

BARR LAKE MILTON RESERVOIR

27-09-2022 | ANNUAL STAKEHOLDER MEETING | WATERSHED HIGHLIGHTS



CHATFIELD RESERVOIR

Starting in 2021, Chatfield began to hold additional water. Close to 10,000 acre-feet of water. In 08/2022, Chatfield released 300 cfs. These higher flows in the summer might be the new norm and change how the river looks.

SHALLOWNESS

Water depth plays a major role in the overall water quality of a lake or reservoir. Thermal stratification creates isolated bottom waters where oxygen can be depleted. Fully mixing water columns can provide a larger volume of water to grow algae. Barr is slightly deeper than Milton and both can fully mix when 7 or 8 meters deep.

CARP REMOVAL

Since 2014, just over 8,800 carp totally 73,000 pounds have been removed from Barr Lake. BMW hosted a carp tournament at Barr Lake in 2022. 79 carp were removed. The average size carp in Barr Lake is 8.3 pounds. Tiger muskie were stocked in August of 2022. These may help control the growth of gizzard shad.

BURLINGTON INPUTS

BMW Association has been collecting weekly 24-hour composit samples on the S. Platte River just upstream of the Burlington Head Gate since 2019. Stormwater samples are also collected. For the first 8 months of 2022, 31,600 kg of phosphorus have gone down the ditch.

TERTIARY TREATMENT

Metro Water Recovery began phosphorus treatment in 2021. TP concentrations went from 3.0 mg/L down to 0.35 ug/L. South Platte Renew will begin alum treatment to reduce their phosphorus concentrations starting in the fall of 2022. Centennial Water and Sanitation District upgraded their phosphorus treatment in 2018. Brighton's WWTP will be closing down in a few years sending their flows to the NTP site, which started with tertiary treatment in 2016.

2022 WATERSHED UPDATES

The Barr/Milton watershed (BMW) is the most populated watershed in Colorado with over 2.5 million residents which is half the population of Colorado.

Along with the urban landscape, BMW has 400 square miles of agricultural land (49% of the watershed). To meet water quality standards, targets, and goals, all sources of phosphorus need to be addressed.

Activities to reduce phosphorus in the watershed this year include implementation of a newly issued MS4 stormwater permit for City and County of Denver, continued carp removal efforts including a carp fishing tournament, phosphorus free lawn fertilizer efforts with the Water 22' educational campaign, and plant upgrades at various wastewater treatment plants.

The watershed tour was at Milton Reservoir this year. This is the fifth year for the Heritage Sporting Club at Milton. FRICO is dredging near the Platte Valley Canal inlet to Milton to remove sediment build-up.

Barr Lake can now hold an additional eight inches of water starting this year. Boardwalks were relocated around the park. Barr's water elevation has been below average for most of the year due to dry weather conditions.

BMW intern, Erica Klein, conducted a second year of boat surveys at Barr Lake to see how users feel about water quality and overall experience.

2022 has been another year of hot, dry weather with a handful of isolated storms. April was dry, July was hot, and August has a bit of everything.

BY THE NUMBERS

46

Average 90+ degree days at DIA (64 as 9/13/22)

24

Miles - length of Platte Valley Canal to Milton

19

Miles - length of Burlington Ditch to Barr Lake

25,717

Acre-feet of water to Milton (11/1/21 - 8/15/22)

36

parts per billion, CDPHE's proposed updated TP standard for warm lakes

34,986

Acre-feet of water to Barr (11/1/21 - 8/15/22)

20

Miles - length of Beebe Draw from Barr to Milton

P-Free Lawn Fertilizer Campaign

BMW Association launched the Phosphorus Free Lawn Fertilizer Initiative and coalition building effort in 2021. There are 26 coalition members. The Initiative has teamed up with Colorado Waters' *Live Like You Love It* effort to launch a dedicated website to how to protect our waters in Colorado. The site is lovecoloradowater.org/care. Radio ads, landscaping conferences, trade shows, and public speaking opportunities have all helped to get the word out.

Phosphorus-Free Lawn Fertilizer Initiative Supported by:



www.lovecoloradowater.org/care

Check out the new fertilizer campaign – Phosphorus Free Lawn Fertilizers. Every source of P has to be addressed.



Water 22' (water22.org)

- Know your water
- Lose the leaks
- Toss trash, don't flush it
- Go native
- Skip the crewcut
- Use your voice
- Don't P on your lawn

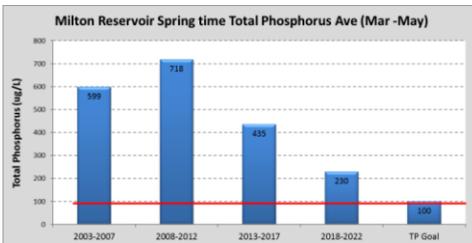
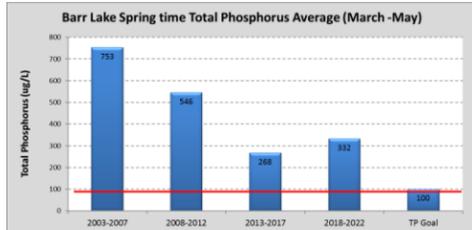
Go to water22.org to get more details on the 22 different ways to help protect and conserve Colorado's water. This is a year-long campaign that BMW is sponsoring.

NEW NUTRIENT STANDARDS

(CDPHE updating TP, TN, and Chl-a)

Since 1998, EPA has been working with states to develop nutrient standards.

CDPHE approved TP, TN, and Chl-a for streams and lakes in 2012. Updated numbers are being discussed in 2022 with Chl-a being applied this year and TP and TN in 2027 statewide.



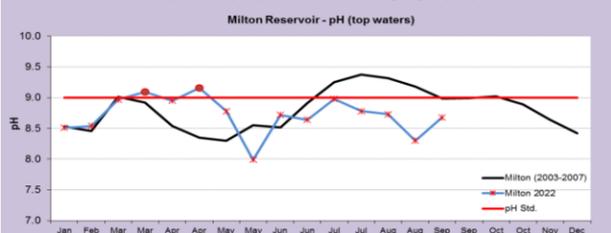
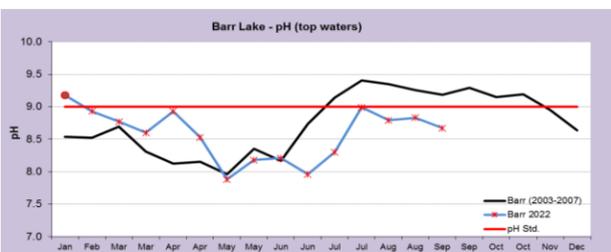
CDPHE	TP (mg/L)	TN (mg/L)	Chl-a (ug/L)
pH/DO TMDL	<0.100	-	25.0
Nut. Stds. (2012)	0.083	0.910	20.0
Nut. Stds. (2022)	0.036	0.600	20.0

Milligram/Liter (mg/L) = parts per million
Microgram/Liter (ug/L) = parts per billion

ppb examples:
 1 second in 32 years
 1 foot to a trip to the moon
 1 cent in a million dollars
 1 blade of grass at Mile High Stadium
 1 drop of water in an Olympic size pool

PH

To meet the pH standard in Colorado, the 85th percentile value (15% are larger and 85% are smaller after ranking them large to small) needs to be between 6.5 and 9.0. With 20 samples per year, only three can be outside this range. Barr has gone over



9.0 once and Milton twice so far in 2022. pH has been higher in the winter and lower in the summer compared to 2003-07.

DO

Dissolved oxygen in the top waters (average all values from 0.5 meters to 2.0 meters) has to remain above 5.0 mg/L at all times to meet the standard. Milton did not meet

the DO standard this year. DO has been higher than average during the winter caused by diatoms.

