

Public Trust Resource During Well Permitting – Comments and Responses

Introduction

This document includes comments provided on January 8th 2024 to County staff by NOAA fisheries which was written with input from other environmental organizations and resource agencies. These comments are displayed in black below. After meeting with these organizations and incorporating their input, staff has provided their response to comments in green.

Provided Comments

Surface water and groundwater are hydraulically linked throughout Santa Cruz county, and this linkage is critically important to maintaining seasonal habitat for steelhead and coho salmon. Where the groundwater aquifer supplements streamflow, the influx of cold, clean water is critically important for maintaining temperature and flow volume. Pumping water from these aquifer-stream complexes has the potential to affect coho salmon and steelhead habitat by lowering groundwater levels and altering the hyporheic flow between the aquifer and stream. The environmental organizations and resource agencies engaging in the county's well permitting update are concerned that groundwater extraction within Santa Cruz county is currently impacting CCC steelhead and CCC coho salmon instream habitat. Coho salmon are listed under both the California and Federal Endangered Species Act (ESA), and steelhead are listed under the Federal ESA. Both species are recognized as public trust resources (PTR) under the Public Trust Doctrine (PTD).

- 1) SGMA compliance does not necessarily equate to PTD compliance: SGMA requires that medium and high priority basin achieve sustainability within 20 years of Groundwater Sustainability Plan (GSP) acceptance by the Department of Water Resources (DWR), with sustainability defined as avoiding six specific undesirable results. The public trust doctrine must be considered—and public trust resources protected—in any decision governing withdrawals of groundwater that is hydrologically connected to public trust surface waters¹. SGMA may allow for a 20-year delay in avoiding impacts; the PTD does not. Furthermore, NMFS, CDFW and other stakeholders have commented that most, if not all, GSAs have chosen sustainable management criteria that are insufficient to avoid the streamflow depletion undesirable result, which is groundwater extraction resulting in significant and unreasonable impacts to surface water beneficial uses. If the impact threshold is insufficient in protecting surface water beneficial uses, it is likely also insufficient for protecting public trust resources. Finally, if proposing to use SGMA sustainable management criteria for meeting a county's PTD responsibility, a clear definition of how those criteria will be mandated and implemented in the county areas located outside SGMA basins is necessary.

SCC staff concur. Compliance with GSPs goals for sustainability is one objective of the well ordinance; protection of PTR (streamflow) is an additional county-wide objective. There is overlap between these goals, particularly in the Sustainability Management Criteria for Depletion of Interconnected Surface Water.

- 2) Identifying the public trust review area: Well permitting authorities should assess and identify the species and other PTR resources that could be impacted by well diversions. Counties should then develop mapping products that show the overlap PTR with contributing sources to navigable waterways. These are the areas where impacts to public trust resources must be avoided whenever feasible. To ensure compliance with both state and federal Endangered Species Acts,

¹ Environmental Law Foundation v. State Water Resources Control Board (2018) 26 Cal.App.5th 844.

expanding PTR protection to all waterways within the county that support listed species habitat is recommended.

SCC staff concur. The proposed PTR protective measures will apply at minimum to all fish-bearing streams with greater than 5% groundwater interconnectedness, and tributaries that contribute flow to those streams, including all blue-line tributaries. For new large wells, evaluation and mitigation will be required for all wells within the basin of a critical stream.

- 3) Develop appropriate methods for analyzing potential impacts to PTR: Streamflow depletion impacts to PTR and ESA/CESA-listed species should be analyzed for all proposed new or replacement wells using either a numerical, integrated groundwater/surface water model or an analytical streamflow depletion model. Groundwater/surface water model development is required under SGMA, and in many basins these models already exist. In areas not covered by a groundwater/surface water model, using analytical streamflow depletion models may be an appropriate approach.

Use of analytical methods is proposed to evaluate the impact of proposed Tier 4 wells. Groundwater/surface water models have been used to evaluate the effect of existing wells and groundwater extraction on streamflow. Staff believes the findings from those evaluations, which indicate low to moderate impact of existing and de minimis pumping, support the approach of standardized requirements for Tier 1-3 wells.

- 4) Addressing cumulative impacts of well diversions: Well analysis should consider the cumulative impact of any proposed well in light of current groundwater extraction, including both de minimis and non-de minimis wells. All analyses of proposed new or replacement wells must consider streamflow depletion impacts of the well in question when added to all other existing cumulative impacts of groundwater extraction influencing the stream or river of concern at the time of analysis.

The analysis supporting the Tier 1-3 approach does take into account the cumulative impacts of current groundwater pumping. This will also need to be addressed in Tier 4 analysis.

- 5) Meters should be required for all new or replacement non-de minimis wells: Any analysis of cumulative groundwater extraction and resulting impacts to PTR is only as good as the data that the analysis is based upon. Thus, well metering or some other method of accurately predicting groundwater extraction volumes, rates and timing should be developed. For de minimis wells that are not metered, a method for validating their assumed groundwater extraction metrics (e.g., voluntary metering, random sampling and analysis, etc.) should be developed, or the full de minimis extraction volume should be assumed for cumulative impact analysis.

Metering of all new and replacement/supplemental non-de minimis wells will be required county-wide, and it is also anticipated that the GSAs will require metering of existing non-de minimis wells. Estimates of pumping from de minimis wells is based on existing metered data from rural water systems (> 4 connections) and volunteer de minimis users, which provide solid information on annual and monthly water use. We see no need to assume the full de minimis extraction volume of 2 af/yr as that is not supported by the data. There is not adequate justification and questionable authority to require metering on de minimis wells. Historical water usage, current impacts, and projected impacts do not provide adequate justification to devote resources to extensive monitoring of de minimis wells.

- 6) Establish a groundwater monitoring program to assess and avoid impacts: Metering of new wells will provide important data but will not capture increases or other changes in well diversions that impact PTR. The well permitting authority should develop and implement a monitoring program, potentially including metering of some existing wells.

Metering of water systems and non-de minimis wells will provide ongoing information on water use. Additional metering by de minimis users is encouraged but is not practical or needed to require of all users. Within the GSAs, additional shallow monitoring wells and stream gaging has been initiated to better inform the relationship between pumping, groundwater levels, and streamflow. This information is available at <https://sccwaterdata.us/#/html/home>, and will be evaluated as it becomes available, and at a minimum in the 5-year basin evaluation reports. The geology of the Santa Cruz Mountains is not conducive to a representative monitoring program, as stacked aquifers, fractured rock, and fault lines make it extraordinarily challenging to establish useful representative monitoring points.

- 7) Identify mitigation measures to reduce or offset the impacts of well diversions: Mitigation may be an acceptable approach to avoiding PTR impacts. For instance, increasing on-site groundwater infiltration can offset groundwater pumping impacts and allow the permitting of a well that otherwise should not be permitted. In areas where existing cumulative impacts of well exists, local or regional groundwater recharge projects can avoid impacts of new and existing wells. Well permitting authorities should assess and identify appropriate mitigation measures and the potential for groundwater recharge projects. Reestablishing floodplain/stream interconnectivity may beneficially recharge near-stream, shallow aquifers important to summer baseflow protection, while also providing other valuable benefits such as downstream flood attenuation and winter habitat for imperiled species. We encourage these multi-benefit projects wherever feasible.

A number of mitigation measures are already required and more will be considered. Mitigation measures are included in the GSPs for all of the priority groundwater basins in the county to reduce the current impacts on streamflow from existing municipal and agricultural pumping. These include recharge, injection, and conjunctive use projects. Additionally, County development regulations already require infiltration measures for all construction or reconstruction projects. (As an example, infiltration measures for a reconstructed home with 5400 sf of otherwise impervious surface provided for the capture and infiltration of an average of 0.37 afy.) The County well ordinance already requires water conservation measures as a condition of approval for all non-de minimis wells. New construction requires the use of high-efficiency fixtures and water efficient landscaping. Additional measures will be considered for Tier 1-3 wells and will likely be required for Tier 4 wells.

- 8) Low flow habitat protection must be based upon an appropriate analytical threshold: Given that SGMA sustainable management criteria are likely inappropriate for complying with the PTD, we recommend counties develop ecologically-based thresholds from the scientific literature for protecting PTR from streamflow depletion impacts (e.g., RCT depth, California Environmental Flow Framework, percent flow reduction², etc.).

Staff has reviewed the California Environmental Flow Framework and other efforts to help define allowable thresholds. Much of that information has been taken into consideration in the current

² e.g., Richter, Davis, M. M., Apse, C., & Konrad, C. (2012). A presumptive standard for environmental flow protection. *River Research and Applications*, 28(8), 1312–1321.

version of this project. Measured dry season baseflows in Bean Creek and Moore Creek currently exceed the modelled dry season functional flows from the California Natural Flows Database. However, dry season flows in Soquel Creek are well below functional flows.

- 9) SGMA’s “de minimis” definition does not represent low water use, nor is it based upon PTD compliance: It appears that the 2 acre-feet per year (AFY) (i.e., over 1,800 gallons/day) water use threshold defined as “de minimis” within SGMA regulations was not developed for, nor has any basis in, protecting PTR. Instead, our interpretation of the SGMA “de minimis” definition is that it only addresses the ability of a Groundwater Sustainability Agency to levy fees and require metering³. There has been no evaluation of the relationship between 2.0 AF of groundwater being extracted and impacts to ISW, GDE, or public trust resources. If a county wishes to encourage water conservation by ministerially permitting true “low water use” wells, a more appropriate threshold could be 0.5 AFY⁴.

As stated above, it is clear that practically all de minimis users use much less than 2 afy, and there is no reason they would ever go up to that amount. Some shared wells may use up to 1-1.5 afy, but those are serving multiple units. The 2 afy year criteria has precedent from a permitting perspective from its use in SGMA and in the existing County ordinance. It does not seem that any ecological benefits would be accomplished by lowering that threshold, when actual de minimis use is already well below 0.5 afy, nor would it be enforceable as these wells would not meet the metering threshold.

- 10) Streamflow depletion mitigation measures: Improved water efficiency and other mitigation measures considered within the well permitting process (e.g., in impact analyses, or influencing whether a well is ministerially or discretionarily permitted) should be accurately quantified based upon best available information.

SCC staff concurs. Staff is using the USGS streamflow depletion equations to assess the appropriate stream setback and seal depth to minimize stream depletion for wells in different geologic formations.

³ e.g., CCR 5202(c)(1); CCR 10725.8(e); CCR 10730

⁴ According to the Sonoma County GSA fee study, groundwater use data from private wells in Sonoma County parcels show 69 percent of parcels use less than 0.5 AF per year (from Powerpoint slide show shared with TWG via email from Robert Pennington, January 25, 2023).