UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1655 Heindon Road
Arcata, California 95521-4573

Refer to NMFS No: AR#10012WCR2021AR00040

September 23, 2021

Matt Parker, Natural Resources Specialist
Siskiyou County Flood Control and Water Conservation District GSA
1312 Fairlane Drive
Yreka, California 96097

Re: NOAA's National Marine Fisheries Service comments on the Shasta Valley Groundwater Sustainability Plan -- draft GSP

Dear Mr. Parker:

NOAA's National Marine Fisheries Service (NMFS) is the federal agency responsible for managing, conserving, and protecting living marine resources in inland, coastal, and offshore waters of the United States. We derive our mandates from numerous statutes, including the Federal Endangered Species Act (ESA). The purpose of the ESA is to conserve threatened and endangered species and their ecosystems.

On August 11, 2021, the Siskiyou County Flood Control and Water Conservation District GSA - Shasta River (SR GSA) released their draft GSP of the Shasta Valley Goundwater Sustainability Plan (SV GSP). Waterways that overlie portions of the Shasta Valley Basin (*e.g.*, Shasta River and tributaries) support federally threatened Southern Oregon/Northern California Coasts coho salmon (*Oncorhynchus kisutch*), as well as Chinook salmon (*O. tshawytscha*) and steelhead (*O. mykiss*). This letter transmits our comments on the draft GSP.

We previously commented on draft Chapters 3 of the SV GSP . However, many of those comments do not appear to have been considered by the SV GSA, so we have reiterated them in this letter. In the future, we recommend the SR GSA compile a publicly available summary of comments received on the SV GSP, along with the GSA's response to each comment. NMFS-001

Comments

Page 16, Figure 1: The chosen monitoring wells are generally located too far from waterways to adequately analyze and monitor streamflow depletion. We recommend the SR GSA develop a plan for installing paired streamflow gauges and groundwater monitoring wells located in close proximity to each other. These monitoring points should be strategically located throughout the basin where potential streamflow depletion impacts are likely occurring. NMFS-002

Page 25, line 426: The draft GSP proposes monitoring groundwater contributions to the Shasta River during the "irrigation season", yet does not explain why monitoring is limited to this season only. Streamflow depletion does not usually occur instantaneously with the causative groundwater pumping, but can instead be delayed by days, weeks, months or years (Barlow and Leake 2012). For instance, groundwater pumping during the irrigation season could deplete streamflow when adult coho salmon are migrating in December, well after the irrigation season. To account for this temporal variability, streamflow depletion and augmentation monitoring should occur year-round. NMFS-003

Page 25, line 439: The proposed protocol for monitoring interconnected surface water dynamics pairs streamflow gauging data collected at 15 minute intervals with bi-monthly surface water diversion data. The low frequency with which surface water diversion data is collected may hinder the intended analysis; we suggest gathering data on surface water diversions more frequently to alleviate this concern. NMFS-004

Page 25, Table 4: As alluded to above, a grand total of four monitoring locations within the Shasta Valley is likely insufficient to characterize interconnected surface water dynamics. NMFS-005

Page 25, line 449: Waiting until the 2032 GSP update to begin monitoring the upper Little Shasta River watershed is not appropriate, given that a 2032 start date leaves just 10 years to address streamflow depletion impacts prior to the SGMA deadline for achieving sustainable groundwater management. The SR GSA should design a plan now to gather the required data so that significant progress can be achieved at the first 5-year check-in in 2027. NMFS-006

Page 35, line 663: The draft GSP lists potential impacts resulting from streamflow depletion as diminished agricultural surface water diversions, and inadequate flows to support riparian health and ecosystems. The list should also include impacts to ESA-listed salmonids and their habitat that depend on significant groundwater accretion to maintain habitat suitability. NMFS-007

Page 35, line 676: Growth in groundwater demand that changes the distribution of pumping and volume pumped cannot be characterized as "unforeseen", since the GSA is responsible for managing current and future groundwater extraction, and SGMA gives broad power to GSAs to accomplish that task. NMFS-008

Page 36, line 694: The draft chapter forgoes developing a groundwater/surface water analytical model as required under SGMA, and instead proposes using an analysis that uses the location, quantity and timing of interconnected surface water. The analysis focuses on the months of July through September based upon the lack of surface water input at that time of year. However, streamflow depletion impacts to beneficial uses of surface water, and specifically ESA-listed salmonids and their habitat, is not restricted to that time period. For instance, juvenile coho salmon migrate out of the Shasta River watershed during the spring months, well before July, and rearing juvenile coho salmon and steelhead inhabit the Shasta River throughout the year. Furthermore, the streamflow depletion response to groundwater pumping is not likely instantaneous, but can vary from days to months or years depending on factors such as aquifer composition, pumping depth, and other factors. NMFS recommends the SR GSA develop an NMFS-009

integrated surface water/groundwater analytical model considering the inherent complexity of Shasta River hydrogeology.

NMFS-009 contd.)

Page 36, line 704: For computing groundwater contributions during the irrigation season, riparian diversions are estimated at 20 cfs throughout the growing season. However, the following sentence states that riparian diverters do not continuously divert flow. The plans approach is to use a 2/3 of the 20 cfs estimate**.** How was this estimate determined?

NMFS-010

Page 37, top paragraph: Another uncertainty that requires acknowledgement is the sparse gauging network proposed for the "water balance" analysis. Using just two surface water gauges to characterize discharge within the groundwater basin is clearly inadequate for a number of reasons. For instance, both gauges are located on the mainstem Shasta River, with none located on tributary reaches. Also, the two existing gauges are separated by approximately 10 miles of river channel. Finally, the proposed addition of a future monitoring site (SPU on Figure 3) between the two gauges, while a worthwhile effort, does not address the lack of tributary gauges.

NMFS-011

Page 39, Line 743: There appears to be no justification given as to how a minimum threshold of 100 cfs of average monthly groundwater contribution avoids significant and unreasonable impacts to surface water beneficial uses caused by groundwater pumping. NMFS recommends the SR GSA include this justification.

NMFS-012

Page 39, line 754: As discussed earlier, focusing sustainable management criteria on the irrigation season is unlikely to adequately account for the spatial and temporal scale of groundwater/surface water interaction within the Shasta River basin. A groundwater/surface water analytical model is the appropriate tool for this type of analysis.

NMFS-013

How is the CDFW Water Action Plan streamflow prescriptions going to be worked into the GSAs streamflow depletion SMCs?"

NMFS-014

We hope these comments effectively clarify important concerns we have regarding potential significant impacts to SONCC coho salmon, Chinook salmon, and steelhead likely to result from the draft Chapters 3 of the Shasta Valley Basin GSP. If you have any questions, please do not hesitate to contact Rick Rogers (707-578-8552, or Rick.Rogers@noaa.gov) for further assistance.

Sincerely,

Jim Simondet
Klamath Branch Supervisor
California Coastal Office

cc: Janae Scruggs, CDFW Senior Environmental Scientist Specialist (janae.scruggs@wildlife.ca.gov)

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Craig Altare, DWR Chief, GSP Review Section (craig.altare@water.ca.gov)

References

Barlow, P.M., and Leake, S.A. 2012. Streamflow depletion by wells—Understanding and managing the effects of groundwater pumping on streamflow: U.S. Geological Survey Circular 1376. 84 pages. Available at: http://pubs.usgs.gov/circ/1376/).