



MEMORANDUM

To: Bill Schenk, Trevor Watson

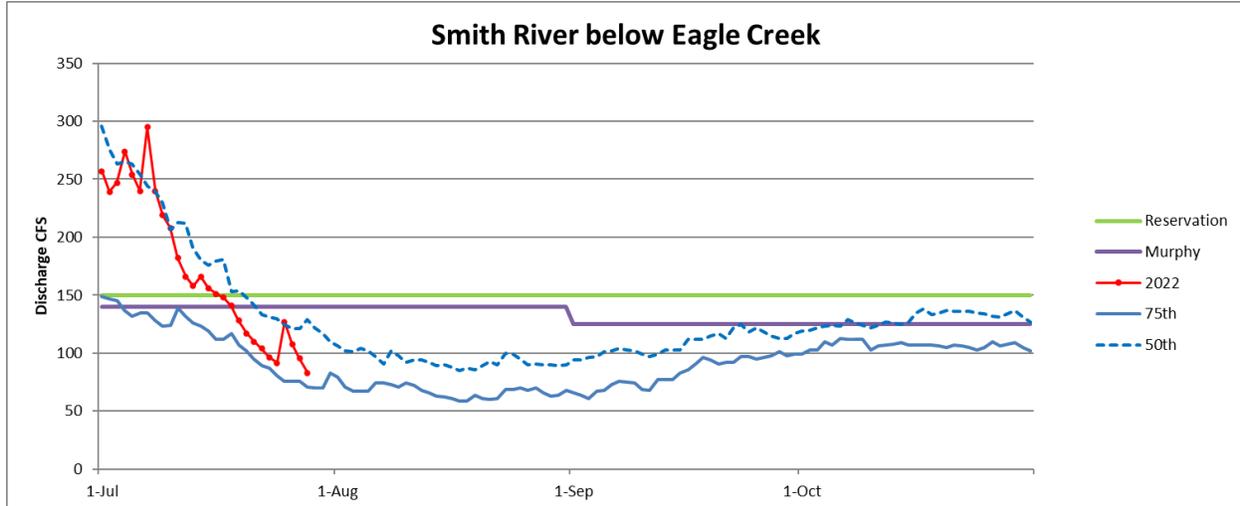
C: Gary Bertellotti, Eileen Ryce, Jason Rhoten, Amy Groen, Stephen Begley

From: Andy Brummond, FWP Water Program
Jason Mullen, Area Fisheries Management Biologist

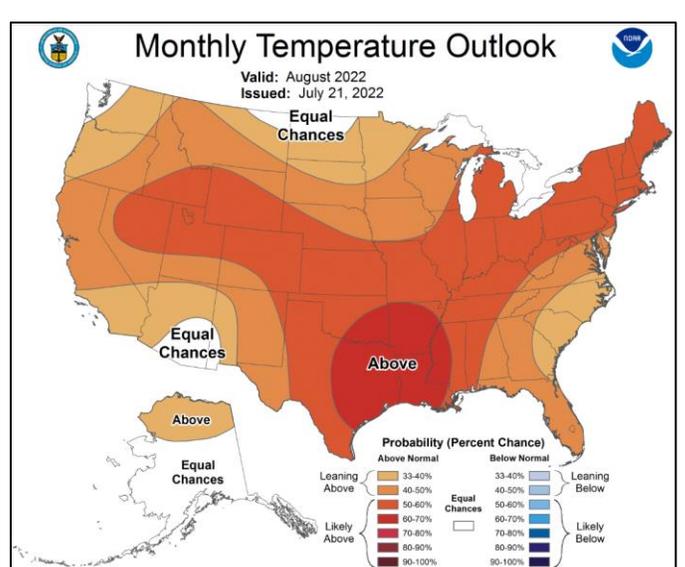
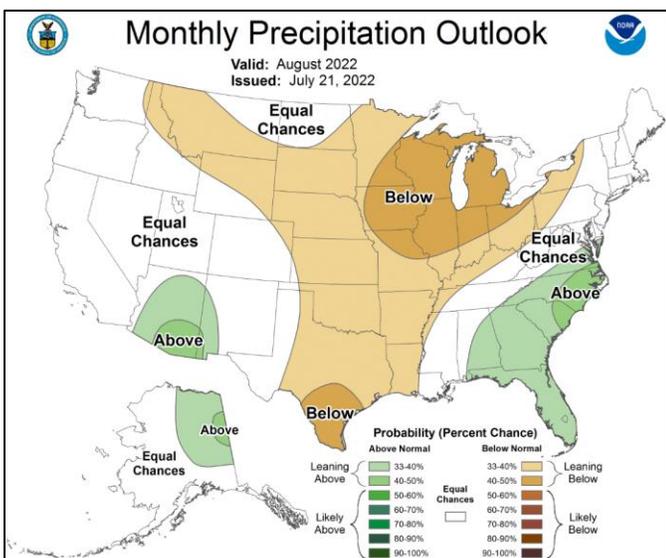
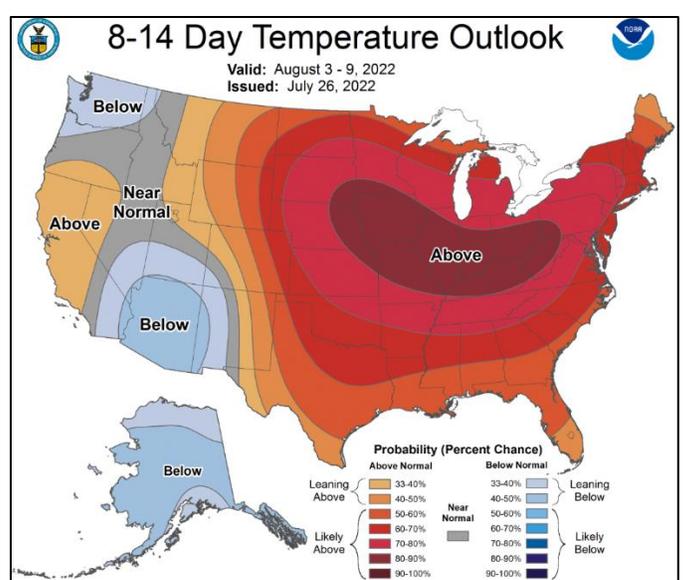
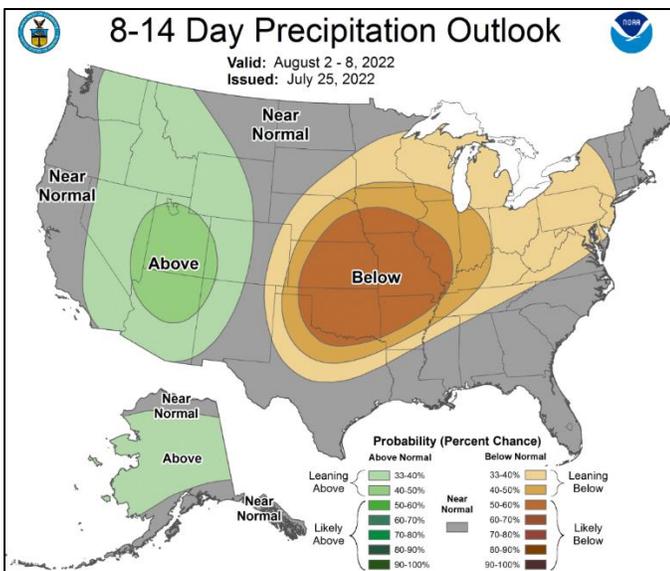
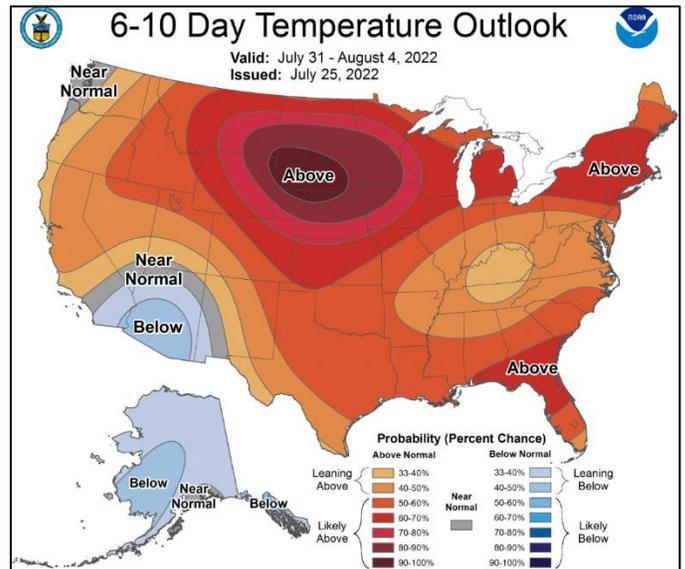
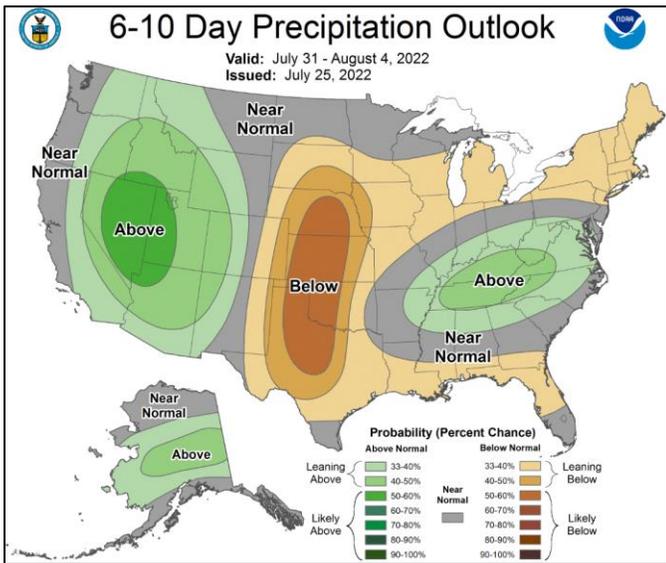
Date: July 28, 2022

Subject: Smith River – Call on Junior Water Rights

Fisheries and Water Program staff have monitored flow and water temperature in the Smith River and consulted on river conditions and potential merits of placing call on junior water uses. We jointly recommend that FWP make call on the Smith River. Stream flow in the Smith River has dropped well below FWP's instream water rights. The hydrograph below shows that flow is near the 75th percentile exceedance flow (level met or exceeded 3 out of 4 years) and the median for the USGS gage below Eagle Creek near Camp Baker (24-year period of record).



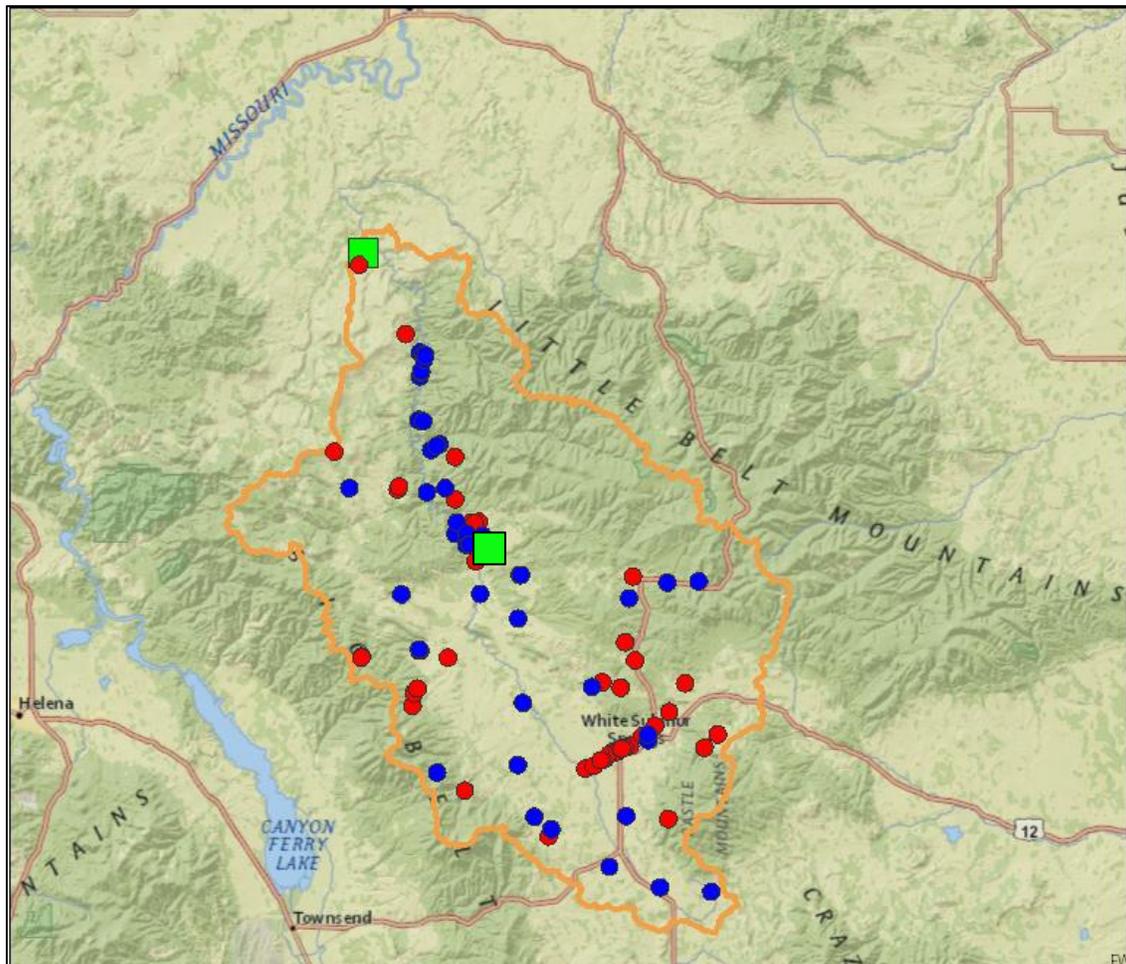
The 6-10 and 8-14-day precipitation outlooks lean towards above normal precipitation while the August monthly outlook leans towards below normal precipitation overall for the month (graphics attached). However, normal precipitation for this time of year is relatively light overall so increased chances of precipitation do not necessarily translate to improved stream flow. Temperatures for all three reporting periods point toward above normal temperatures. Given expected weather conditions and high demand for irrigation water, streamflow would not be expected to again meet FWP's instream flow rights into the fall without significant precipitation events.



DNRC's water rights database includes 81 junior water rights in the Smith River basin. Each water right was reviewed to determine if cessation of water use would likely result in additional flow reaching the Smith River. The following table lists the water rights by general purpose category.

Purpose	Call	No Call	Total Called Flow Rate
Fish, Wildlife, Recreation Ponds	5	0	1.92 cfs
Irrigation	28	17	88.62 cfs
Mining	2	8	2.77 cfs
Stock	0	18	-
Domestic	0	3	-
Total	35	46	93.31 cfs

The call on the Smith River includes two different letters, one for those rights junior only to FWP's Murphy Right and the other for those rights junior to FWP's water reservation. The following map shows the location of all the junior water rights. Those represented by blue dots would be called while those represented by red dots would not. The green squares are the location of the USGS gages with the gage below Eagle Creek on which the call would be made shown near the center of the map.



The Smith River supports a very popular rainbow trout and brown trout fishery and represents a unique recreational floating and angling opportunity downstream of Camp Baker through Smith River State Park. The fishery supported over 36,000 angler days in 2019. Dewatering and associated warm water temperatures negatively impact the fishery with high-water temperatures and fragmented habitat increasing stress and mortality. During high temperature periods, increased streamflow can mitigate the effects of high temperature and improve fish survival by moderating water temperature and providing more deep pool habitat where fish can avoid higher water temperatures. As flows drop below 140 cfs habitat is lost as demonstrated by wetted perimeter studies. Habitat loss becomes increasingly problematic as flows approach or drop below the lower inflection point of 80 cfs.

The chart below shows daily water temperatures at USGS gage 06077200 below Eagle Creek near Fort Logan exceeding 73°F beginning July 13th – 15th. Water temperatures fluctuated around 73°F before receding some following a small rain event and cooler weather. As water levels dropped, temperatures increased to a maximum of 74.7°F on July 26th. With higher temperatures forecasted, maximum daily water temperatures are expected to exceed 73°F resulting in continued stressful conditions for the trout population.

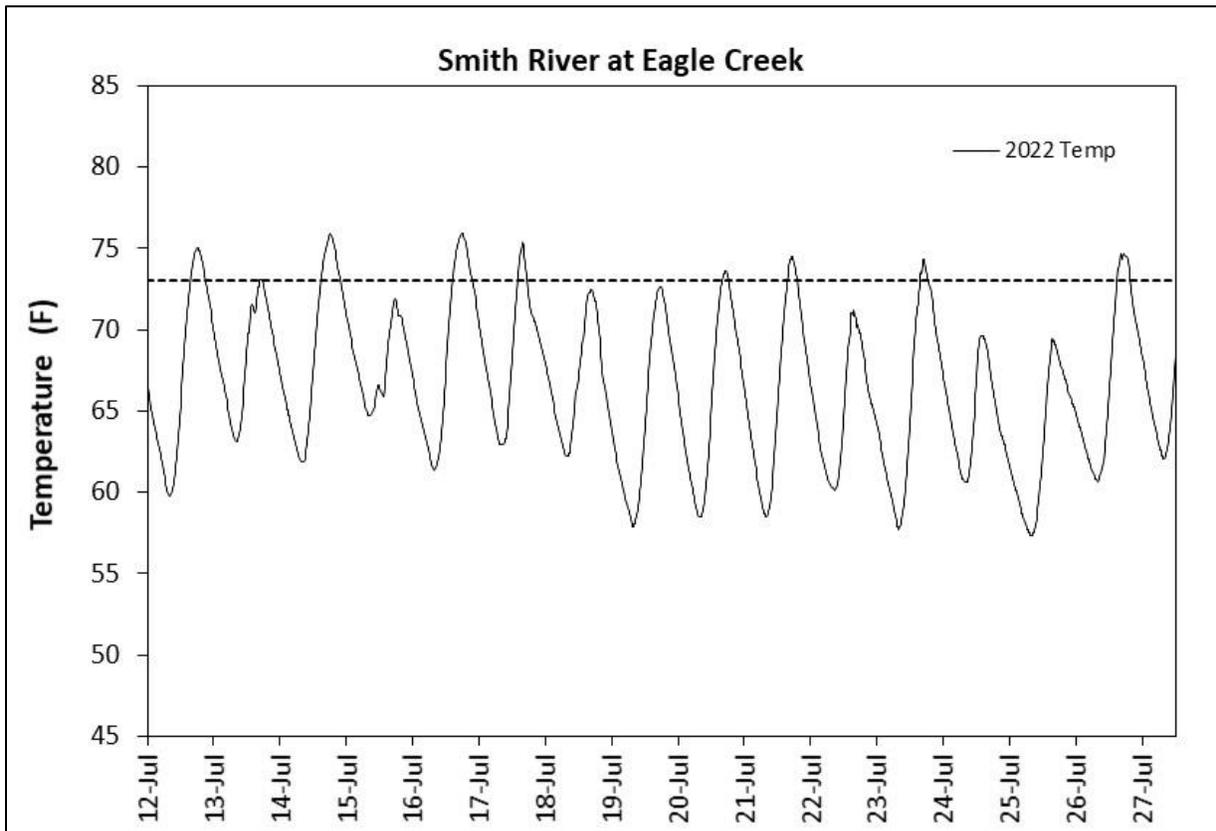


Figure 1. Water temperature at USGS gage 06077200 below Eagle Creek near Fort Logan from July 12th to July 27th.