NWS FORM E-5
U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE, **HYDROLOGIC SERVICE AREA: SAN JOAQUIN VALLEY - HANFORD, CA**
MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS FOR **AUGUST 2023**

TO: Hydrometeorological Information Center, W/OH12x1
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When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts and hydrologic products issued (WSOM E-41).

☐ An **X** inside this box indicates no flooding occurred for the month within this hydrologic service area.

Overall, while much of August was near climatologically average for precipitation, Tropical Storm Hilary provided many locations with their highest record rainfall, particularly in the southern portion of our HSA. The month began with a low pressure disturbance bringing some afternoon and evening convection through the area, resulting in a few thunderstorms. The end of the first week ended with a high pressure persisting over the area and providing no precipitation. The second week of August, a trough tracked eastward into the Pacific Northwest and, combined with residual moisture from Tropical Storm Eugene, brought thunderstorms into the area on the 10th of August. A few flood advisories were issued.

However, by far the most prolific hydrological event of the month occurred August 19-21st. Hilary, a tropical disturbance off the Pacific Coast, strengthened into a hurricane and made landfall as a Category 1 Hurricane on the Baja Coast before weakening into a Tropical Storm and slamming into southern and central California, southern Nevada, and western Arizona. The majority of the heavy rainfall associated with Hilary fell on August 20th. Locations within our HSA that saw the largest impacts were Kern, Tulare, and southeastern Fresno counties, but all of our HSA saw rainfall and thunderstorms as Hilary moved through. Record rainfall was experienced throughout the Kern County mountains and desert, with Ridgecrest and surrounding similar locations experiencing between 4-5.5 inches of rain in 24 hours. Multiple flood and flash flood products were issued on August 20th, totalling 16 Flash Flood Warnings issued with multiple extensions issued as well. There were many road closures in the areas experiencing the most impacts, with multiple mudslides and flash flooding impacts observed. Multiple locations in Ridgecrest, CA, were under an evacuation order due to flooding concerns, while others, because of roadway flooding, were told to shelter in place. Additionally, Cache Creek near Sand Canyon, California, overflowed and also prompted evacuations. Multiple daily precipitation records were broken around our HSA on August 20th. Bakersfield recorded 1.08 inches of rain, when no rain had ever been recorded on this day previously. Fresno saw 0.12 inches of rain, when only a trace had been observed previously. Hanford saw 0.28 inches of rain, which broke the old record of trace. Due to the tropical nature of the storm providing moisture and warmth to the environment, thunderstorms preceded and followed the main precipitation of the event. Multiple Flood Advisories and Flash Flood warnings were issued on the 19th and the 21st as well, due to heavy rainfall rates associated with the thunderstorms. These heavy rainfall rates also led to rainfall records being set on these days as well. Hanford set a record on the 19th with 0.19 inches. Fresno, Madera, and Merced set rainfall records on the 21st, with 0.03 inches, trace, and 0.01 inches observed, respectively. This system was unprecedented, as a tropical storm had not impacted California for decades. No river flood products were issued during this event.

Hilary began moving out of the area on August 22nd, and had moved out of the area completely by August 24th. Seasonal conditions prevailed and no rainfall was observed for the remainder of the month.

Key Hydrologic/Flood Products Issued for August 2023

Flood Watches and Advisories

Thursday, August 10: 227 PM PDT, 335 PM PDT
Saturday, August 12: 446 PM PDT
Sunday, August 13: 243 PM PDT
Saturday, August 19: 231 PM PDT, 307 PM PDT
Sunday, August 20: 1152 AM PDT, 1208 PM PDT, 205 PM PDT, 225 PM PDT, 323 PM PDT, 529 PM PDT, 604 PM PDT, 731 PM PDT, 752 PM PDT, 801 PM PDT, 858 PM PDT, 917 PM PDT
Monday, August 21: 112 PM PDT, 233 PM PDT, 257 PM PDT, 539 PM PDT, 600 PM PDT, 612 PM PDT, 710 PM PDT

Flash Flood Warnings

Saturday, August 19: 116 PM PDT, 153 PM PDT, 251 PM PDT
Sunday, August 20: 1202 PM PDT, 1203 PM PDT, 216 PM PDT, 235 PM PDT, 321 PM PDT, 336 PM PDT, 402 PM PDT, 404 PM PDT, 500 PM PDT, 519 PM PDT, 526 PM PDT, 536 PM DPT, 559 PM PDT, 602 PM PDT, 650 PM PDT, 912 PM PDT
Monday, August 21: 327 PM PDT, 513 PM PDT

Flash Flood Emergencies

None.

Hydrologic Statements

None.

Flood Warnings

None.

Flood Advisories (Rivers and Creeks)

None.

Rain Totals at our 5 ASOS Stations for August

Merced – 0.05 inches
Madera – 0.05 inches
Fresno – 0.19 inches
Hanford – 0.48 inches
Bakersfield – 1.08 inches

Fig 1 – Percent of Average Precipitation for August 2023

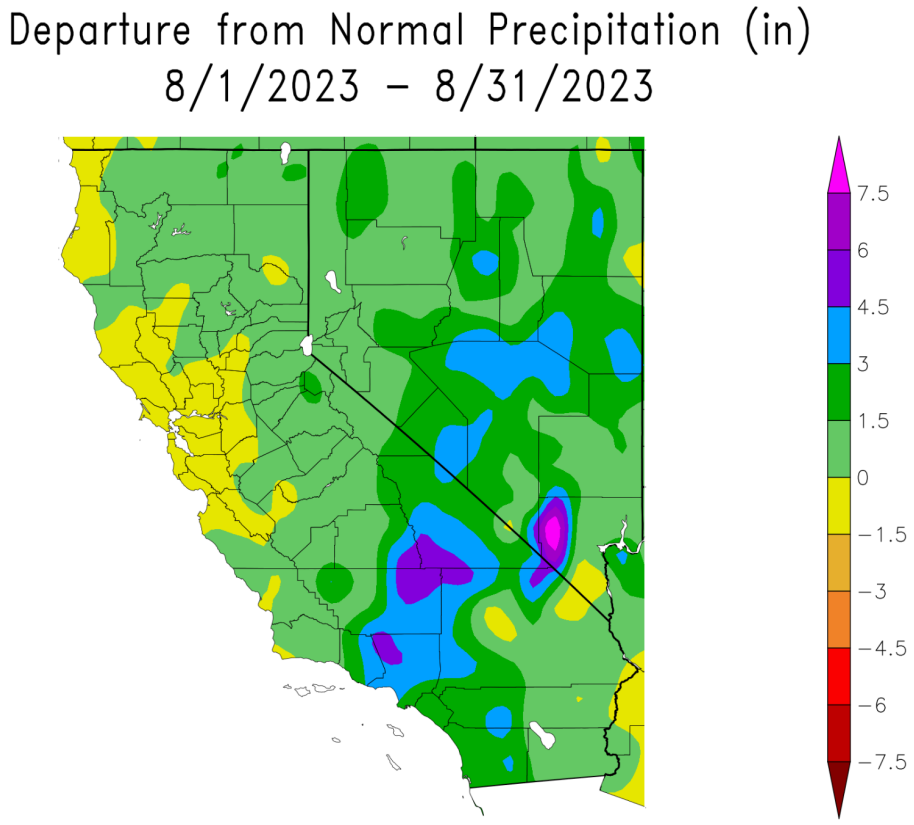


Fig 2 – Drought Status for the state of California released September 5, 2023

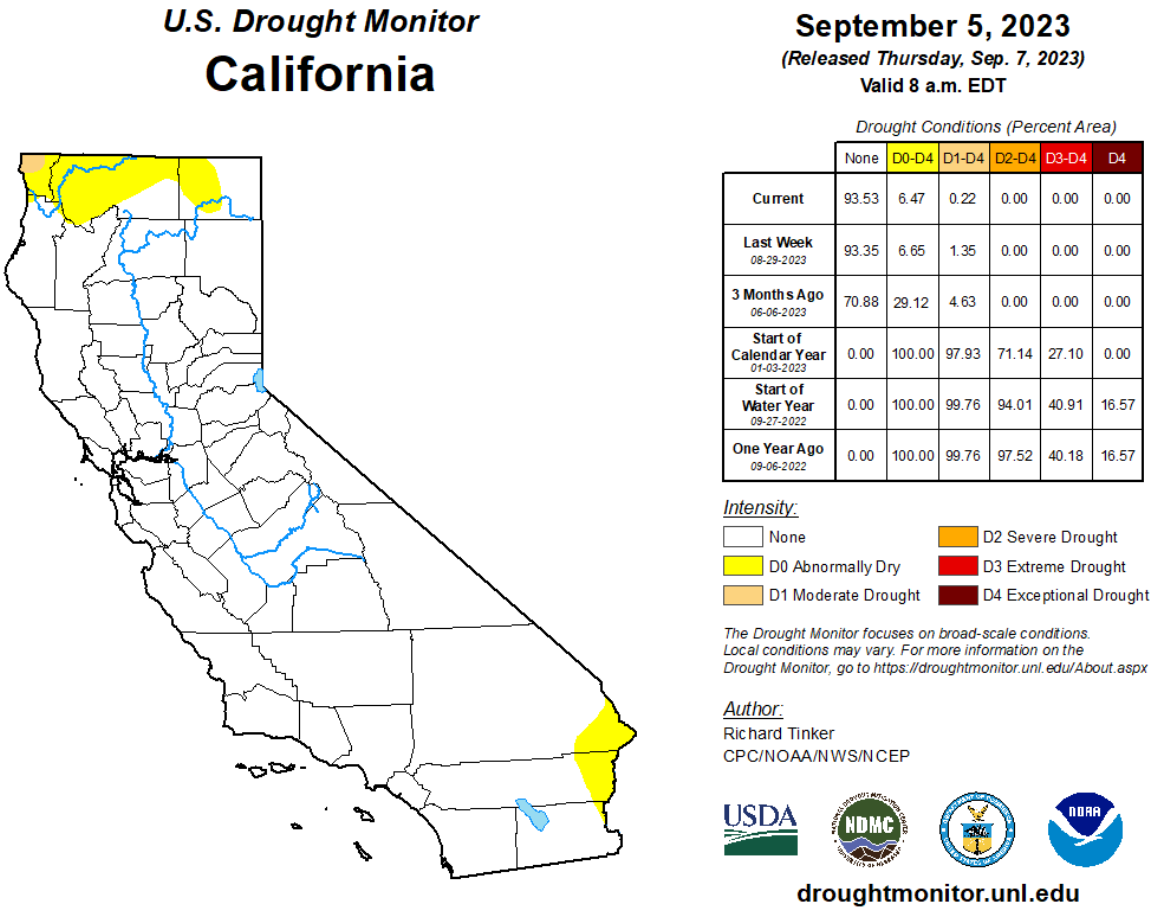
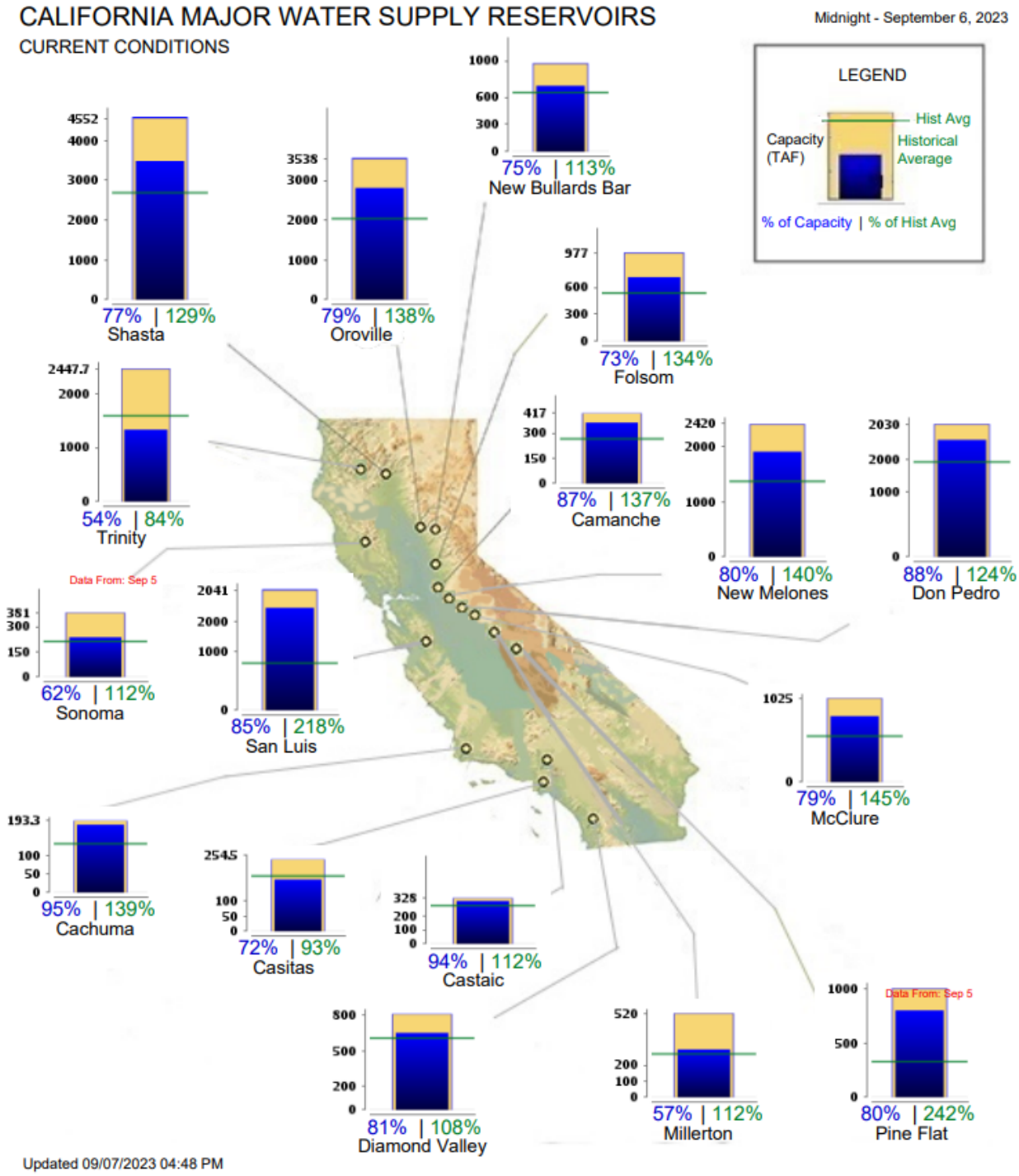


Fig 4 – Major Reservoir Levels on August 6th 2023



Precipitation Totals (72-hr) for August 19-21, Tropical Storm Hilary