

To: Planning Department, County of Siskiyou
806 South Main Street
Yreka, Ca 96097

Project: Kidder Creek Orchard Camp Zone Change (Z-14-01) and Use Permit (UP-11-15)

March 13, 2023

**RESPONSE TO 2/13/23 LETTER FROM CHARMA GILMORE REGARDING THE EVAPORATION WATER LOSS
STUDY BY CHRIS CUMMINGS**

Dear Planning Commission and Planning Department staff,

In the Charma Gilmore letter dated 2/13/23 and preceding letter dated 1/17/23 Ms. Gilmore states that she has concerns regarding the average annual rain fall used in the report and the use of 1 cfs per second water flow throughout the summer months of June through September.

Specifically, she states: “the annual rainfall used was 43.5 inches and was based on average normal rainfall data from US Climate Data. The source of the data is rather vague, lacking the exact location or dates of data, and clearly does not represent the actual precipitation for the area.” She goes on to support the use of average annual precipitation from the Fort Jones USFS Ranger Station of 20.4 inches.

Response: Regardless of what appears to be a relatively short distance from Fort Jones to Greenview and somewhat further to Kidder Creek Camp the rainfall is significantly greater at Kidder Creek Camp. This is exhibited by local observation of the differences in depth of snow after snow fall events between the West side of the Scott Valley and the base of the mountains at Kidder Creek Camp. The change in the types of vegetation and trees also indicate significantly more rainfall. The use of the US Climate Data for Etna was the closest and most representative published data available. The two attached maps are provided to demonstrate the existence of significant rainfall changes in the geographical area of the Scott Valley. The California Rivers Assessment Historic Precipitation Data Map shows numbers distributed in and around the valley that vary widely with the number closest to the location of Kidder Creek Camp showing 45 inches.

Ms. Gilmore also states: “Mr. Cummings report for evaporation loss was based on a full 1 cubic foot per second (cfs) throughout the summer months of June through September. In actuality, the KCOC water right is scaled to the overall diversion rate of the ditch and is not static at 1cfs for the entire irrigation season.” And also: “Over the past five years and based on Barker Ditch’s reported water use, only 2 months had the necessary flow to be able to take the full 1 cfs, which is only 10% of the time (Table 2 & Table 3). When applying the lower flows and therefore reduced water rights, the estimated evaporation loss increases to 11% to 22% of the water rights for the months of June through September.”

Response: The evaporation study is dated January 16, 2017. It was done prior to the Barker Ditch water use data that Ms. Gilmore is referring to. The 1 cubic foot per second water ditch flow was based on the cooperative operation of the ditch estimated at the time of the report and prior to the drier years in 2020 – 2022. Bringing the calculation up to date with the Barker Ditch water use for the years 2018 through 2022,

and excluding the months showing zero (representing equipment malfunction) and using the Scott River Decree decreasing share scale the total water right volume for the summer months of June - September results in a total of 103 cubic feet. The corresponding evaporation not considering rainfall is 13% of the water right for those months. Note that as more Barker Ditch water use data is gathered it will likely lower the 13% water right evaporation due to the two significantly dryer years included in the 5 years of data.

Conclusions: 1) The Etna rainfall data of 43.5" is the most representative data available for the conditions and location of the pond. 2) Using only the last 5 years of Barker Ditch water use data and Scott River Decree water right volumes, estimated evaporation not considering rainfall is 13% of the water right. 3) If evaporation vs. rainfall were to be considered for 12 months of the year for average years based on the Etna rainfall data, the rainfall is expected to exceed the evaporation. 4) For consideration of potential continued drier climate where rainfall at the location of the pond results in an average between the Etna and Fort Jones rainfall data (32" of rainfall), the yearly water balance results in a net water loss of 10.5" for the year. 10.5" of net evaporation water loss for the year is equivalent to 2.9 days of 1 cubic foot of water flow.

Further calculations can be provided upon request.

Sincerely,



Chris Cummings
Civil Engineer

Attachments:

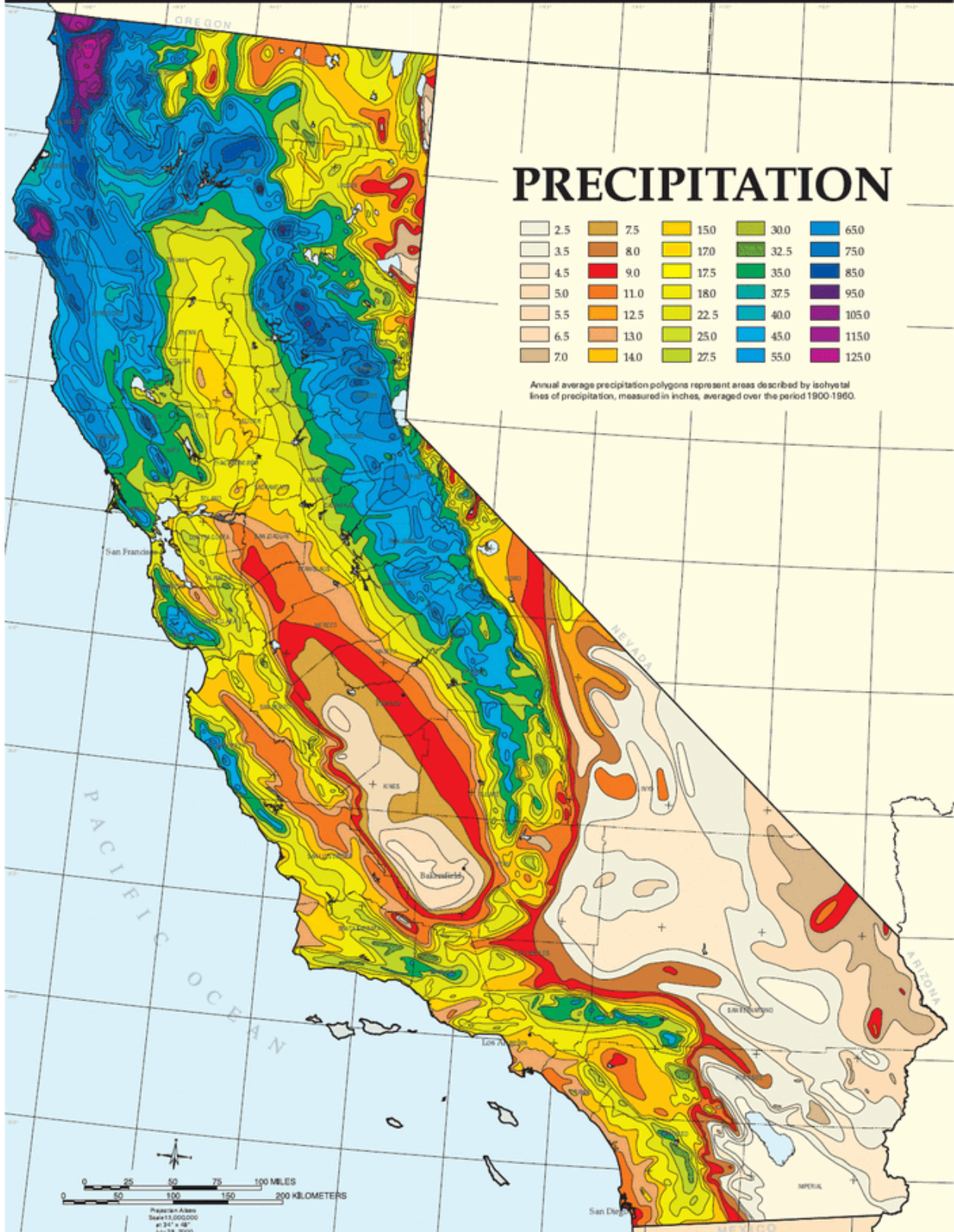
State of California Precipitation Map

California rivers Assessment Historic Precipitation Map (Scott)

PRECIPITATION

2.5	7.5	150	30.0	650
3.5	8.0	170	32.5	750
4.5	9.0	175	35.0	850
5.0	11.0	180	37.5	950
5.5	12.5	22.5	40.0	1050
6.5	13.0	25.0	45.0	1150
7.0	14.0	27.5	55.0	1250

Annual average precipitation polygons represent areas described by isohyetal lines of precipitation, measured in inches, averaged over the period 1900-1960.



California Rivers Assessment Historic Precipitation Data

Scott



Information Center for the Environment
University of California, Davis

Data Provided by:
Teale Data Center and
California Department of Forestry

