

River Watch Items for December 2021 UWP Board Meeting

- In December River Watch sampling included only our original six sites. The four higher altitude TMDL sites and Blue Lake have been eliminated from the schedule until next spring. An attempt was made to sample Imogene Creek on December 3rd, but the road was closed below Camp Bird. At our lower sites samples were collected and analyzed between the 2nd and 8th of December.
- Streamflow from late November to early December is summarized as follows:
 - At the USGS gauge near Ouray daily flow was consistent, but with a large diurnal range between 10 and 40 cfs. The historical median flow was about 33 cfs.
 - At the USGS gauge near Ridgway there was a much smaller daily range and steady flow between 45 and 48 cfs. The historical median flow was about 56 cfs.
 - At the USGS gauge below Ridgway Reservoir there was a constant release of 44 cfs, somewhat higher than the median of 53 cfs. With inflow to the reservoir exceeding outflow, storage increased steadily from 63,350 AF to 63,620 AF. The median in early December is 63,280 AF.
 - Over the period Dallas Creek flow decreased slightly ending at 15-20 cfs; median was 22 cfs.
 - Cow Creek flow decreased from 20 to 12 cfs. The long-term average flow at the end of the period was 16 cfs.
- With a lack of significant snowfall in November snowpack in the Gunnison Basin decreased from 109% of the 30-year median in early November to 51% in early December. The Red Mtn Pass SNOTEL dropped to 73% of the long-term median and Idarado dropped to 61%.
- I received some preliminary E. Coli data (part of the USFS Visitor Impact Study at Blue Lake) from samples collected in June, July, August, and September 2021. For each monthly visit two samples (A and B) were collected at three sites; Site 1 at the mouth of Lower Blue Lake, Site 2 at the River Watch sampling site about 400 ft downstream on East Dallas Creek, and Site 3 several miles downstream below the last campground near the trailhead. Samples were analyzed at the Project 7 lab in Montrose for Total Coliform counts, E. Coli counts and turbidity. I found several

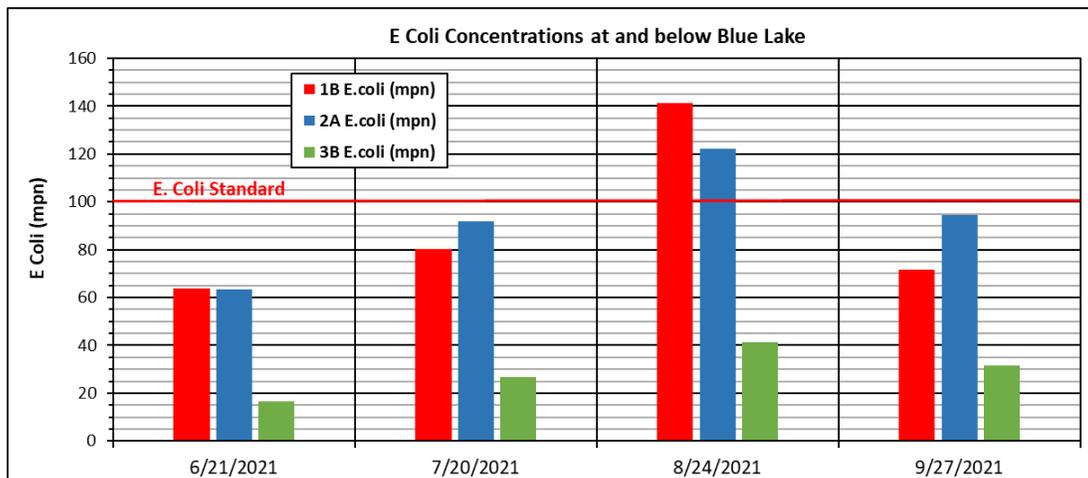


Figure 1. E. Coli counts at the three NFS sampling sites near Blue Lake. Site locations are noted in the text. Letters A and B refer to the two duplicate samples collected at each site. The solid red line is the E. Coli standard for water designated for recreational use.

inconsistencies in the data, namely that duplicate E. Coli samples, particularly at Site 1, differed by as much as a factor of 10, E. Coli counts were at times larger than Total Coliform counts, and some duplicate turbidity values were also quite different.

Figure 1 shows an example of the E. Coli data, *but must be considered preliminary until the discrepancies noted above can be resolved*. For each date only one of the two samples at each site

is shown; chosen based on the consistency in the count pattern over the four months. The two sites near the lake had counts considerably larger than the downstream site, and in August both exceeded the E. Coli standard for water designated for recreational use. The lower counts at the lowest site might reflect the larger downstream flow and possibly the lower density of tent camping (plus availability of a bathroom near the trailhead). The count trend across the four months was similar at all three sites. The lowest counts were in June during highest streamflow. Counts increased steadily from June to August when peaks were observed at all three sites. Finally, counts at all three sites dropped markedly in September. The trends in E. Coli counts over the four months are likely due to a number of factors including streamflow, amount of campground use (and waste disposal), and water temperature. The August peak could be due to both relatively low streamflow and greatest campground use.

- Issues to be considered for River Watch sampling in 2022.
 - Possibly add a Sneffels Creek sampling site (monitoring metals if/when OSMI receives a temporary modification to Regulation 35)
 - Find a way to add streamflow measurements to River Watch sampling, particularly at TMDL sites