FRIENDS OF THE EEL RIVER

Working for the recovery of our Wild & Scenic River, its fisheries and communities.

Wednesday, March 1, 2017

Mark Cowin
Director, California Department of Water Resources
1416 9th Street
Sacramento, CA 95814
via email to

Re: Eel River Valley Groundwater Basin Groundwater Sustainability Plan Alternative

Dear Director Cowin,

Friends of the Eel River offers the following comments on the Groundwater Sustainability Plan Alternative (Alternative Plan) submitted to your department in December 2016 by Humboldt County. The Alternative Plan was prepared by SHN Consulting Engineers and Geologists.

Friends of the Eel River is a nonprofit citizens' group that advocates for policies and practices consistent with the protection and recovery of the Wild and Scenic Eel River's outstanding resource values, especially the three salmonid species protected under the federal Endangered Species Act. Our central focus is the protection and recovery to ecological health of the Eel's fisheries and associated ecosystems.

Humboldt County's Alternative Plan was submitted pursuant to the terms of the Sustainable Groundwater Management Act (SGMA) of 2014. (Water Code §10720 *et seq*.) and its implementing regulations. (see 23 CCR §350 *et seq*.) The rules allow a local Groundwater Sustainability Agency (GSA) governing a medium or high priority groundwater basin to avoid the SGMA's requirement that a Groundwater Sustainability Plan (GSP) be prepared and implemented by submitting an Alternative Plan.

While Alternative Plans are not required to meet all of the standards for Groundwater Sustainability Plans, DWR's regulations do require that "elements of the Alternative are functionally equivalent to the elements of a Plan required by Articles 5 [Plan Contents] and 7 [Annual Reports]... and are sufficient to demonstrate the ability of the Alternative to achieve the objectives of the Act." (23 CCR § 358.2(d)) First among those objectives is "(t)o provide for the sustainable management of groundwater basins." (Water Code §10720.1(a))

The SGMA aims to achieve sustainable management of groundwater by requiring GSPs to avoid "undesirable results" using specific, measurable criteria for minimum thresholds for a range of sustainability indicators. An Alternative will be consistent with the objectives of the SGMA only to the extent that it, too, avoids undesirable results. Indeed, the premise of

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any Alternative must be that it has not had an undesireable result in the previous decade, because an Alternative Plan must include "an analysis of basin conditions that demonstrates that the basin has operated within its sustainable yield over a period of at least ten years." (Water Code §10733.6(b))

Under the Department's regulations, " 'Undesirable result' means one or more of the following effects caused by groundwater conditions occurring throughout the basin ... (d)epletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water." (Water Code §10721(x)(6))

The Eel River was designated both a federal and California Wild and Scenic River in recognition of its extraordinary scenic, recreational, fishery, and wildlife values. (see Public Resources Code § 5093.50 et seq.) State agencies are required to protect the free flowing character and extraordinary values of designated state rivers. (§ 5093.61)

All segments of the Eel River watershed, including the lower Eel, are also listed as 'impaired' under §303(d) of the Clean Water Act by the North Coast Regional Water Quality Control Board (Regional Board) for temperature and sediment. The Alternative Plan draws attention to the fact that the Regional Board declined to list the Eel River for low flow when FOER and others petitioned for such a listing. (p. 32) We would caution against drawing any conclusions from that refusal. While Regional Board staff agreed with petitioners that the Eel and other North Coast rivers are in fact impaired by low flow, the Regional Board has taken the position that it lacks the authority to list rivers for low flow.

Among the beneficial uses established for the lower reaches of the Eel River under the Clean Water Act and Porter-Cologne Act are a number of uses related to the protection of fisheries. These include cold freshwater habitat; wildlife habitat; habitat for rare, threatened, or endangered species; migration of aquatic organisms; spawning reproduction, and/or early development; subsistence fishing, and Native American culture.

Three species of salmonid native to the Eel River are listed as Threatened under the Federal Endangered Species Act: chinook salmon, coho salmon and steelhead. (See, e.g., 70 FR 37160) Coho salmon in the Eel River are also listed as Threatened under the California Endangered Species Act. The lower Eel River is designated as Critical Habitat for all three listed salmonids. (See, eg, 70 FR 52544) In addition, the lower Eel also sees listed species like the threatened Tidewater goby, and species of concern including coastal cutthroat trout, Pacific lamprey, and green sturgeon.

The Lower Eel Valley Groundwater Basin is designated a medium priority basin by DWR's Bulletin 118 (2016). In the DWR's prioritization of groundwater basins across California, the Lower Eel Valley Groundwater Basin was ranked approximately in the middle of the medium priority basins with a score of 16.3; some thirty other groundwater basins were ranked as medium priority with the same or lower scores, down to 13.5.[1]

While the prioritization analysis is essentially arithmetic, the CASGEM Basin Summary for the Lower Eel River Valley (Basin 1-10) points to critical facts about the basin which distinguish it from most inland groundwater basins, describing it as a **"(s)hallow basin with strong SW-GW interaction and fishery issues. Useable gw basin storage is estimated at 100,000 af and annual use is estimated at over one-half the total**

[1] (High priority basins scored 21-27; low priority basins 13.3 to 6; very low all scored 0.)

storage." (CASGEM Basin Summary, 5/30/2014) This description suggests that intensive use of groundwater, particularly in a drought period, could lead to reductions in surface flows which could affect Eel River fisheries.

Strangely enough, after a series of historically dry, hot years, in the last weeks of August 2014, the lower Eel River disconnected – ceased to flow on the surface – in the reach immediately above the river's tidal bore, and pretty much smack in the middle of the Lower Eel Valley Groundwater Basin.[2] Surface flows only reconnected when a pulse of water released from the two dams on the mainstem Eel River to assist steelhead survival in the warm upper river finally reached the lower river, approximately 170 miles downstream.

Among the fish unable to navigate the dried-up lower Eel were adult chinook salmon seeking their spawning grounds in the upper watershed. Chinook in the Eel generally begin to come upriver in early September, but they have been reported in late August.[3] Adult coho and steelhead generally come into the system in later months. However, while juvenile chinook leave for the ocean in the spring of their birth year, both coho and steelhead must spend a year in freshwater before they can leave for the ocean. Thus, depletions of surface water in the lower Eel River during August risk impacts to migrating adult chinook, but also to resident juvenile coho and steelhead.

Faced with as clear an instance of a "significant and unreasonable adverse impact" on beneficial uses as one could ever hope to see – where water quality and habitat values were reduced to zero – Humboldt County seeks to deny any relationship between groundwater use in the Lower Eel Valley and the Eel River's disconnection. Instead, it urges DWR to look upstream for reasons the river went dry.

> *"The primary anthropogenic causes of reduced streamflows in the Eel and Van Duzen Rivers are upstream diversions and changes in forest composition, both of which occur at a watershed scale. In addition, the stream channels are impacted by sediment deposits associated with the 1955 and 1964 floods."* (Alternative Plan, page 32)

But the river didn't go dry upstream. It went dry in the losing reach of the Lower Eel, precisely where one might expect a depleted groundwater aquifer, strongly connected to surface flows, to have the greatest effect on surface flows. The Alternative Plan simply denies that a significant and unreasonable adverse impact occured. Further, the Alternative Plan denies that such an impact could recur: it provides no evidence as to how it will prevent "depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water." (Water Code §10721)

It would be bad enough if there were just the one significant and unreasonable adverse impact on beneficial uses. However, while we can be quite certain that such an impact did occur in August 2014, the data presented in the Alternative Plan do not provide sufficient

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[2] See, e.g., https://lostcoastoutpost.com/2014/sep/5/why-eel-river-disappeared-and-what-it-means-fish/ . This extraordinary event should be distinguished from the earlier disconnection of flows at the bottom of the heavily aggraded Van Duzen River in July of 2014; that reach has been subject to disconnection since it became heavily aggraded. See https://lostcoastoutpost.com/2014/jul/17/drought-makes-van-duzen-river-disappear/

[3] At p. 178 of Vol II, NMFS's Coastal Multispecies Recovery Plan states that "Adult Chinook salmon tend to enter the Eel River in early September," but see also http://www.northcoastweb.com/fishing/rivers/eel/SPOT_EEL.HTM, which states "Chinook start coming into the river in August."

information to rule out the possibility that there were also significant and unreasonable adverse impacts on connected surface flows in other recent years. While it has not completely disconnected so dramatically as in 2014, the lower Eel has seen extremely low flows at the end of the dry season, as well as outbreaks of fish disease, in previous and successive years.

Humboldt County cannot even begin to determine whether significant and unreasonable adverse impacts to surface water and fisheries have occurred, however, because it has not developed the basic criteria necessary to assess such impacts. As the National Marine Fisheries Service has noted in a very similar context (the proposal of an Alternative Plan for the Ojai Basin), but writing only of steelhead because chinook and coho no longer survive in the Ojai Basin:

> *When analyzing impacts on steelhead or other aquatic organisms resulting from streamflow depletion, identifying flow levels that effectively support essential life functions of this species is critical. Specifically, it is essential to determine the pattern and magnitude of flows that adequately support winter and spring adult and smolt steelhead migration, and juvenile rearing throughout the year, especially during summer. Without an understanding of these and other biotic thresholds, a Groundwater Sustainability Agency cannot reliably answer the question of whether significant and unreasonable impacts resulting from surface water depletion are avoided.* (NOAA's National Marine Fisheries Service's Comments on Proposed Alternative Groundwater Sustainability Plans, Ojai Basin.)

The county rests its entire Alternative Plan on its shaky claim that the basin has been managed without undesirable adverse impacts for the last decade. For example, the Plan states that "minimum thresholds are not required when it is demonstrated that undesirable results are not present and not likely to occur. [23 CCR §354.28(e)" (Alternative Plan p. 32) The inverse must therefore be the case: because the county has failed to demonstrate that "undesirable results are not present and not likely to occur," minimum thresholds are required. No minimum thresholds are specified in the Alternative Plan.

Again, I'm going to quote NMFS's summation of these issues in the Ojai groundwater basin, as the agency's comments are on point for the Lower Eel as well:

> *The SGMA Emergency Regulations require GSAs to identify numeric minimum thresholds for each sustainability indicator, including depletions of interconnected surface water that have significant and unreasonable impacts on beneficial uses of surface water. The Alternative Plan does not identify minimum thresholds for any undesirable result, but instead argues that since past, present, and future groundwater pumping operations ensure sustainable management of groundwater supplies for water supply purposes, no minimum thresholds are needed. ... (T)he lack of data presented on key environmental parameters (e.g., surface flows, pool depth, size and distribution, etc.) does not make it possible to conclude that the Alternative Plan demonstrates sustainable management within the ... Basin. A GSP should be developed that identifies appropriate flow-based thresholds for surface-water depletion, based on actual measures of extraction rates and surface flow and pool depth, size, and distribution monitoring, and not*

> *utilize groundwater levels alone as a metric for measuring, monitoring, and ultimately avoiding significant and unreasonable surface water depletion. ... (T)here appears to be no information within the Alternative Plan that suggests instream flows associated with the identified groundwater levels actually avoid adversely impacting beneficial uses of the surface waters of* (here, the Eel River). (NOAA's National Marine Fisheries Service's Comments on Proposed Alternative Groundwater Sustainability Plans, Ojai Basin.)

NMFS highlights a central question here for groundwater management and the implementation of the SGMA. Is sustainable management of groundwater simply management that permits a sustained yield of groundwater pumping to continue indefinitely? Is it enough just to monitor groundwater levels alone? Or must the potential impacts of groundwater pumping on connected surface water be considered as well?

The SGMA is clear here. Groundwater must be managed for more than groundwater yield. A demonstration of sustainable management must show there have been no undesirable results, including significant and unreasonable adverse impacts on surface flows connected to groundwater. And ensuring that no undesirable results will occur requires more than simply monitoring groundwater levels.

The Alternative Plan does not tell us, because Humboldt County does not know, what levels of groundwater use under what conditions can lead to significant and unreasonable adverse impacts on beneficial uses of the lower Eel River. But anyone not wilfully blind can see that such impacts have happened, recently, and could recur. At a minimum, the Alternative does not provide evidence which demonstrates that the Lower Eel Vally Groundwater Basin "has operated within its sustainable yield over a period of at least ten years."

The Alternative Plan, like the Ojai plan referenced in NMFS' comments, reflects a focus on "management of groundwater supplies for water supply purposes." The Alternative Plan claims to "document abundant water supply." (Appendix A, p. 2) It fails to develop a detailed water budget as required by SGMA, claiming "this level of analysis is unwarranted, because the Basin has been managed without undesirable effects." (Appendix A, p 6 *et seq*.) It is striking how many required elements of the Alternative are dispensed with by this statement. Similarly, as noted above, the Alternative fails to set minimum thresholds for sustainability indicators. It also declines to specify the required "measurable objectives," instead proposing a "functionally-equivalent goal-setting framework." (Appendix A, p. 11) In our view, the extensive compromises embedded in SGMA already render the law far too weak in securing sustainable groundwater management. If Humboldt County is allowed to establish this Alternative Plan, it will reveal that SGMA has no teeth at all.

Declining average dry season flows, unfortunately, are very likely to remain a problem for the Eel River watershed in the future. Asarian's 2015 analysis of the relationship between precipitation and streamflow during the period of record demonstrates a broad pattern of streamflows declining even more than would be explained by lower precipitation. (See Alternative Plan, p. 27) For the Lower Eel River Groundwater Basin, lower surface flows in the whole Eel River watershed during the critical months of summer and fall will mean that surface flows are no longer available to buffer unsustainable groundwater extraction rates.

When the next extended drought comes, as it inevitably will, we need to be able to manage the Lower Eel Groundwater Basin to ensure not only that diversions are not taking water needed to support beneficial uses like imperiled native fish, but that the lower basin is doing its part to keep the river flowing, cold, and healthy.

The county's failure to develop a full water budget and indeed, a GSP, is particularly disappointing given the combination of factors which point to increasing challenges for protecting the Eel River's flows and fisheries in the future. Recent research has shown that the last century's record of weather does not reflect the wide range in California's actual climate history. Droughts of much greater intensity and duration than the one we have just seen are a normal feature of our climate history. Anthropogenic global warming is very likely to increase the incidence of such events. As well, the sea level rise driven by global warming appears already to be driving greater saltwater intrusion in the lower Eel River Valley (notwithstanding the Alternative Plan's assurances to the contrary).

In its effort to support its Alternative Plan, and to avoid the need to prepare a GSP and the monitoring and regulation which would follow, the County goes to some lengths to dispute the previously cited CASGEM characterization of the basin as a "(s)hallow basin with strong SW-GW interaction and fishery issues. Useable gw basin storage is estimated at 100,000 af and annual use is estimated at over one-half the total storage." (CASGEM Basin Summary, 5/30/2014)

The County provides information which purports to refute DWR's estimates for the ratio between useable groundwater basin storage (100,000 acre-feet) and estimated annual use (over one-half the total storage). Humboldt County presents new estimates for both the useable groundwater basin storage and the estimated annual use. While the information presented may be useful, there are real questions whether the county's new estimates are in fact actually more accurate than DWR's previous assessments.

Putting those questions aside for a moment, however, the problem with Humboldt County's argument – which boils down to "there's a lot more water than you thought and we're pumping less of it than you thought" – is that it fails entirely to explain what happened to the lower Eel in August of 2014. If there's so much water in the basin, and so much less is being pumped, then **why did the river go dry in the middle of the groundwater basin?**

Both the water availability analysis and the water use analysis appear to have found the answers Humboldt County was seeking. While the relatively short comment period afforded to the public has not permitted us to develop a technically sophisticated critique of these studies, we urge the Department to review the proffered information with a jaundiced eye, given the apparent contradiction between the rosy picture presented in the Alternative Plan and the observed flow conditions in the lower Eel in recent late dry seasons.

In particular, we would suggest that water demand would be more appropriately and accurately evaluated by using well meter reports. Of course, a central goal of many lower Eel landowners in this process is to avoid any reporting requirement or regulation of their groundwater extraction. We would remind those stakeholders, as well as the county, that under the *Scott Valley* case, groundwater linked to surface water may be subject to public trust considerations where groundwater extraction harms "the public's right to use those navigable waters for trust purposes." (*Envtl. Law Found. v. S.W.R.C.B.*, 34-2010-80000583 (Sacramento Super. Ct. order filed July 15, 2014)

Please note as well that Humboldt County claims that its proposal is supported by all members of its Working Group. Friends of the Eel River is a member of the Working Group. (See Alternative Plan Appendix B, p. 5) As the careful reader may have concluded, FOER strongly objects to proposed adoption of the Alternative Plan.

The Alternative Plan suggests at p. 9 that "The Humboldt County Planning and Building Department is projecting to complete the County's General Plan Update in late 2017 or early 2018," and further intimates that the County's general planning policies might result in protection for groundwater and attention to the impacts of groundwater extraction. These assertions aren't worth the toner they're printed with. Humboldt County is now nearly two decades late with that General Plan Update. And the county's failure to enforce even the most minimal planning standards has created a continuing catastrophe for its resource lands and waters over the same period. The odds of the current majority of Humboldt County's Board of Supervisors passing a General Plan Update which actually complies with state law would have to be expressed using fractions of a percent.

Conclusion

As noted, under Water Code § 358.2, Alternative Plans must be "functionally equivalent" to elements required in articles 5 and 7 and "sufficient to demonstrate the ability of the Alternative to achieve the objectives of the Act." It bears emphasis that, under the SGMA, the burden of proof is on Humboldt County to show that its Alternative Plan is complete and sufficient to meet the objectives of the SGMA. The county has not carried that burden of proof here. The Alternative Plan is deficient in several important respects. Most of all, it has not demonstrated that the basin has been managed sustainably for the last decade.

Humboldt County is basically arguing, in the face of clear evidence, that it does not wish to recognize the existence of real problems, and does not wish to comply with the law which requires that someone take appropriate action to manage those problems. It's very clear that the reason the county is taking this position is that influential landowners and agricultural operators in the lower Eel River Valley wish to avoid any regulation of their groundwater use. They are entitled to hold that 19th century position, even in the 21st century. But "everything's fine" is not an appropriate response to the challenges we face in managing the Lower Eel Valley Groundwater Basin for truly sustainable use.

Thus, the Department should reject the Alternative Plan immediately. Humboldt County is not entitled to any benefit of doubt here; it has made its intention to avoid the requirements of SGMA plain. A full Groundwater Sustainability Plan should be prepared and implemented, as required by SGMA.

Thank you for your attention to these vital, though often terribly obscure, matters.

Sincerely yours,

Scott Greacen
Executive Director