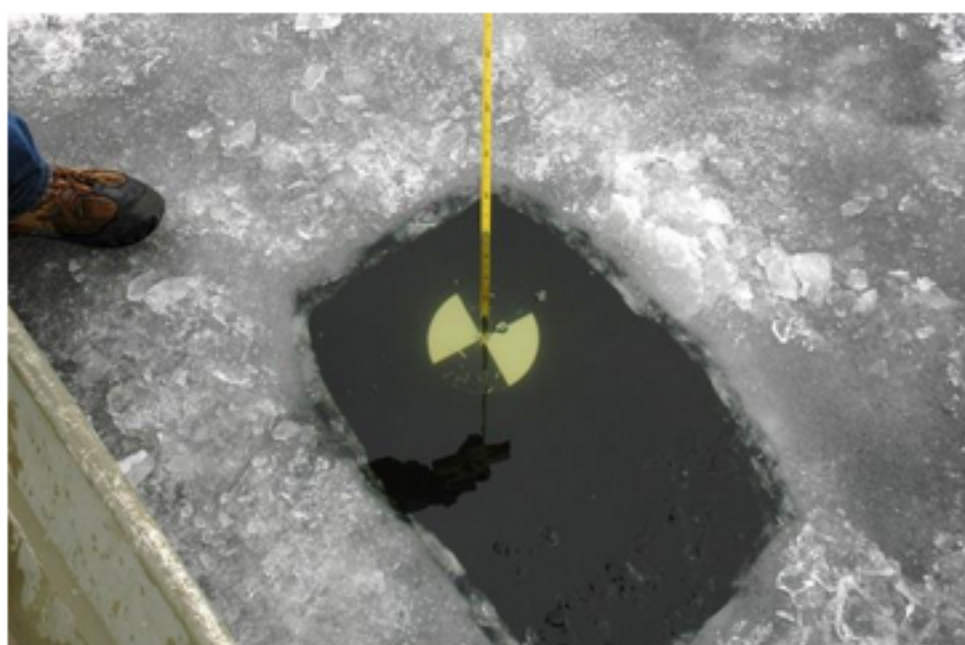
What is external loading and how does it get to Barr and Milton?

External loading occurs when a pollutant that originates from the surrounding land or watershed makes its way into the lakes. There are many sources that contribute to the external load. Point sources are one such source and are usually defined by a pipe that sends water and pollutants into a stream that eventually flows into the lake. An example of point source is rain water running off the rooftop, driveway, and streets and washing any nutrients, dirt, or fertilizers with it into the storm drain. Non-point source is another type of external loading and is something you can't point at. For example, dust and nutrients can "rain" down onto a lake from aerial deposition. Groundwater that enters a lake, even though it might enter the lake below the surface, can bring with it nutrients, representing another type of non-point source external loading.

External loading of phosphorus makes up about 94% of the total annual load to Barr Lake and Milton Reservoir. From large wastewater treatment facilities to individual lawns, it all adds up.

How Clear are the Lakes Under All that Ice?

For January, Barr Lake's Secchi depth was 1.4 meters or 4.6 feet. Milton Reservoir's water clarity was a whopping 7.05 meters or 23.1 feet. Water clarity is measured with the Secchi dish, an 8-inch diameter, black and white disk that you sink until you can no longer see it from the lake surface.



Fun Activities Planned for 2015

The BMW Association Information and Education (I/E) Committee is entering into its second year of active service. I/E is an important part of the formula to improve water quality conditions in Barr and Milton.

Starting in April and March, new 2015 volunteers from both the Rocky Mountain Bird Observatory (RMBO) and Barr Lake state park will receive specialized training in local water quality issues. Part of the training will include in-depth presentations on the history and water quality conditions in Barr Lake. Fun events at Barr Lake where visitors and participants can learn about the watershed and the lake itself include a Raptor Run on April 11, Lake Appreciation Day on July 11, Fall Birding Festival on September 12, Harvest Festival on October 10, and the Halloween Trail on the night of October 24.

Other events where the BMW booth will be displayed include festivals and local celebrations around the watershed. Look for our booth at end of the school year activities in local schools, the Commerce City water festival, River Fest at the Confluence on June 27, Adams County Fair on July 31, Brighton Eco Fair in September, River Clean-Up along the S. Platte in the fall, and other near-by watershed association conferences.

The BMW Association booth is fun to visit if you happen to attend one of these great events in 2015. BMW gives away free coloring books that are fun and educational for youth. Kids can also design and color a T-shirt that can be screen printed right at the booth. We will also hand out other goodies and provide a wealth of information about Barr Lake, Milton Reservoir, and the health of the watershed. If you see us, please stop by.

Important Websites:

BMW Association <http://www.barr-milton.org/>

Barr Lake State Park <http://www.cpw.state.co.us/placestogo/parks/BarrLake>

Rocky Mountain Refuge/National Wildlife Refuge www.fws.gov/refuge/rocky_mountain_arsenal/

Weather www.crh.noaa.gov/bou/

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Welcome to the quarterly newsletter of the Barr Lake and Milton Reservoir Watershed (BMW) Association assembled by the BMW Information and Education Committee. The mission of the Committee is to reach out to all people in the watershed and provide water quality information important to the health of Barr Lake and Milton Reservoir.

Mark your calendar for these upcoming events in the watershed

BMW Stakeholder meeting
February 24th

BMW Technical Committee meeting
February 26th (4th Thursday of every month)

BMW I/E Committee meeting
March 3rd (first Tuesday of every other month)

Barr Lake Raptor Run, April 11th

Barr Lake Spring Fishing Clinic,
May 2nd



Salt Use During the Winter

Winter time means icy roads, sidewalks, front porches, and office entryways. The go-to to keep us upright during the winter is the use of deicer or salt. Hundreds of thousands of pounds of salt material are applied to roads in the Barr/Milton watershed. Where does all this salt go?

Just like fertilizers and pet waste, salts on impervious surfaces become nonpoint sources of pollution and eventually wash into the storm drains that flow into the South Platte River. All this salt means more calcium and magnesium in the waterways (ever wonder where all that white build up comes from on the Barr Lake dam? See photo). Many aquatic organisms and animals that depend on the water are very sensitive to increased salinity.

Please do your part and use salt sparingly. Often when it snows in Colorado the warm sun is out hours later, naturally melting the ice away. Collectively we can all make a difference.



Guess this Location in the Watershed

(Answer: Rocky Mountain Wildlife Refuge. Just south of Barr Lake and west of DIA, this national wildlife refuge is home to 338 species of animals including bison that were introduced in 2007. Prior to becoming a Refuge, Plains Indians followed large herds of bison and lived off the land. Later, as settlers moved west to start a new life, they began growing crops and grazing cattle. Following the attack on Pearl Harbor, the U.S. Army transformed the area into a chemical weapons manufacturing facility, known as the Rocky Mountain Arsenal, to support World War II. As production declined at war's end, a portion of the idle facilities were leased to Shell Chemical Co. for the production of agricultural chemicals. The Arsenal was later used for Cold-War weapons production and demilitarization. The refuge is 15,000 acres in size.)