

## River Watch Items for the June 2025 UWP Board Meeting

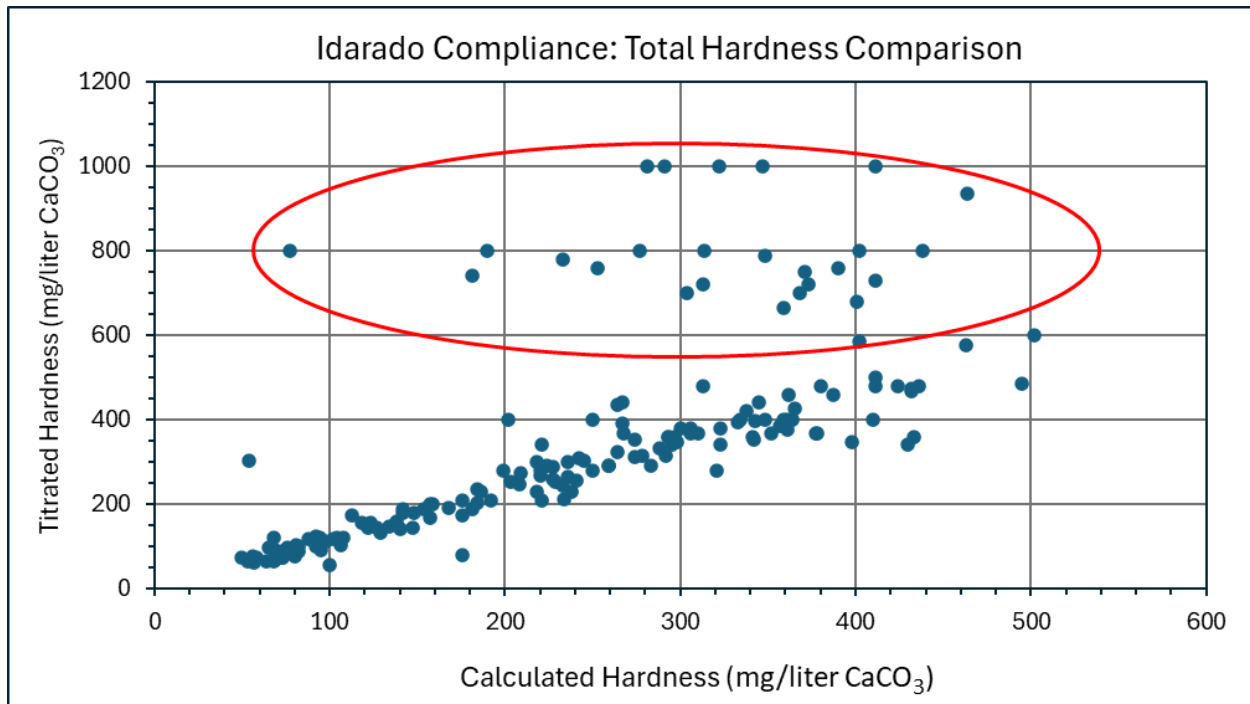
- River Watch items of interest:
  - We're hoping to finish our high flow nutrient samples between June 6<sup>th</sup> and June 21<sup>st</sup>. There are still 13 sites to sample. It looks like the early part of that period will be the most favorable for high flow. The new site on the East Fork of Dallas Creek was sampled on June 1<sup>st</sup> to beat the USFS road closure on June 2<sup>nd</sup>.
  - It's very likely that streamflow measurements will not be possible while taking high flow samples. The river will likely be above 500 cfs and Cow Creek has been above 200 cfs since June 1st. It looks like we'll be able to sample the four River Watch sites in the Sneffels/Governor Basin/Imogene drainages this month. The county Road and Bridge web site indicates that Camp Bird Road should be open soon.
  - I encountered some interesting water hardness data at sites on Red Mtn Creek. At the Idarado Compliance site, the titrated hardness in units of CaCO<sub>3</sub> was frequently much higher than the value computed from concentrations of calcium and magnesium (which determine hardness). Titrated values as high as 1000 µg/liter are in the data set while computed values rarely exceed 400 µg/liter. River Watch is pondering the issue and they suspect very high iron, or other metal, concentrations might be influencing the titrations. They are sending us a different color indicator that binds with iron to use at our new Red Mtn Creek site below Idarado to see if we get different results.
- Snowpack, Precipitation and Streamflow:
  - Table 1 indicates that the average SWE total in the Gunnison Basin decreased to only 0.1 inch on June 4<sup>th</sup>, with the percentage of the median SWE dropping to 3%. In the Uncompahgre watershed, the Idarado SNOTEL SWE was gone by May 3<sup>rd</sup>. The Red Mtn Pass SNOTEL lost 16 inches of SWE between May 5<sup>th</sup> and June 5<sup>th</sup> and ended with 9% of the median SWE.
  - At the USGS stream gauge near Ridgway there was evidence of snowmelt runoff between the 10<sup>th</sup> and 16<sup>th</sup> of May, and then again after the 20<sup>th</sup> with a steady increase in discharge. By May 29<sup>th</sup> discharge at Ridgway had increased to the median value, and the rain in early June increased discharge to a peak 1020 cfs on June 3<sup>rd</sup>. On June 5<sup>th</sup> discharge was 536 cfs, very close to the median for that date.
  - On Dallas Creek the USGS gauge recorded discharge below 4 cfs between April 23<sup>rd</sup> and June 2<sup>nd</sup>. After the rain of June 2<sup>nd</sup> flow increased to 30-40 cfs and was at 44.4 cfs on June 5<sup>th</sup> when the median flow is about 18 cfs.
  - Streamflow on Cow Creek was below average from April 21<sup>st</sup> through the end of May and has been above average since then. The early June rain produced a peak of 820 cfs on June 3<sup>rd</sup>. On June 5<sup>th</sup> flow was 250 cfs, very close to the average for that date.

*Table 1. SWE totals and percentages of medians for the Gunnison Basin, and Idarado and Red Mtn SNOTEL sites.*

Date	Gunnison SWE 15 site avg (in)	Gunnison % of Median	Idarado SWE (in)	Idarado % of Median	Red Mtn SWE (in)	Red Mtn % of Median
11/09/24	2.8	215	1.9	238	5.5	220
12/11/24	5.2	123	3.9	108	8.1	125
01/09/25	7.1	101	5.8	104	10.8	104
02/05/25	8.0	83	7.5	94	12.8	91
03/07/25	11.6	89	11.0	100	18.0	101
04/05/25	13.1	74	13.0	94	21.3	91
05/05/25	4.3	38	0.0	0	16.3	71
06/04/25	0.1	3	0.0	0	0.3	9

- Total Hardness comparison at Idarado Compliance site 3580

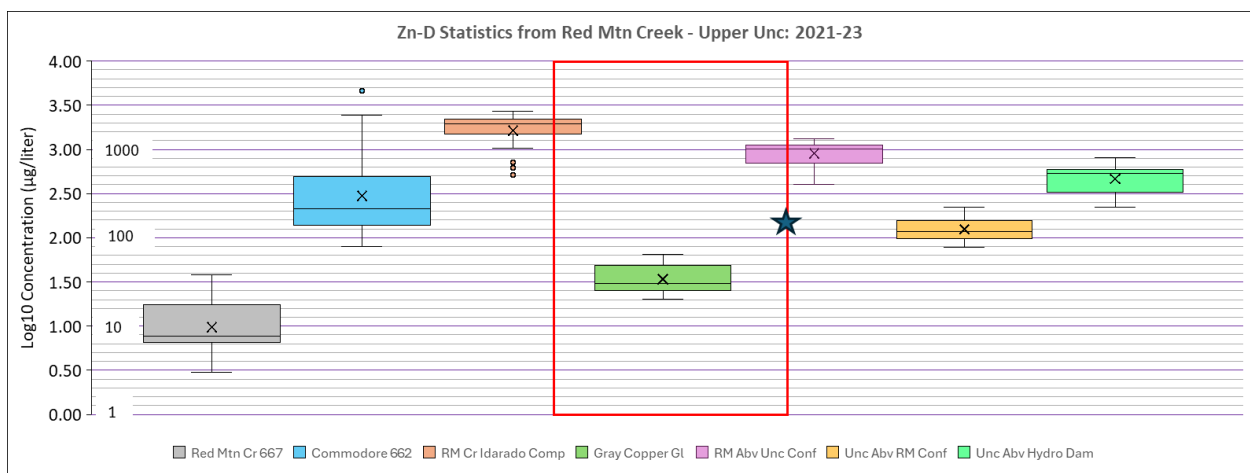
The figure shows total hardness determined by titration (y-axis) and by calculation from the concentrations of total calcium and total magnesium (x-axis). When the values within the red oval are excluded, there is a good correlation between the two parameters. River Watch staff are trying to determine what causes the titrations to produce values greater than about 600.



- Dissolved Zinc data from Upper Red Mtn Creek and the Uncompahgre River above the Hydro Dam

The figure below shows box plots of River Watch data for seven sites, from Red Mtn Cr (gray) near Red Mtn Pass (far left) down to the site on the Uncompahgre River above the Hydro Dam (far right). The proposed restoration project on Red Mtn Creek would be within the red box, below the Idarado Compliance site (orange) and above the RM Abv Unc Comp site (purple). (*Locations are shown on the map on page 3.*) The Gray Copper Gulch (green) stream enters Red Mtn Creek between the two sites. The new Red Mtn Creek site at Crystal Reservoir (blue star) will be at the downstream end of the project area.

From the historical data used in the figure, dissolved zinc concentrations are relatively low at the highest point on the creek and naturally peak at Idarado Compliance where the median value is about 2000  $\mu\text{g/liter}$ . At the RM Abv Unc Conf site below the project area the median zinc concentration drops to about 1000  $\mu\text{g/liter}$ , possibly due in part to dilution by Gray Copper Gulch which has a median concentration of about 29  $\mu\text{g/liter}$ . Data collection at the new RM Creek began in May 2025.



Map showing the locations of the River Watch sites on the previous page. Red Mtn Creek is shown by the purple line. The short red line shows the stream that flows adjacent to Crystal Reservoir. The proposed restoration project would take place between the two yellow arrows.

