River Watch Items for the May 2025 WRWG Meeting

- River Watch items of interest:
  - May River Watch sampling is taking place between May 4th and May 9th. Sampling at the Dallas Creek and CR24 sites was completed on the 4th and included a third streamflow measurement on Dallas Creek. Streamflow at the Dallas River Watch site has ranged from 13 cfs on 4/11 to 6-7 cfs on 4/23 and 5/4. The decrease in flow between the RW site and the USGS gauge (~3.2 miles) was estimated to be ~4 cfs on 4/11, ~3 cfs on 4/23, and ~7 cfs on 5/4. On May 4th the 7 cfs change was essentially all the flow observed at the River Watch site.
  - We will try to sample at the two new River Watch sites this month. The Red Mountain Creek site is free of snow and will be sampled when the weather cooperates. Sampling at the East Fork of Dallas Creek below the Blue Lakes trailhead will be hampered by the closure of the USFS road from June 2nd through the end of July. We can potentially get samples later this month and on June 1st, before resuming regular sampling in August.

- Snowpack, Precipitation and Streamflow:
  - Table 1 indicates that SWE total in the Gunnison Basin dropped by 8.8 inches between April 5th and May 5th, and the percentage of the median fell to 38%. In the Uncompahgre watershed, the Idarado SNOTEL at 9,780 feet showed a complete loss of snow by May 3rd. This was about two weeks earlier than the median date for complete snow loss. The Red Mtn Pass SNOTEL lost 5.0 inches of SWE between April and May and ended with 16.3 inches and 71% of its median SWE on May 5th. The Red Mtn site had a SWE peak of 21.3 inches on April 9th, about 2.2 inches less than the median peak which occurs on April 25th.
  - As of May 5th, the USGS stream gauge near Ridgway showed evidence of two snowmelt runoff periods, one between April 11th and 15th with several discharge peaks > 200 cfs, and another centered on April 27th where a peak of 199 cfs was recorded. On the morning of May 5th, the Ridgway gauge showed a discharge of 148 cfs when the median for the date is 185 cfs.
  - Flow on the Uncompahgre River below Ridgway Reservoir indicated that reservoir releases were significantly increased in April and have ranged between 300 and 400 cfs since April 27th; currently at 350 cfs.
  - Since April 19th Ridgway Reservoir storage has been steadily decreasing. On May 5th storage was 66,480 acre-feet, down from its peak of 72,590 on April 3rd. Current storage is 8,650 acre-feet greater than the median storage for early May.

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

- Dallas Creek USGS Data

There are three periods of USGS streamflow data for Dallas Creek, but I have no information related to any changes in gauge type or location. The current gauge location is 1.25 stream miles above the confluence of Dallas Creek with the Uncompahgre River. Most irrigation diversions, and other diversions to Dallas Creek, take place above the USGS gauge, so changes in discharge over the period of record reflect seasonal variation in annual precipitation as well as changes in water diversions.

- 1922-1927: Average Annual Discharge = 38,272 Acre-Feet
- 1956-1970: Average Annual Discharge = 23,563 Acre-Feet
- 1980-2023: Average Annual Discharge = 26,032 Acre-Feet

Figure 1 shows the annual Dallas Creek discharge totals for the 1980 to 2023 period. The trend line shows a decline is annual discharge from 1980 to about 2005 followed by more uniform discharge through about 2017. Finally, 2018 and 2020 had the two lowest discharge totals of the 44 year period. Low flow averages (< 10 cfs) are obvious in the monthly average streamflow plots for April and May in Figures 2 and 3. Although April low flow episodes have mostly occurred in the past 12 years, low flow in May has been more frequent with 12 years in in the past 44 having monthly averages less than 10 cfs. Three years (1981, 2002, and 2018) had average May streamflow of less than one cfs.

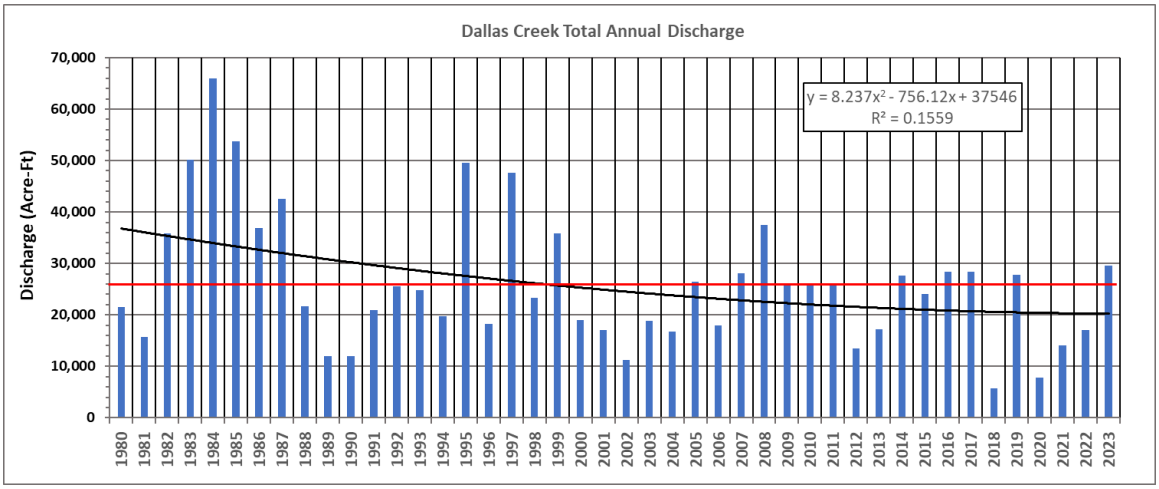

Figure 1. Total annual discharge from the USGS stream gauge on Dallas Creek. Red line is the overall average discharge and black line is a best fit polynomial trend line.

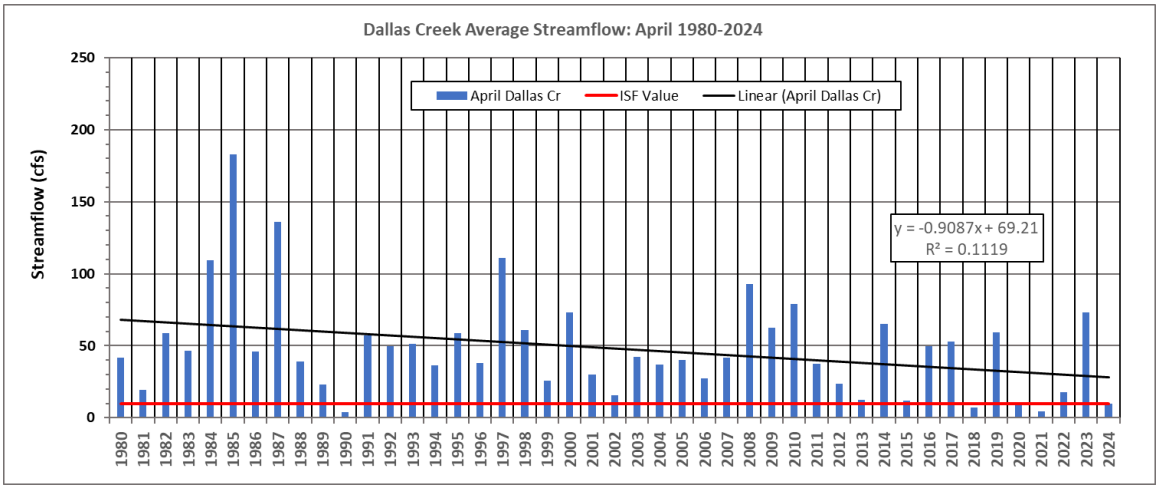

Figure 2. Average April discharge at the Dallas Creek USGS gauge. Black line is a linear trend line and red line is the 10 cfs Instream Flow right owned by the Colorado Water Conservation Board.

It will be interesting to match the discharge records with annual snowpack totals. I suspect that those years showing good discharge totals in April and May had above average snowpack totals, as well as good low elevation snowpacks. This year, which has again had low flow on Dallas Creek in April and early May, has had an early melt and runoff of snow below 9,000+ feet. Diversions appear to be taking nearly all of the water in the creek which is yet to be enhanced by melt from the higher elevation snowpack.

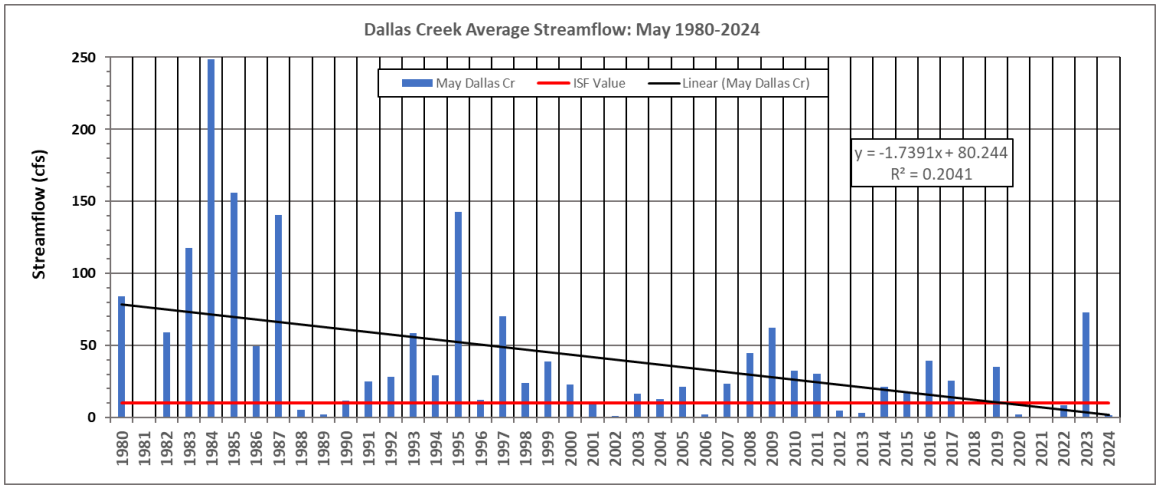

Figure 2. Average May discharge at the Dallas Creek USGS gauge. Black line is a linear trend line and red line is the 10 cfs Instream Flow right owned by the Colorado Water Conservation Board.