



March 9, 2017

State Water Resources Control Board
Division of Water Rights
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PROTEST – (Petitions)

BASED ON ENVIRONMENTAL OR PUBLIC INTEREST CONSIDERATIONS

Applications: 12919A, 15736, 15737 AND 19351

Permits: 12947A, 12949, 12950 and 126596

Protestant **Russian Riverkeeper, PO Box 1335, Healdsburg, CA 95448 (707)433-1958** has carefully read a notice dated September 23, 2016 relative to a petitions for Change and Extension of time submitted by the **Sonoma County Water Agency** under Applications 12912A, 15736, 15737, and 19351, for permits 12947A, 12949, 12950, 16596, regarding the Russian River downstream of Coyote Dam in Mendocino County, and Dry Creek downstream of Warm Springs Dam in Sonoma County. We have carefully read the petitions as well. The Sonoma County Water Agency (SCWA) seeks to reduce minimum flows in the Russian River and Dry Creek in response to the National Marine Fisheries Service's *Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance, conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation District in the Russian River Watershed*, issued on September 24, 2008, to change the way it determines water year types, and to extend time on the permits to put water to full beneficial use. We have also carefully reviewed the Draft EIR for SCWA's Fish Habitat Flow & Water Rights Project (Project DEIR) prepared for the SCWA Petitions for Change and Extension of Time.

It is desired to protest against the approval thereof because to the best of our information and belief:

- o (1) will not be within the State Water Resources Control Board's (SWRCB) jurisdiction;
- x (2) will not best serve the public interest;
- x (3) will be contrary to law; and,
- x (4) will have an adverse environmental impact.

In the Petitions we are protesting these specific provisions:

- The requested reduction in minimum flows and the associated schedule of flows under various storage conditions in the mainstem Russian River ("Proposed Flows").

Requested changes to reduce minimum flows are not in the public's best interest; they will lead to negative environmental impacts and harm public trust values of the Russian River for the following reasons:

1. Proposed Flows will lead to increased concentrations of impairing pollutants and exacerbate existing impairments for biostimulatory substances, dissolved oxygen and Temperature
2. Proposed Flows will not protect the beneficial uses of the Russian River such as REC-1, MUN, COLD, EST, WILD, NAV
3. Proposed Flows might not meet goal of "improving habitat conditions" stated in the RRBO and Project DEIR and potentially harm ESA listed species
4. Climate change will exacerbate existing WQ impairments under Proposed Flow Schedules with no mitigation
5. Proposed Flows will impede commercial and private navigation on the currently navigable mainstem Russian River
6. Proposed Flows will cause significant negative economic impacts to businesses and residents in a low-income area of Sonoma County
7. Proposed Flows ignore superior environmental alternatives or hybrid alternatives that would provide mitigation for water quality impacts identified in the Project DEIR and provide a higher level of assurance Project objectives are met

In the Petitions we have **no protest** with the following provisions:

- Changing the hydrologic index to Lake Mendocino and Russian River watershed storage conditions
- Adding existing points of diversion for Occidental and Windsor
- Extending to 2040 the Water Agency's right to divert and re-divert 75,000 acre feet of water annually

Facts supporting these allegations:

Background on Reduced Flows and General Comments

Friends of the Russian River, predecessor to Russian Riverkeeper, worked with Trout Unlimited in 1996 to host a two-day "Steelhead Expo" to bring together experts and the community to discuss the declining Steelhead Trout population in the Russian River and propose ESA listings. Since that time, Friends of the Russian River, and its successor organization, Protestant Russian Riverkeeper, have advocated for regulations and practices to restore Steelhead, Coho and Chinook salmon populations in the Russian River. Our objective in this protest is not necessarily preserving current D1610 flows and the status quo, but rather, to ensure that any permanent change in flows is supported by solid scientific evidence. We are in support of changing flows as a part of but not 100% of the solution to increase

carry-over storage that enhances system reliability and ability to reduce Eel River diversions. The other solutions that must be realized, in addition to lesser than proposed flow reductions, are eliminating unauthorized stream diversions and increasing water use efficiency to improve storage in Lake Mendocino. This will diversify the solutions and offset predicted negative water quality impacts.

Russian Riverkeeper is protesting the Petitions since we are not convinced by all the information presented to date, that permanent flow reductions as described in the DEIR, would actually improve habitat conditions for ESA listed fish. We are gravely concerned about the growing body of evidence suggesting that it is mistake. The Low-Flow concept first arose in 1999, when the Sonoma County Water Agency ("SCWA") proposed to drastically reduce flows to mimic "historical" flows in the Enhanced Natural Flow Proposal. That document theorized that such reduced flows might help steelhead and salmon by improving habitat similar to historic conditions. Obviously that was laughed out of the watershed, as changing one variable of hundreds will never restore a wildlife population subject to thousands of human habitat alterations. Since that 1999 proposal, the focus of the Russian River Biological Assessment (Corps, 2004) in 2004 and the 2008 Russian River Biological Opinion ("RRBO") both have a strong bias towards reducing flows as the primary means to improve habitat conditions in the mainstem of the River while ignoring other feasible alternatives. This bias continued unabated in the Project DEIR that was submitted regarding the Petitions.

Protestant Russian Riverkeeper's concern proposed flow reductions prompted the organization to obtain funding for a peer review of the 2004 RRBA conclusions and recommendations. That Peer Review, entitled "Review of the Flow Proposal in the Russian River Draft Biological Assessment" is attached to this Protest because the recommendations made by the independent panel scientists were often ignored in the final RRBO and development of the Reasonable and Prudent Alternative (RPA) and also the Project DEIR. This is especially problematic since there is no clear scientific evidence to support the proposition that D1610 flows are a significant cause of listed fish population declines, nor does any of the new documents such as RRBO and Project DEIR. Indeed, Conclusion # 4 of the RRBA Peer Review stated, "[t]he habitat analysis included in the RRBA (Appendix F) has too many biases and analytical weaknesses to warrant the conclusion that D1610 baseflows are limiting salmon and steelhead populations in the mainstem Russian River, and that the Flow Proposal will benefit them." This habitat analysis was carried intact into the RRBO, meaning that a pivotal and basic scientific question still remains unanswered; it seems extremely unwise to embark on a project predicated on an idea that has yet to be proven. If it can be established that D1610 baseflows are, in fact, limiting salmon and steelhead populations in the mainstem of the Russian River, and further established that the Flow Proposal will benefit these species, then the petition might be worthy of consideration. Until such time, however, the petition recklessly threatens listed species without a clear scientific basis or thorough evaluation of the risks involved.

We are in strong disagreement with the 2008 Russian River Biological Opinion (NMFS, 2008), SCWA Petitions for Change and 2016 Sonoma County Water Agency Fish Habitat Flows and Water Rights Project Draft EIR ("Project DEIR") conclusions that the proposed flow reductions are the superior approach to improving habitat for ESA listed fish and believe that several other superior environmental alternatives should be pursued instead. Evidence has yet to be developed to clearly support conclusions that flow reductions will improve salmon habitat; equally important, evidence suggesting that the proposed change in flows will violate water quality standards to protect ESA listed fish, has simply been accepted with no mitigations offered in the DEIR. The Upper Russian River Habitat Model in the DEIR

shows at best marginal gains that will not affect juvenile steelhead populations or survival rates, more detail on that later in our comments. Another example of the undue bias towards reducing flows while ignoring other alternatives is the Project DEIR's approach to improving habitat conditions for ESA listed fish in the Russian River Estuary as detailed in our specific comments. Due to the extreme risk of Coho and Steelhead extinction in the Russian, we just cannot afford to make the wrong decision.

Both habitat creation and flood control were and are carried out by SCWA and the Army Corps of Engineers and are reviewed in the 2008 RRBO. The result of those activities, along with excessive gravel mining permitted by both NMFS and Army Corps, was the elimination of the floodplain connectivity due to channel incision up to 25 feet and reduction in channel width by up to 80%. The possibility that channel confinement has altered flow-habitat relationships is a serious drawback to both the 2008 RRBO, Project DEIR and the DEIR's Upper Russian River Habitat Model evaluations and conclusions, but again, flow reduction seems to be "driving the bus" rather than robust scientific evidence suggesting its use. The recently published 2016 Russian River Independent Science Review Panel report (ISRP, 2016) states clearly that channel incision, entrenchment and confinement has the strongest effect on habitat degradation for ESA listed species. This issue is also discussed in the DEIR cumulative impacts section although no mitigations or alternatives were proposed to address this major habitat issue. The ISRP report shows the mainstem channel has been changed by mining and flood control projects from a wide, meandering stream into a straightened and narrow channel. The IRSP further states how this has resulted in loss of both habitat quantity and quality with no mention of flows being a negative driver.

Finally we call your attention to the fact that the Proposed Flows in the DEIR create a real conflict between the Clean Water Act and Endangered Species Acts. As the North Coast Basin Plan prescribes water quality standards designed to protect beneficial uses, the standards for Temperature, Biostimulatory Substances and Dissolved Oxygen were determined based on protecting key life stages for Steelhead Trout, Chinook salmon and Coho Salmon. Today we are not in attainment of those water quality standards and the Proposed Flows would add to the existing impairments that harm salmon so how can the requested flows be beneficial for salmon? The conflict that is created between the Clean Water and Endangered Species Act's should give great pause to the Division of Water Rights that other alternatives must be pursued to achieve the Project Goal of improving salmon habitat.

While flow modification is likely going to play a part in optimal river and estuary management ***it is unclear at this time that the proposed changes under this petition will improve conditions over D1610 flows as no valid comparative studies have been performed.***

Specific Comments and Supporting Information

1. Proposed Flows will lead to increased concentrations of pollutants and exacerbate existing impairments for biostimulatory substances and Temperature
2. Proposed Flows will not protect the beneficial uses of the Russian River such as REC-1, MUN, COLD, EST, WILD
3. Climate Change will exacerbate existing WQ impairments under Proposed Flow Schedules with no mitigation

4. Proposed Flows might not meet goal of “improving habitat conditions” stated in the RRBO and Project DEIR and potentially harm ESA listed species
5. Proposed Flows will impede commercial and private navigation on the currently navigable mainstem Russian River
6. Proposed Flows will cause significant negative economic impacts to businesses and residents in a low-income area of Sonoma County
7. Proposed Flows ignore superior environmental alternatives or hybrid alternatives that would provide mitigation for water quality impacts identified in the Project DEIR and provide a higher level of assurance Project objectives are met

1. Proposed Flows will lead to increased concentrations of pollutants and exacerbate existing impairments for biostimulatory substances and Temperature

In her research paper (link below) Katherine Carter, Environmental Scientist, NCRWQCB shows that Temperature is one of the most important environmental influences on salmonid biology. Associated with a reduction in flow during warmer summer air temperatures, is an increase in water temperature, which affects all life stages from embryo mortality to growth impairment, and ultimately juvenile and adult mortality in salmonids. [Effects of Temperature, Dissolved Oxygen/Total Dissolved Gas, Ammonia, and pH on Salmonids. Implications for California's North Coast TMDLs. California Regional Water Quality Control Board, North Coast Region](#)

In the ISRP Section 3.7 Water Quality pg.90 ***“water temperature appears to be the key water quality impairment relevant to the three threatened and endangered salmonid species. Flow regulation by the major dams affects surface water temperature directly, and also affects surface and groundwater interactions...Temperature buffering by surface and groundwater interactions is important for over-summer survival of salmonids”***

The Basin Plan for the North Coast Regional Water Quality Control Board provides water quality objectives for various constituents. For temperature, the water quality objective is: “At no time or place shall the temperature of any cold water be increased by more than 5o F above natural receiving water temperature.”

For dissolved oxygen in the Russian River main stem, the water quality objective is:

Minimum	90%* Lower Limit	50%** Lower Limit
7.0 mg/l	7.5 mg/l	10.0mg/l

*90% upper and lower limits represent the 90 percentile values of the monthly means for the calendar year. 90% or more of the monthly mean must be less than or equal to an upper limit and greater than or equal to a lower limit.

**50% upper and lower limits represent the 50 percentile values of the monthly means for a

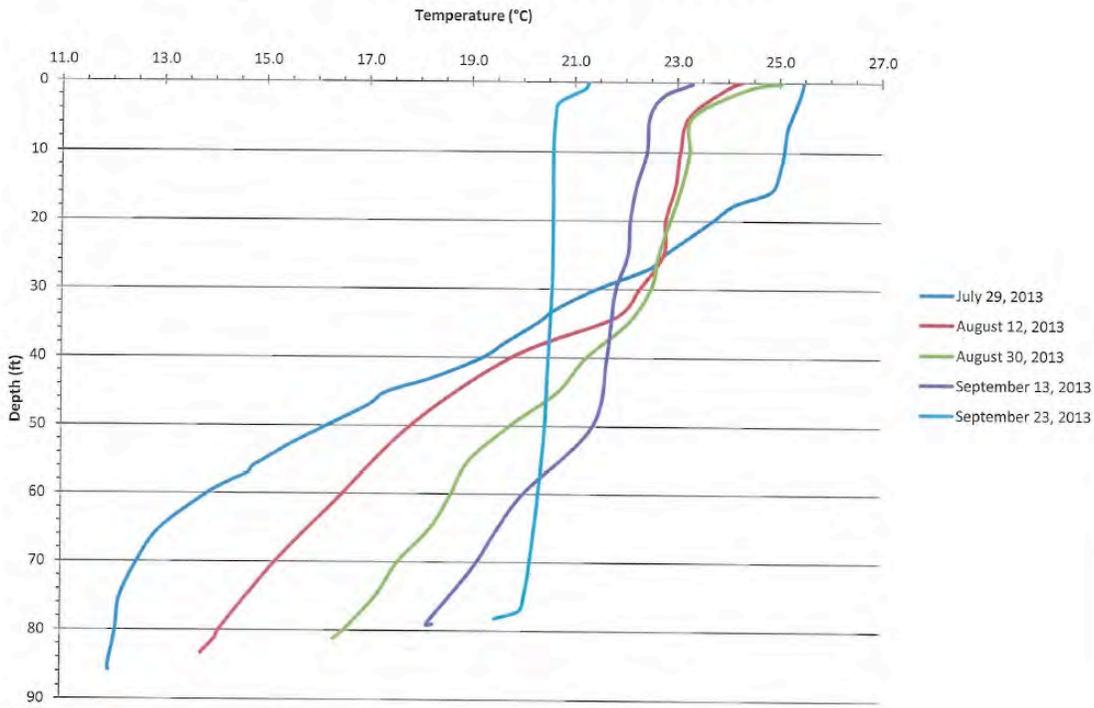
Calendar year. 50% or more of the monthly means must be less than or equal to an upper limit and greater than or equal to a lower limit.

Basic physics dictate that it takes less energy to heat a smaller amount of water than a larger amount that is illustrated by simply putting a full and half-full glass of water in the sun and every time the half-full glass will heat faster. The Russian River is no different than the water glass example; less water heats more efficiently, so reducing flows by 44% (difference between D1610 & Flow Schedule 1 –Wettest) would allow solar radiation to more rapidly increase water temperatures under the proposed Flow Schedules. Historically groundwater flows would buffer temperatures but today much of the Russian River is a losing stream by mid-summer when solar radiation is at its peak (Metzger, 2006) The density of stream side wells especially on or near tributaries intercept most of groundwater flows as temperatures warm up and irrigation season starts. This dynamic becomes more negative during droughts as irrigation demands increase to replace the lack of soil moisture from rainfall (Safeguarding California, Implementation Action Plans, CA Resources Agency, 2016).

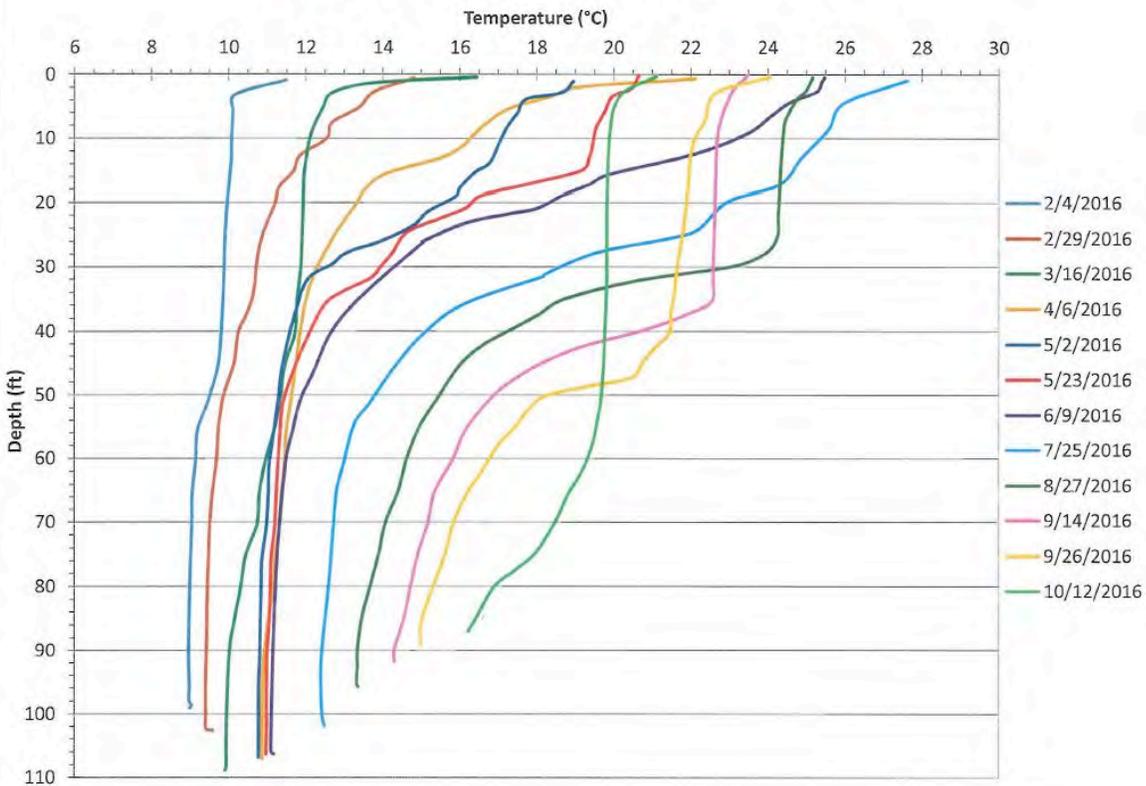
According to the NCRWQB Basin Plan, 2007 Pg. 38 “Controllable water quality factors shall conform to the water quality objectives contained herein. When other factors result in the degradation of water quality beyond the levels or limits established herein as water quality objectives, then controllable factors shall not cause further degradation of water quality. Controllable water quality factors are those actions, conditions, or circumstances resulting from man's activities that may influence the quality of the waters of the State and that may be reasonably controlled”. ***Dam releases from Lake Mendocino and Lake Sonoma are controllable water quality factors.***

There is a dynamic that occurs when Lake Mendocino levels are low in the summer months and the lake bottom temperatures warm up above 20⁰ C and negatively affect downstream temperatures, however this does not occur every year. In 2013 from August 1st to October 1st the lake storage declined from 50,000af to under 40,00af and the Lake bottom temperatures rose from 11.5⁰ C to 21⁰ C. In contrast in 2016 when the lake storage ranged from 75,000 af to 56,000af in the same period temperatures at lake bottom from 10⁰ C to 17⁰ C ensuring that downstream temperatures stayed within water quality standards.

Lake Mendocino near Intake Structure at Dam Vertical Temperature Profile - 2013



LM Dam - Vertical Temperature Profile 2016



Comparing temperature profiles through late Summer 2013-2016, low storage affects temps, higher storage volumes maintain temps within WQS downstream

We discussed this dynamic with North Coast Waterboard staff as they saw it as the only habitat benefit from reduced flows in the Upper Russian River. We discussed that while this dynamic is present in some years at storage levels over 45,000 to 50,000 af this dynamic is not pushing downstream temperatures above standards. In those low water years the more restrictive flow schedules are in effect that will aide in maintaining higher Lake levels. Once the Hydrologic Index is shifting from the Eel to the Russian River even the flows under D1610 would provide protection against cold-water depletion as it reduces flows at the same rate as the RRBO and proposed Flow Schedules.

In the DEIR section 4.2 Water Quality; it is states that *“Under the proposed project, salmon and steelhead would benefit from colder water with more dissolved oxygen during summer months”*. As we explained above and the available Lake Mendocino temperature profiles by SCWA confirm this benefit does NOT exist in every year, only in low storage or drought years when existing D1610 flows are reduced to preserve the cold-water pool. It should also be noted that in the Upper Russian River Steelhead Distribution Study (SCWA, 2003) that the greatest abundance of juvenile steelhead from Ukiah to Cloverdale was in the canyon reach where water temperatures observed in the study ranged as high as 23⁰ C. The Steelhead seemed to be more attracted to the habitat complexities in that reach than the colder water upstream complicating the Petitions logic that reduced flows benefit habitat. Again reserving 100% of the water volume in Lake Mendocino saved from reduced releases will protect against Lake releases warming downstream temperatures or lowering DO.

The Annual Biological Opinion reports from 2011 to 2015 provide water quality data primarily collected in the Lower Russian River and Estuary. All those reports are attached to our comments. These reports show that water quality when the river mouth closes at reduced flows degrades water quality for Nutrients, Temperature and Dissolved Oxygen with far less periods of improved water quality. What is most clear from the data collected by SCWA is that when the mouth closes, nutrients and chlorophyll – a both spike upwards as we have hypothesized since 2003. Deliberately creating a closed Estuary traps abundant nutrients and slows water velocity to zero, which creates better eutrophic conditions than when the River mouth is open. In the periods of extended closure we do not see stabilization occurring for weeks after closure and at some locations conditions never improve.

2. Proposed Flows will not protect the beneficial uses of the Russian River such as REC-1, MUN, COLD, EST, and WILD

The singular focus on reducing flows to met Project objectives has resulted in erroneous DEIR conclusions such as stating that there is “no mitigation available” for increasing biostimulatory substances in the estuary and state it’s a “significant and Unavoidable” impact (DEIR, Impact 4.3.3). This should be a warning sign that this solution is not a good approach. Increases in biostimulatory substances can lead to fish kills just like the one that killed thousands of juvenile Steelhead in Pescadero lagoon on the San Mateo Coast from low dissolved oxygen from decaying organic matter. Biostimulatory conditions means we will produce better conditions for plants/ algae than fish. If the Proposed Flows are intended to improve habitat conditions, how can that be true when they could lead to deadly conditions for the very fish the RR BO is trying to save? The logic here is does not add up to a certain pathway to improving habitat conditions.

Fish Flow DEIR:

Estuary EIR Impact 4.3.3: The change in the barrier beach breaching operations during the lagoon

management period could adversely affect the water quality due to increased nutrient or indicator bacteria levels in the Estuary. (Significant and Unavoidable)

It's clear the Proposed Flows in the DEIR create a real conflict between the Clean Water Act and Endangered Species Acts. As the North Coast Basin Plan prescribes water quality standards designed to protect beneficial uses, the standards for Temperature, Biostimulatory Substances and Dissolved Oxygen were determined based on protecting key life stages for Steelhead Trout, Chinook salmon and Coho Salmon. Like the example of biostimulatory substances above, this represents a violation of a water quality standard intended to protect water quality from eutrophic conditions that harm fish. Ignoring this information or calling it unavoidable just avoids the hard work of coming up with Project alternatives.

The conflict that is created between the Clean Water and Endangered Species Act's should give great pause to the Division of Water Rights that other alternatives must be pursued to achieve the Project Goal of improving salmon habitat. If the DEIR claims that the Project is improving habitat but at same time admits it will lead to violations of carefully prescribed Water Quality Standards intended to protect their habitat, this conflict must be resolved by the use of Project alternatives.

3. Climate Change will exacerbate existing impairments under Proposed Flow Schedules with no mitigation

Climate Change Risk & Adaptation

"Climate change adaptation in California is being addressed in many areas; from cutting-edge construction to grant guidelines, every sector and every lever for change in government has to be a part of the strategy." (Safeguarding Ca, 2016) Climate Change predictions issued by US EPA, California Resources Agency and Department of Fish and Wildlife all indicate the primary impacts from climate change are increasing air and water temperatures, sea-level rise and changes in amounts and timing of rainfall. The proposed reduction in flows increase climate risk to ESA listed species in each of these impact categories. Increased air and water temperatures combined with flow reductions will increase existing violations of temperature water quality standards intended to protect ESA Listed fish in the Russian River. Expected increases in water diversions due to higher air temperatures and resulting in increases in crop ET values will result in a losing stream more often. This would reduce the buffering effect on water temperatures from groundwater seepage into the river reducing thermal refugia during summer and length of the river that meets water quality standards for temperature. An increase in stream temperatures not only impacts ESA listed fish directly, higher temperatures act to also reduce prey items that further reduce habitat conditions.

Increases in sea-level rise will negatively impact the proposed flow reductions ability to eliminate breaching of the sandbar at the Russian River mouth. The Petition and Project DEIR state that flow reductions will help them create a closed Russian River estuary, which is a goal of the requested changes in the petition. Higher sea levels will produce more frequent sandbar overtopping events through wave action that will increase the need for mechanically breaching the sandbar for flood control purposes. Sea-level rise will also result in more salt-water intrusion into the Russian River Estuary that will degrade water quality for ESA listed species for weeks, according to the Project DEIR. The Petitions and Project DEIR ignore the need to address the increasing climate variability reflected in changes in the amount and

timing of rainfall. As we expect to see both bigger storms and longer droughts under climate change, the proposed flow reductions do not mitigate those impacts in the proposed flow schedules. In the driest years when ESA listed fish populations will face the most severe stress, flows are restricted severely when listed species need to most help. If the goal of the RRBO, Petition and Project DEIR is to improve habitat conditions then why are we proposing greater flow reductions in the DEIR instead of less to help them endure the harshest conditions?

Climate Change Mitigations in DEIR for Listed Species:

The biggest issue with the Petitions and DEIR is the lack of mitigations for Climate driven impacts such as higher max, min and average air temperatures. Although the DEIR lists many of the predicted impacts from Climate Change, the DEIR did not evaluate how the changes in weather will impact Project alternatives. In the Project DEIR section 4. 8-10 they discuss Sea Level Rise and various Climate driven issues but only evaluate possible impacts from increases in GHG Emissions from reservoir operations but not how increasing air temps combined with the reduced flows will affect water temps and salmon habitat. There is no discussion or evaluation of possible cumulative impacts from the impacts of the requested changes in the Petitions combined with climate change impacts. The issue of algal blooms and eutrophic conditions in the context of requested Flow reductions and Climate Change should have had a thorough evaluation since the two combine to dramatically increase potential for negative impacts on salmon. Increasing maximum and minimum air temperatures due to Climate Change will exert a stronger effect on water temperatures with less flow, as less flow would increase the power of solar radiation.

4. Proposed Flows might not meet goal of “improving habitat conditions” stated in the RRBO and Project DEIR and potentially harm ESA listed species

Lowering the flow would limit the habitat area of riparian vegetation and all aquatic species.

In the DEIR the Upper Russian River Habitat Model states that reducing flows would improve rearing conditions for juvenile steelhead. This conclusion conflicts with various reports even some produced by SCWA in recent years that show no loss of habitat at higher flows.

Figure 4.3-3 (Steelhead Juvenile Rearing Habitat) shows that weighted usable area, WUA in square meters, increases as flow increases in the Upper River. Under Baseline Conditions, the WUA is high. Under proposed flows, the WUA is much lower. This graphic helps demonstrate that stream velocity is NOT a factor in limiting habitat area.

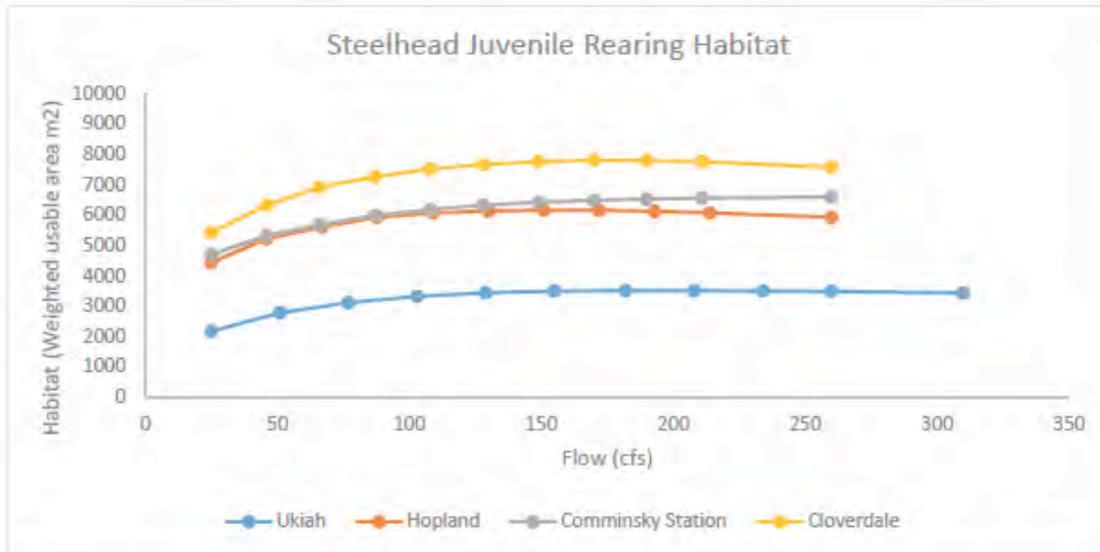


Figure 4.3-3. The estimated habitat (weighted usable area, WUA, in square meters) for steelhead juveniles at Ukiah, Hopland, Comminsky station, and at Cloverdale based on River2D. Flow is the flow that occurred in each reach.

Other issues are also must be considered.

1a. Page 4.4-13: “Riparian plant communities often show abrupt changes in species composition along stream banks due to differing preferences of seasonal water levels.” Therefore, changing the water levels abruptly would change the level of soil saturation and cause certain valuable riparian plant communities such as White Alder Riparian Forest to fail to establish. This would leave the wetted margin without suitable shade to cool the water, provide habitat for spiders and insects, and to provide a source of leaf litter to benthic invertebrates in the river?

1b. Lowering the flow would decrease the size of habitat and range of all aquatic species, including endangered species, and species of concern.

(Page 4.4-54): **“Under FESA, habitat loss may be considered to be an impact to the species.”** Under Section 15065 (a)(2) of the CEQA Guidelines, a project is deemed to have a significant effect on the environment if it would “substantially reduce the number or restrict the range of an endangered, rare, or threatened species. As a result, impacts to the listed species or their habitats will usually be considered significant and would require mitigation.

(Page 4.4-61): “Proposed Fish Flow Project would be considered to have a significant impact associated with biological resources if it would interfere substantially with the movement of any native resident or migratory fish or wildlife species.”

I believe the Project would limit the movement of Western Pond Turtles (a Species of Special Concern) and other species.

Appendix E shows photographs of locations on the river at various flows, and they all show that the higher flows provide more habitat for fish! Some side channels would get disconnected from the main stem and isolate populations of fish, even drying out and killing them in places.

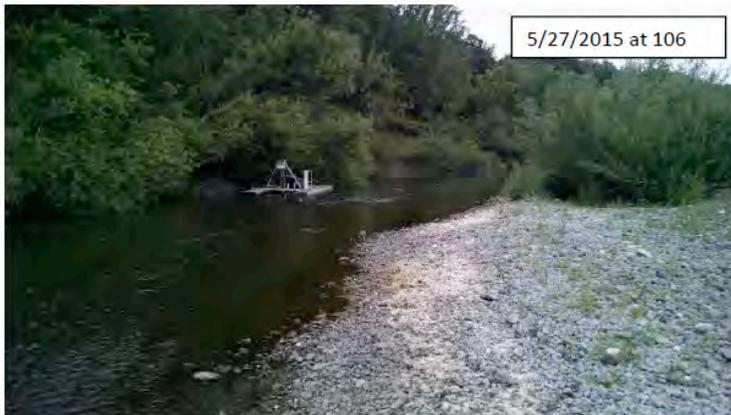


Figure 10 A series of photos of the Russian River taken downstream of Mayakama Creek taken on May 6, 2015 at 157 cfs and on May 26, 2015 at 106 cfs.

Below is a photo that I took on September 10, 2016 under Alexander Valley bridge to investigate a report of an isolated pool with hundreds of small fish in it. They could not return to the main stem, and the warm weather was warming up the water, and drying up the pool. I identified the fish as Hardhead and Fathead minnows, and they weren't Steelhead. The water was approximately 69 degrees.



1c. With the Proposed Project, the flow of the river would be limited, even during the wettest rainy seasons. The potential high spring flows aren't allowed to rise up into the **floodplain**, which would create a great amount of potential habitat for increased salmonid feeding, production and population booms.

During high water, topsoil, gravel and woody debris are washed into new sites downriver and below ground, fostering new habitats and new plant communities. The new habitats blend with existing ones, from mature cottonwood forests to grasslands, to create a patchy mosaic.

Studies have shown that gravel floodplains are the most biologically diverse and abundant habitats in the world, and require seasonal flooding to maintain structural diversity and wetted habitat for fish. This floodplain is the matrix for a very high production of invertebrates, which are the primary food source for young steelhead and salmon. (Hauer et al. Sci. Adv. 2016)

Over 100 years of gravel mining and channelization have led to a river that is 70-80% smaller due to the elimination of former meanders and sloughs and connected wetlands according to the ISRP and DEIR. The NOAA Fisheries graphic below of the Middle reach from Healdsburg to Forestville is a great example of how past actions have severely constricted and simplified the river channel and reduced the area it can access. This same condition is typical of the Ukiah Valley to Hopland reach and through the entire portion of the River in Sonoma County (ISRP, 2016). The channel incision noted in the graphic below has also worked its way up tributaries and dewatered the local groundwater tables affecting the level of groundwater seepage to the river. The channel incision lowering groundwater tables coupled with a very high density of stream diversions along the edge of the river have created a losing stream in many years (ISRP, 2016). Years of controlled flow out of dams on the Russian River has reinforced the narrow, channelized and incised profile, which offers very little habitat complexity. If the river was allowed to spill into the floodplain during major events, the gravel could be re-distributed to make more natural, complex features. Under SCWA's proposed Hydrologic Index, even the wettest years, the summertime flow would get cut to 105 cfs in the upper river, and 70 in the lower river. Artificially narrowing the river is deleterious to riparian habitat along with the cumulative impacts of incision and channelization. If

SCWA allowed the river to stay as high as 300 cfs in the spring, it would engage that edge habitat and create rich wetted margins of riparian vegetation habitat that would allow out-migrating steelhead and Coho to bulk up before moving to the estuary to prepare for it's ocean life cycle.

The current state of riverbank habitat along the Russian river is inadequate to sustain its ecosystem services. The cumulative impact of various consequences of human development have vastly reduced the extent of native riverbank vegetation and negatively altered river processes that provide ecosystem services. Existing habitat is fragmented and often too narrow to provide adequate functionality (Hilty 2004). The loss of habitat in our watershed reflects the greater trend in California of exchanging loss of riparian ecosystem services for more houses, shopping centers, vineyards, roads and other forms of development. About 90% of riverbank habitat in California has now been lost (Point Blue 2014). In the Russian river watershed alone, 75 percent of riverbank habitat between Healdsburg and Wohler Bridge has been lost since 1942 (NOAA Fisheries, 2014).

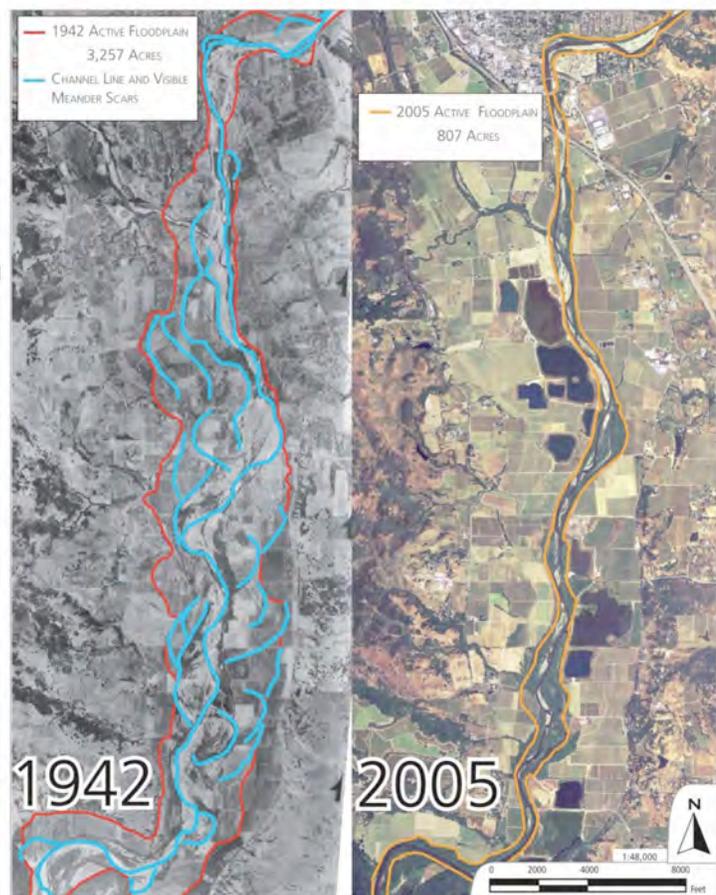
Middle Reach

1942

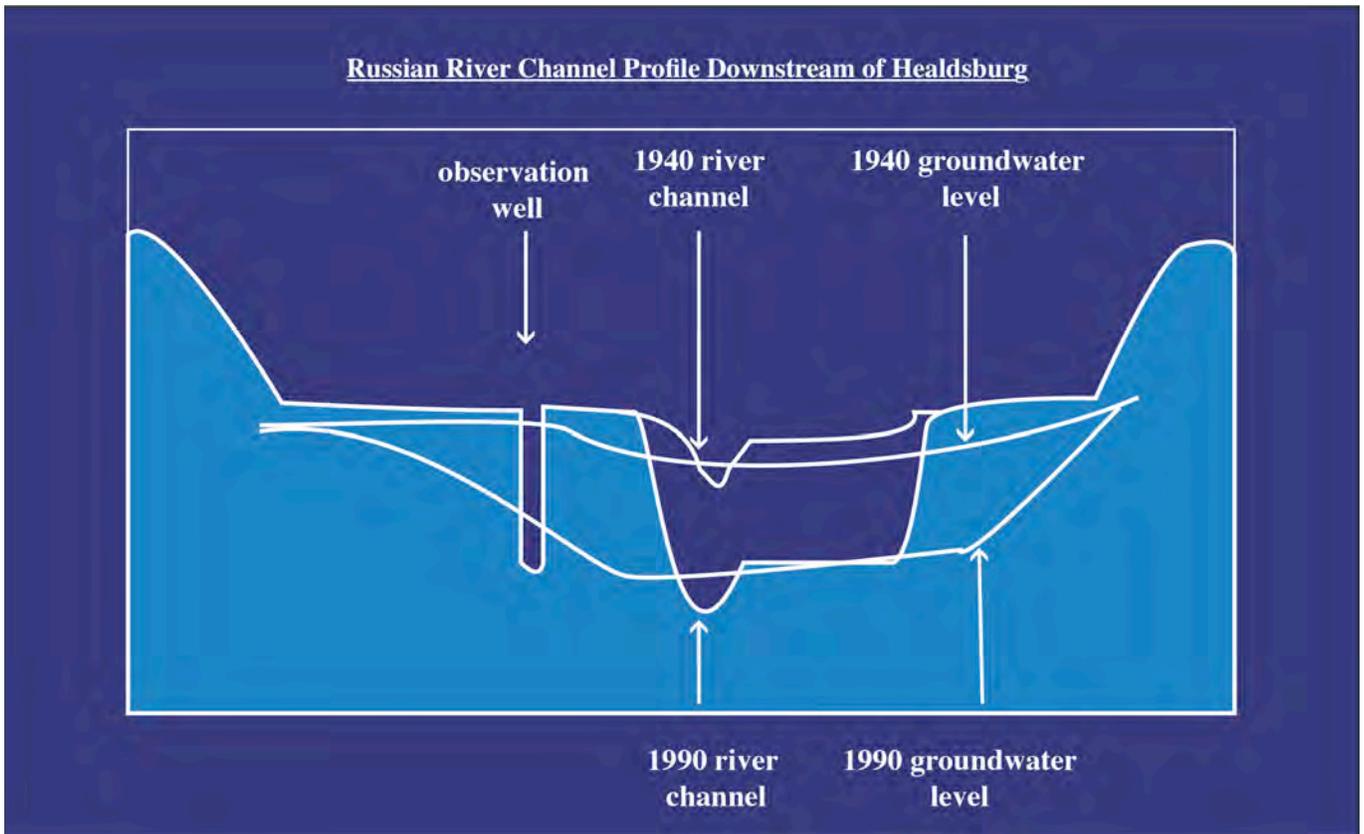
- **3,257 acres** active floodplain
- Sediment load deposited on **floodplain**
- **Channel migrated** across floodplain as point bars built up and cut banks eroded

2005

- **807 acres** active floodplain
- Sediment load deposited on **alternate bars** within the channel
- **Channel confined** to a single straightened path



Graphic of Middle Reach of Russian River, Healdsburg is at top and Forestville at bottom, NOAA, 2014



Cross-section view of Middle Reach of Russian River showing groundwater loss and channel narrowing and incision which eliminated all connected wetlands and floodplains that are critical to salmon. (E. McEnhill, 2016)

This loss of habitat also reflects a similar regional trend of habitat loss. The Western United States experienced a net loss of 374,600 acres of wetland habitat between 1982 and 1987, which was 5.7 percent of the total wetland area of the region at the time. Much of this habitat loss included conversion of riverbank habitat to other uses. Some of these uses include agricultural diversion, water diversions, construction of levees and flood control structures, construction of dams and reservoirs, excessive livestock grazing, and urbanization (CA Department of Fish and Wildlife 2014). Riverbank habitat loss is a national environmental issue of concern, but it represents a particular threat in California as there is so little original habitat left.

As mentioned earlier in the background section the concept that the dramatic geomorphic impacts from past human activity has severely limited the flow habitat relationships. All the cumulative impacts to date can not be improved by reducing flows since the habitat is so degraded flow reductions would further degrade the amount and quality of habitat. The reliance of the DEIR Upper Russian River Habitat Model on other reference streams that have not experienced the level of incision or channelization is a major flaw in the modeling exercise and results. Further that model mostly relied on data from streams in the Sierra Nevada not coastal streams, which ignores the profound differences in climate, hydrology and fact that the Russian River has no snowmelt to buffer temperatures.

1d. Low Flow in the late spring / early summer months would prohibit some salmonids from emigrating to the estuary to begin smoltification, as recommended by the Biological Opinion (RRBO, 2008). These

fish need high flows to help trigger environmental cues to begin out-migration and the proposed Flow Schedules do not provide any increase in flows while the RRBO flows do increase flows from 150 to 185 in April and May to improve conditions during the outmigration life stage. The increased flows in late spring would also engage side channels and alcoves on the downstream ends of gravel bars which offer more robust feeding opportunities than the mainstem due to lower embeddedness levels in lower energy stream margins.

Lowering the flow would limit juvenile steelhead's feeding opportunities.

Steelhead need fast-water feeding areas and/or high food abundance for growth.

In a 2003 study by SCWA biologists titled "Upper Russian River Steelhead Distribution Study", the biological team found that the biggest two factors in location of Steelhead were habitat type and temperature. The study did not say anything about flow being a factor for habitat value in the summer months. They noted that most of the summer-rearing steelhead were observed in fastwater habitats in the Canyon reach of the river, with maximum water temperatures of 22 degrees Celsius. These temperatures were above the 20.5C suitable temperature condition for young steelhead; however, steelhead observed during Russian River dive surveys appeared healthy and vigorous, and not stressed or lethargic from high water temperatures. These fish preferred the riffles and habitat complexity that the boulders, variable bottom substrates, pools, and fast, cool water offered in the Canyon reach between Cloverdale and Hopland. The river has the highest change in elevation here, and there is a direct correlation to habitat type and abundance of steelhead, as seen in Figures 13 and 14 in the document. Most steelhead were observed in fastwater habitats located in the lower two-thirds of the reach where the gradient is relatively high. Steelhead numbers were zero or very low in upper segments of this reach where the habitat was primarily flatwater.

In another literary source: Better Trout Habitat, 1991, by Christopher J. Hunter:

Pg. 26: "All salmonids begin their lives in relatively shallow, slow-moving water and gradually move to deeper, faster water as they mature. The shift to deeper, faster-moving water is largely related to the amount of food that is regularly carried past a station by the higher-velocity waters. However, maintain a station in a swift current is not the best use of a trout's time and energy. Feeding focal points occur in two distinct water types:

In Shear Zones, where a swift water mass flows next to a slower water mass. This allows trout to be close to currents.

In Eddies.

Pg. 33: Trout habitat is dependent upon adequate water flows. What appears to be a dry side channel at low flow may provide excellent juvenile-rearing habitat at higher flows.

Growth occurs primarily in spring, when fast water is available and more light is available. Only fast-water riffles, and pools immediately downstream of them can support steelhead. Warmer water presents a food problem, rather than a physiological threat. (Hunter)

SOURCES:

Cook, David, Upper Russian River Steelhead Distribution Study, Sonoma County Water Agency, 2003

Hauer et al. An Ecosystem's Lifeblood, Flowing Through Gravel
Science Advances, 2016

Hunter, Christopher J., Better Trout Habitat, Montana Land Reliance
1991

Changes in RRBO to DEIR Flow Schedules benefit water supply and more than they improve habitat

The recommended flows in the RRBO result in flow reductions in the period from June to October in the Upper Russian River upstream of Dry Creek. The proposed flow schedule in the DEIR and Petitions reduces flows compared to the RRBO flows in every month of the year. This difference in flows between the DEIR and RRBO flows is significant as it results in a difference of almost 30,000 acre feet of water, which a lot of potential SCWA customers would like to put under contract. Since this is such a large difference between the recommendations of the BO which is a Federal mandate and the subject of that mandate we believe this will impact the productivity of the River all year, rather than just summer months. The difference between RRBO and current D1610 flows is much smaller 14,000 acre-feet of increased storage, leaving much more water throughout year in the River. The difference in storage from comparing D1610 to Flow Schedule 1 is a stunning 43,000 acre-feet equating to the biggest shift in flows in over 100 years. As all the computer models and gravel bar biology discussions (RRBO) regarding flow are rarely if ever 100% correct, we will be requesting the Division of Water rights take action in final decision to encumber this now unallocated water with a water right to prevent it being sold or put under contract so that it helps benefit fish by maintaining a higher lake level which will protect the cold water pool. If it is not protected it will be put under contract which will work against the project Objectives and goals of the RRBO by ensuring that Lake storage is minimized contrary to the goals of the Petitions. We urge you to take a hard look at the large difference between the RRBO recommendations for flows and the DEIR and Petition flows as we still have no hard evidence that current D1610 flows are limiting habitat. We do know that this difference in flows would free up a lot of water for sale and SCWA is in the water sales business.

The Project DEIR claims that the Proposed Flows and associated schedule would create more habitat for steelhead and Chinook fry in summer months, but actually the fish have already grown enough into juveniles that seek deeper, faster water by May 1, the projected start of Proposed Flows each summer. The juvenile Chinook may have already started migrating out to sea by then.

In a SCWA study from 2003 entitled, "Upper Russian River Steelhead Distribution Study", their biological team found that the biggest two factors in location and habitat values for Steelhead summer rearing were habitat type and temperature. The study did not say anything about flow or stream velocity being a factor for habitat value in the summer months. They noted that most of the summer-rearing steelhead were observed in fastwater habitats in the Canyon reach of the river, with maximum water temperatures of 22 degrees Celsius. These fish preferred the riffles and habitat complexity that the boulders, variable bottom substrates, and fast, cool water offered in the Canyon reach between Cloverdale and Hopland. The river has the highest change in elevation here, and there is a direct correlation to habitat type and abundance of steelhead, as seen in Figures 13 and 14 in the document. Further downstream in the Alexander Valley and Healdsburg reaches of the Russian River, the water warmed up to 25 and 24 degrees Celsius, respectively. Prolonged exposure of steelhead at these temperatures may result in behavioral changes or mortality. In addition, that part of the river showed a

predominance of flatwater, with very little habitat variability, which contributed to almost no steelhead observations. Again, flow was not mentioned as being a contributing factor.

The minimum flow in the river is too low for most species of wildlife. Depending on the amount of rainfall and the proposed Hydrologic Index, the flow in summer could be cut to unhealthy levels. It would limit their habitat area; water would warm up and get choked by Ludwigia and algae (toxic algae included). On Page 1-15 of the Project DEIR it states: "Changes in minimum instream flow requirements could result in a violation of water quality standards or waste discharge requirements or otherwise degrade water quality relating to biostimulatory substances in the Russian River (Impact 4.2-4). Elevated nitrogen and phosphorus concentrations that exceed United States Environmental Protection Agency (USEPA) criteria, along with depressed and supersaturated dissolved oxygen concentrations observed under Baseline Conditions would likely continue under the Proposed Project."

5. Proposed Flows will impede commercial and private navigation on the currently navigable mainstem Russian River

SCWA Recreational study in the Project DEIR appendix C and Photos in Appendix C mislead readers to the conclusion that proposed flow reductions will not harm navigation or recreation. In conversations with all river outfitters on the Russian River, all suffered significant losses in bookings and profits due to customers having to drag boats in 2009, and 2012 compared to 2010 and 2011 when flows were well above 100cfs most of summer. In contrast the business loss was even greater in 2014 than 2009 and 2012 as flows were further reduced. In 2015 the toxic algae issue made it hard to determine whether low-flows were harming business since river recreation ground to a halt once toxic algae hit the media in August of 2015. It should be noted that in 2016, with flows higher than DEIR or RRBO flows business rebounded despite toxic algae warnings. Certainly having Toxic algae concentrations in 2016 that were 208 times lower than 2015 helped reduce that impact.

The newspaper articles are grossly misleading as Riverkeeper and the Outfitters worked with SCWA to blunt the impact of the shallow river and were not really portraying the reality of boating conditions. In fact several outfitters confided to Riverkeeper that they were concerned what they said might be used against them. They were correct as what was supposed to be strictly for PR and preserving outfitter business was turned into a piece of evidence by SCWA realizing the worst fears of Linda Burke and other outfitters. Those articles were a PR effort in conjunction with Sonoma County Tourism Department and SCWA PR staff to soften the blow of reduced flows and the 2008 recession and painted an overly rosy picture of the river's condition despite a different reality. As Linda Burke of Burke's Canoe Trips points out in her Protest letter, 2009 was the first year of reduced flows so we had no idea of how it would affect business at that time. Other outfitters such as Johnson's Beach have lodged similar complaints in their Protest letters as well. Since 2009, the reduced flows have caused Burke's Canoe Trips to lose families who have rented canoes for generations telling Linda, "if this is the new normal on the river we're done getting out and dragging our canoes" or similar comments. Back in 2009 customers had no idea what to expect but once they experienced the reduced flows below 100cfs, most have stopped renting canoes on the Russian River as a result of the greatly diminished experience. Including those articles in the DEIR Recreation Study is simply misleading

Russian River is a gravel bed river with alternating gravel bars and a very uneven riverbed elevation that usually establishes the deepest channel on the outside bends of the river where overhanging vegetation exists and prevents boat access. These deep channels are usually faster water and the overhanging vegetation causes boats from canoes to inflatable rafts to tip over so boaters avoid those areas forcing them to the shallower center of the River where lowered flows affect navigation.

In the DEIR Appendix C Russian River Recreation Assessment 2009 by SCWA the authors conclude that reduced flows due to that years Temporary Urgency Change that reduced flows had no affect on recreation. In that study they documented several canoe trips taken to informally survey boating conditions including two trips that RRK was included on. It should be noted that those group trips in June and later in September were led by RRK and SCWA with highly experienced boaters who are able to “read” the surface of the river to lead the group down the deepest channels in the riverbed.

In reviewing the pictures and stream cross section in DEIR Appendix C we take note of several issues in the photos and cross sections.

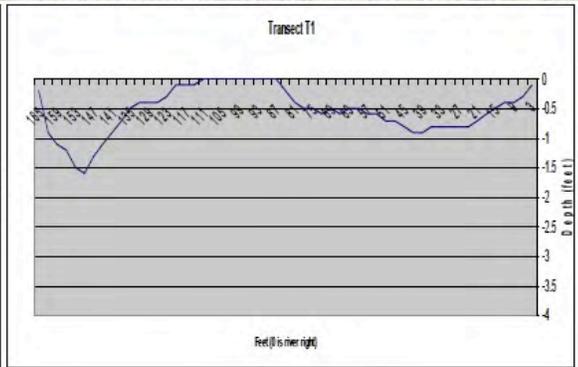
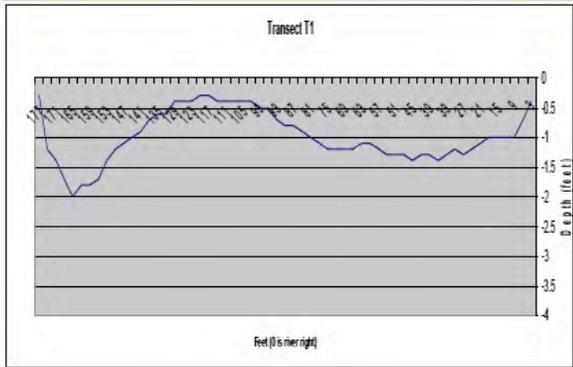
- All photos at or above D1610 show a wider wetted channel, fewer mid-stream obstructions and a deeper channel more centered in middle of channel that equates to unimpeded navigation.
- All photos at RRBO, DEIR flows or lower show far greater mid-stream obstructions, more exposed gravel bars and in many cases the deep channel shifts under trees and brush which all impede navigation compared to D160 flows.
- One exception is Healdsburg at Memorial Beach (Figure 12, App C) which has a concrete dam sill that backs up gravel behind the sill resulting in a broad flat stretch of river that makes it difficult to see any changes in the range of flows pictured.
- Missed the riffle crests in many cases where shallowest point is Healdsburg Memorial Beach to Wohler Riffle 2 Transect T1 is an example. In the accompanying photos you can see transect T1 (left picture) is measured below the upstream riffle crest which is about 20-30 feet upstream and is visibly shallower.

A perfect example of how the SCWA Recreation Survey doesn't always describe real world conditions for outfitter clients is illustrated by the SCWA Survey cross section and pictures at Rio Linda to Healdsburg Riffle 2. In the SCWA Survey photo and data they state there is no problem with navigation. In the photo below it's obvious that real world outfitter customers would disagree with the SCWA survey conclusions as they are clearly not navigating their canoe but pushing it to get over the shallow conditions one week after the survey data was collected in 2009 during BO flows.

RioLinda to Healdsburg Memorial Beach – Riffle 2

June 16, 2009

August 4, 2009



RRR to Healdsburg 142cfs
 RR to Healdsburg 145cf
 RR near Guerneville 196cfs

76cfs
 69cfs
 71cfs

Page 1345, Project DEIR: Taken August 4, 2009 – note island far side



Same location on August 15, 2009, navigation is being impeded

6. Proposed Flows will cause significant negative economic impacts to businesses and residents in a low-income area of Sonoma County

As pointed out in several Protest letters from lower Russian River businesses, the flow reductions in recent years have changed the water quality in the River and harmed the river related businesses. When pollutant levels result in beach closures, it immediately depresses visitor numbers and outfitter parking lots are empty instead of full on weekends. While navigation is negatively affected by reduced flows, new customers sometimes replace former customers who decide to stop coming. This increases promotion and advertising costs to outfitters, as they have to spend more to attract new customers. Linda Burke of Burke's Canoe Trips told us that in 2012 to 2015 they have lost over 4500 repeat customers who have told her they are "done" with the Russian River as it is no longer offering the same experience they had enjoyed for decades.

When beach closures occur, everyone in the Lower Russian River loses business from hotels to restaurants to retail stores. As noted earlier in our comments our baseline conditions consist of several water quality impairments that will be exacerbated by reduced flows. The increases in biostimulatory substances are a precursor for toxic algae blooms and present the biggest threat. Beach closures related to indicator bacteria result in lost business but are not as harmful as the toxic algae issue. While it is difficult to know with certainty if reduced flows are a factor in toxic algae blooms, the flow reductions certainly create much more favorable conditions. When we had toxic algae result in several dog deaths in 2015 the San Francisco Bay Area TV stations all ran lead stories, as did all the local and regional daily newspapers two weeks before Labor Day. That led to empty beaches and parking lots all along the River that Labor Day and almost every business saw their business crash on the 2nd most popular weekend of the year.

One of the trends that we along with outfitters have observed is the Russian River is getting a reputation as a slow, shallow algae choked river. Adding toxic algae to that reputation, these perceptions persist for years or longer. The fear factor stoked by the TV sensationalism of the toxic algae issue will endure for years after each toxic algae outbreak leading to a serious impact on the lower River businesses. This is a big impact because most of the lower River communities are designated Disadvantaged Communities according to the 2010 census. Tourism drives the Lower Russian River economy and the Russian River drives tourism so the River's health has a large impact on economic activity.

7. Proposed Flows ignore superior environmental alternatives that would provide higher assurance objectives stated in Project DEIR and Petitions will be achieved with lower impacts

For the different Project Objectives the DEIR and Petitions ignored feasible alternatives to Flow Reductions such as:

Goal: Preserving Lake Mendocino storage and cold water pool

- Take action to stop unauthorized diversions in late spring and summer months to conserve storage.
- Place a water right for fish on 15,000 to 20,000 acre feet of the unallocated water or water saved by flow reductions with highest priority right Lake is maintained at higher level

- Enact mandatory conservation measures for all SCWA customers and diverters they have authority over and provide assistance to other diverters to increase water efficiency during low rain or drought years

Goal: Improve Fish Habitat conditions & reduce water quality impairments

- Provide increase in flows during April & May over Flow Schedule to increase wetted channel and cue fish to out-migrate to estuary
- Elevate flood prone structures in the Estuary to remove driver for reduced flows and manage estuary at higher elevation as recommended in the RRBO
- Provide for higher flows in the lower Russian River in the wettest years similar to the upper Russian River through the summer months when the sandbar rarely closes
- Provide higher lower Russian River flows during summer recreation months of June, July and August when the river mouth closes less frequently than September and October.

What can be done to resolve our Protest?

1. Reserve 15,000 acre feet of water and/or the volume of water saved from reducing flows (compared to D1610) under CWC 1707 dedication so it can be used to mitigate water quality impacts of reservoir depletion, climate Change and improve fishery habitat in droughts as well as ensure that the cold water pool is reserved and not sold or put under contract. This would provide a higher storage level in Lake Mendocino than flow reductions alone in many water years. Indeed this would help restrict more surplus water contracts that along with Climate Change threaten carry-over storage in Lake Mendocino. Reserving a “block” of water for fish and wildlife benefit is commonplace on many state reservoirs but not one drop is protected and reserved for fish on the Russian River. In order to ensure that the proposed habitat improvements of keeping late summer water temps below 70 degrees F downstream to Cloverdale are realized water must be reserved for the benefit of fish.
2. Petitioner must develop an anadromous salmonids management, monitoring and reporting plan, to be incorporated in its permit terms, to achieve conditions that enhance and protect anadromous fish. SWRCB, CDFG and NMFS must approve this plan. This plan must include a process for evaluation, every five years, of the efficacy of the new flow regime and overall management of the watershed by Petitioner insofar as they affect anadromous salmonids. The plan must also include a requirement that Petitioner post on its website and file with the SWRCB a report and a summary of its monitoring activities and its five-year evaluation. Once the SWRCB approves the Plan, Petitioner must implement it.
3. Petitioner must develop a water quality management, monitoring and reporting plan, to be approved by SWRCB, CDFG and NMFS and incorporated in its permit terms, to achieve conditions that will protect water quality throughout the watershed. This plan must require water quality management, monitoring and reporting on an annual basis. This plan must also include a requirement that Petitioner produce a summary report every five years of the effects of the new flow regime and overall management of the watershed by Petitioner insofar as they affect water quality. The plan must require Petitioner to post on its website and file with the SWRCB both the annual and five-year summary reports. Once the SWRCB approves the plan, Petitioner must implement it. This plan must include provisions equivalent to those for cyanobacteria in the May

24, 2016 Order granting a Temporary Urgency Change for the subject water rights. It must also include a reopener to incorporate measures when the State Water Board develops statewide standards for cyanobacteria, as described in the May 24, 2016 Order, ¶5.3.3 of the Preamble.

4. Petitioner must agree, as new permanent terms for the affected permits, to the incorporation of terms functionally equivalent to Terms 15 and 18 of WRO 2009-0034-EXEC. The permits must require Petitioner to annually update “identification of Russian River water users who are not subject to SCWA’S authority to impose mandatory conservation measures,” and to post daily notification to the public on its website of whether the Russian River is being supplemented by project water.
5. Petitioner must fund, as a condition of its permit terms, a Russian River Watermaster and supporting staff. The SWRCB must appoint the Russian River Watermaster and set the budget for the Watermaster’s activities, which shall be not less than \$1 Million annually. The principal purposes of the Watermaster shall be to monitor and investigate diversions on the Russian River between Coyote Dam and Jenner, to initiate enforcement actions against unauthorized diversions, and to develop water use efficiency programs for water users in the Russian River watershed. The Watermaster must have the authority to view gage data from existing gages that water users employ as the basis for reports of water use to the SWRCB. The Watermaster must also have the authority water require additional gaging to support investigation and enforcement activities. The permits must require the Watermaster to make annual reports to the SWRCB, and require the SWRCB to publish these reports on its website. Each annual report must review the reporting of water use by water users on the river and estimate monthly stream depletions on a reach-by-reach basis.
6. The SWRCB must include, as part of its permit terms, reopeners that allow the SWRCB, following opportunity for comment and hearing, to modify the conditions of the water rights permits based on the results of the salmonid management plan, the results of the water quality management plan, and/or the findings of the Russian River Watermaster.
7. We would agree that the Russian River estuary is managed today in a manner that does not benefit Steelhead or Coho since the primary driver for the current estuary management is flood control, and not creating habitat for ESA listed fish. It is well documented in the RRBO and the Project DEIR and related documents that proposed estuary management has the real potential to result in adverse water quality conditions. In fact some of the annual report required under the RRBO and TUC Orders show that conditions are at their worst during periods when the river mouth is closed. During closure events temperature, nutrients, DO and Chlorophyll –a all get worse – not better as the RRBO intended, this should get us thinking about alternatives to current Estuary management. We have attached reports required under the Biological Opinion from 2010 to 2015 as we want to make sure SWRCB has this data for its review.
8. The water quality degradation demonstrates the lack of certainty in their approach to solely focus on flow reductions and ignore elevating structures that would eliminate the need for mechanical breaching and shift the primary management goal to improving habitat for ESA listed species. A similar problem with sandbar breaching negatively affecting ESA listed fish habitat existed in the Carmel River Estuary near Monterey. Several projects were completed including

relocating a road that led to elimination of mechanical breaching. In the Russian River estuary elevating a couple dozen structures and Highway 1 would eliminate the need for mechanical breaching of the sandbar. Require, as a permit condition, a study to determine the feasibility of elevating flood prone structures in the Russian River estuary to eliminate or at least reduce sandbar breachings at the rivers mouth. There is consensus that mechanical breaching is negative for salmon rearing habitat, although it should be noted that open conditions so produce better water quality than closed conditions. What we do not know is whether allowing a higher elevation in the Estuary would produce a better water quality conditions than current elevations. The reality of Sea Level Rise is that the highest impacts would occur in winter months when we have runoff and the highest tides of the year. The cumulative impact of Sea Level Rise and the negative affects of sandbar breaching in summer demand a different approach. Looking into the future, Sea Level Rise and the need to improve rearing habitat and eliminate breaching should lead to elevating the structures and as the Flood Control Agency SCWA should lead this effort which would allow far higher and more salmon beneficial estuary elevations that would engage more wetland rearing habitat. To address this issue, as a permit condition, study feasibility of elevating all flood prone structures in the Estuary to eliminate the need for flood control driven breaching to allow for estuary management strictly for ecosystem health. This would also address the cumulative impact of Sea Level Rise combined with the project and address the potential inundation issue when the river mouth closes. This would allow for a wider range of ecosystem management options and prepare for inevitable changes in Sea Level as well as future river flood event at winter high tides.

9. Condition all permits in the Russian River to require mandatory conservation when storage is low to eliminate the need to reduce flows when ESA listed fish need help in droughts. Currently only fish get their water allotment cut in droughts as reflected on the Petitions. When droughts hit or storage is low human uses must be reduced proportionately if the goal is helping fish.
10. We request an opportunity to re-vise and re-submit our Protest when Final Project EIR is certified since we do not have complete information since the primary project analysis is a DRAFT EIR. Often in Final EIR's substantive changes are made to mitigations, project descriptions and alternatives that might shift the content of our Protest. While we realize the Final EIR will be part of the record for the water rights hearings on the Petitions, changes in the Project might change our position and new alternatives would not be subject to our review in the context of this Protest. We call attention to the fact that the documentation submitted to support the Petitions is in fact a Draft EIR and so is not a final document at the time of this protest deadline on November 22, 2016. It is likely that the remaining process for the DEIR could result in substantial new information being introduced, or new alternatives being introduced that significantly affect the nature of the Petition or our Protest. As such we expect to be able to rely in the Final Fish Flow and Water Rights Project EIR in it's entirety along with all associated comments, responses and submitted or referenced documents to ensure due process and sound decision making. At the same time the science around ESA listed fish, water quality issues and the manifestation and understanding of Climate Change will shift and we expect some of those changes will be reflected in the DEIR moves to Final EIR. We therefore request the opportunity to revise and re-submit our Protest once the Final EIR is available for review.

11. Additionally, there are several water quality reports that will be available in less than six months that would greatly inform our comments and the impacts associated with reduced flows. One report was required under SCWA's 2016 Temporary Urgency Change Petition approved 5/4/16 that required the SCWA to produce a report by April 1, 2017 regarding all water quality data collected pursuant to Terms 5 & 6 during the term of the Order. Additionally two reports are pending from the North Coast Waterboard, the "Water Quality Monitoring report 2002 -2013" and the "Russian River Nutrient Study" both of which would provide critical data to inform our comments and properly evaluate the merits of this Petitions. These two North Coast Waterboard reports will not be available to the public until at least April 2017. As all these reports will provide valuable data on both post-drought conditions of 2016 and inform us about overall water quality and specifically Nutrients which are of great concern due to their affect on toxic algae production and dissolved oxygen levels for salmon. We respectfully request the opportunity to revise and resubmit our Protest once those reports are available for review.

Sincerely,



Don McEnhill
Russian Riverkeeper

References

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Wagner & Bonsignore Consulting Civil Engineers. 1999. North coast vineyard water demands per acre assuming a typical year, 700 vine/acre density. Table prepared for Dry Creek Water Users Corporation.