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Klamath-Siskiyou Wildlands Center

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July 11, 2017

North Coast Regional Water Quality Control Board
5550 Skyline Blvd., Suite A
Santa Rosa, CA 95403

Re: Comments on Draft Ag Waivers for
Shasta and Scott Rivers;
Order No. R-1 2017-0032 and
R-1-2017-0031

Dear Regional Board and Staff,

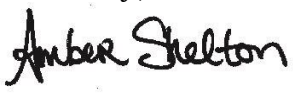
The Environmental Protection Information Center (EPIC) and the Klamath-Siskiyou Wildlands Center (KS Wild) appreciates the opportunity to comment on the draft Waivers of Discharge Requirements for the Scott and Shasta River TMDLs.

The Scott and Shasta Rivers provide important habitat for endangered salmon fisheries. The Scott River was historically a stronghold for both coho and Chinook salmon in the Klamath; however, now most of the premier spawning ground often dries up and remains inaccessible during Chinook migration and is often de-watered during juvenile salmonid out-migration. The Shasta River also held large runs of Chinook and coho salmon, even the imperiled Spring Chinook once spawned in the Shasta in large numbers. Now, because of dams and diversions, this largely cold water, volcanic spring-fed river becomes unusable through most of the summer.

EPIC and KS Wild supports the Karuk Tribe's comments and request that the draft Waivers for the Scott and Shasta Rivers *not* be approved and that the Regional Board modify the Basin Plans to include management programs, monitoring and reporting, and compliance with water quality objectives and Total Maximum Daily Loads. Additionally, Action Plans must be modified to include timelines with quantifiable milestones to ensure that water quality standards are being met into the future.

Thank you for considering our comments. Please include EPIC and KS Wild in future notices and updates regarding this matter.

Sincerely,



Amber Shelton
Conservation Advocate
Environmental Protection Information Center
amber@wildcalifornia.org

George Sexton
Conservation Director
Klamath-Siskiyou Wildlands Center
gs@kswild.org

Karuk Community Health Clinic
64236 Second Avenue
Post Office Box 316
Happy Camp, CA 96039
Phone: (530) 493-5257
Fax: (530) 493-5270

Karuk Tribe

Karuk Dental Clinic
64236 Second Avenue
Post Office Box 1016
Happy Camp, CA 96039
Phone: (530) 493-2201
Fax: (530) 493-5364

Administrative Office
Phone: (530) 493-1600 • Fax: (530) 493-5322
64236 Second Avenue • Post Office Box 1016 • Happy Camp, CA 96039

North Coast Regional Water Quality Control Board
5550 Skyline Blvd., Suite A
Santa Rosa, CA 95403

7 July 2017

Re: Comments on Draft Ag Waivers for
Shasta and Scott Rivers;
Order No. R-1 2017-0032 and
R-1-2017-0031

Ayukii Regional Board and Staff:

Thank you for the opportunity to comment on the draft Waivers of Discharge Requirements for the Shasta River TMDLs ("2017 Shasta Waiver") and for the Scott River TMDLs ("2017 Scott Waiver"). Unfortunately Staff is proposing to continue virtually unchanged the failed program begun with the 2006 Shasta and Scott Waivers, and carried over in the 2012 Shasta and Scott Waivers. Because the 2017 Shasta Waiver and the 2017 Scott Waiver fail to comply with the Non-Point Source Policy ("NPS Policy"), the North Coast Basin Plan ("Basin Plan"), and California's Anti-Degradation Policy, the draft waivers cannot be approved, and must be substantially modified to include management programs, monitoring and reporting, and the evaluation needed to achieve compliance with water quality objectives and Total Maximum Daily Loads ("TMDL"). We look forward to working with Staff in developing Waivers that comply with State and Federal Law, and can help restore endangered salmon fisheries.

I. Background

Salmonid stocks in the Klamath Basin continue to suffer an existential crisis. The fall Chinook run in the Klamath Basin in 2016 was the lowest since systematic surveys began in 1978. *See Summary of Scott and Shasta River Fish Data,* Attached as exhibit A. Fall Chinook in the Scott and Shasta Rivers was also very low, and coho and lamprey also show continuing declines over time. *Id.* The North Coast Regional Water Quality Control Board ("RWQCB") accepts that a primary cause of salmon declines is agricultural practices. Factors include 1) reduced shade; 2) tailwater return flows; 3) diversions and flow modifications, and; 4) impoundments. *See for example Basin Plan at 4-69; 4-70.* The Shasta has been listed pursuant to the Clean Water Act as impaired for dissolved oxygen ("DO") since 1992, and temperature since 1994. The Scott was listed for sediment in 1992, and temperature in 1998. Thus these critical salmon rivers

have failed to meet the water quality standards necessary to support salmon migration, and that are legally required, for well over 20 years.

TMDLs for DO, sediment, and temperature for these rivers were incorporated into the Basin Plan between 2005 and 2006. The first Waivers for non-point source discharges to the Shasta and Scott were issued in 2006. In 2011 the RWQCB amended the Basin Plan to include an implementation plan for the Shasta and Scott TMDLs ("Action Plan"). The Action Plan included a series of studies, plans, reports, and collaborative efforts intended to achieve compliance. The Action Plan includes a final compliance deadline of 26 January 2017, requiring that all discharges from riparian areas, and all tailwater discharges, comply with water quality objectives, TMDLs, and NPS Plan requirements by that date.

Yet all available data shows no meaningful progress towards compliance with water quality objectives and TMDLs. The available data shows no measureable trend for temperature in the Shasta or Scott. *See for example Summary of Scott River Water Temperature Data,* attached as exhibit B. And while data on sediment and DO in the rivers is sparse, no improving trend can be discerned for these impairments either. Thus for over 20 years since the impairment listings, and over 15 years since issuance of the first waivers on the Shasta and Scott, no meaningful progress on water quality has been achieved, and salmon stocks have continued their downward spiral.

Staff now proposes to continue the failed waivers for the Shasta and Scott virtually unchanged for another five years. This is not only bad public policy, it is illegal. At least two California Courts have rejected Regional Boards' refusals to provided meaningful regulation for agriculture. *See Asociacion de Gente Unide por el Agua v. Central Valley Regional Board,* (*"Agua")*(2012) 210 Cal. App. 4th 1255; *Monterey CoastKeeper v. California State Water Resources Control Board,* (*"Coastkeeper"*) (2015) No. 34-2012-80001324 (attached as Exhibit C). Yet staff ignores the requirements of the NPS Plan, the Basin Plan, California's Anti-Degradation Policy in the 2017 Shasta and Scott Waivers. To comply with State Law, and more importantly to make progress towards restoring salmon, the waivers must be redrafted to comply with each of these requirements.

II. The 2017 Shasta and 2017 Scott Waivers are Inconsistent with the Non-Point Source Policy

In 2004, the State Water Resources Control Board ("SWRCB") adopted the Policy for Implementation and Enforcement of Non-Point Source Pollution Control Programs. The NPS Policy has the force and effect of a regulation, and must be complied with for all non-point source permitting, including waivers such as the 2017 Shasta and Scott Waivers. *Coastkeeper* at 4. The NPS Plan has also been incorporated into the Basin Plan, reaffirming the requirement that RWQCB staff comply with its requirements. The Policy states:

> Before approving or endorsing a specific NPS pollution control implementation program, a RWQCB must determine that there is a high likelihood the implementation program will attain the RWCQB's stated water quality objectives. *NPS Policy* at 11.

The NPS Policy requires that waivers contain five "Key Elements." Waivers must: 1) explicitly address non-point source pollution in a manner that achieves and maintains water quality objectives; 2) include a description of management practices and program elements expected to be implemented; 3) includes a time schedule and quantifiable milestones designed to measure progress towards achieving water quality objectives; 4) includes sufficient feedback mechanisms to ensure that the program is achieving its stated purpose, and ascertain whether additional or different actions are required, and; 5) state the potential consequences for failure to achieve the programs objectives. *NPS Policy* at 11-15; *Monterey* at 4-5.

A. 2017 Shasta Waiver

While the 2017 Shasta Waiver mentions the NPS Policy in providing background on the issuance of the 2012 Shasta Waiver, the 2017 Waiver fails to conduct any analysis relating to the NPS Plan, or to make any demonstration that the Waiver complies with the NPS Plan. The 2017 Shasta Waiver fails to comply with the NPS Policy for at least three reasons.

First, the 2017 Waiver fails to address non-point source pollution in a manner that achieves and maintains water quality objectives. Specifically, the 2017 Shasta Waiver includes no analysis or determination "that there is a high likelihood the implementation program will attain the RWQCB's stated water quality objectives." *NPS Plan* at 11. And while the 2017 Shasta Waiver fails to conduct any quantitative analysis relating to water quality objective compliance, given the unchanging impairment in the Shasta, no meaningful analysis *could* conclude that continuing the existing program, as proposed by the 2017 Shasta Waiver, will achieve compliance with water quality objectives and TMDLs in this generation. The Shasta waiver program was first adopted in 2006. Essentially the same program—"focused" RWQCB requirements on a subset of farmers, including management practices and reporting, at the discretion of the RWQCB Executive Director— was carried over into the 2012 Shasta Waiver, and is proposed for another five years. During the prior ten years of waiver implementation, no measureable progress towards water quality objectives and TMDL compliance has been achieved, and salmon stocks continue to shrink. Rather than ensuring that water quality objectives and TMDLs will be met, the 2017 Shasta Waiver ensures that they will not. As such the 2017 Shasta Waiver is illegal.

Second, the 2017 Shasta Waiver fails to provide a timeline and quantifiable milestones designed to measure progress towards achieving water quality objectives and TMDLs. Instead the 2017 Shasta Waiver maintains an entirely discretionary program, with no milestones or timelines. And while the 2017 Shasta Waiver attaches

the Action Plan, which does include timelines and milestones, that Action Plan was adopted in 2011, and all the dates for deadlines and milestones have already passed. Thus rather than setting out deadlines and milestones, the Action Plan documents the failure of the 2012 Shasta Waiver, and now the 2017 Shasta Waiver, to meet the deadlines and milestones required by the Basin Plan.

Third, the 2017 Shasta Waiver fails to include a workable feedback mechanism. The NPS Policy requires monitoring, reporting, and analysis sufficient to evaluate progress, and to adjust where necessary. While the monitoring can be focused on management practices implementation—mere implementation cannot be substituted for actual compliance with water quality objectives. *NPS Policy* at 7.

The 2017 Shasta Waiver includes no meaningful feedback mechanism. Instead it provides only the possibility of reporting by dischargers, at the Executive Director's discretion. And while the Basin Plan (incorporating TMDLs) sets out specific, numeric standards to protect salmon, designated by reach of the river, and allocated by source, *See Basin Plan at* pp. 4-72 to 4-74, the 2017 Shasta Waiver includes *zero* discharge or receiving water monitoring. Thus any meaningful evaluation of the 2017 Shasta Waiver's contribution towards water quality objective or TMDL compliance is impossible.

The 2017 Shasta Waiver further fails to conduct any evaluation of the effectiveness of the feedback mechanism carried over from the 2012 Shasta Waiver. The Action Plan for the Shasta TMDLs includes numerous monitoring, reporting, and program development requirements for the RWQCB, diverters, dischargers, and State and Federal agencies. [1] The 2017 Shasta Waiver fails completely to evaluate the effectiveness of these feedback mechanisms—whether the plans and reports were completed and submitted, were as required by the Action Plan, whether RWQCB staff reviewed them, or if they were implemented or even considered by the RWQCB or the dischargers. Almost none of these reports are available on the RWQCB website, so evaluation by the public is problematic as well. Without any analysis of the effectiveness of the program in the 2012 Shasta Waiver, the 2017 Shasta Waiver cannot be consistent with the NPS Policy.

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[1] *See for example:* Basin Plan at 4-77 (farmer's Annual Reports); 4-78 (RWQCB Development of Monitoring Plan)(Ranch Managing Plans)(RWQCB Proposed Riparian Rules and Regulations by 2007); 4-79 (all riparian discharges in compliance with WQS and TMDL by 26 Jan 2017)(tailwater return flow management annual reports); 4-80 (RWQCB adopt tailwater prohibitions, WDRs or waivers)(compliance with all WQS and TMDL for tailwater discharges by 26 Jan 2017); 4-81 (diverters provide final report to RWQCB documenting dedicated cold water instream flows by 26 Jan 2012); 4-82 (where efforts to achieve DO and temp objectives inadequate as of 26 Jan 2012, RWQCB to recommend to SWRCB to seek modification to adjudication)(irrigators to achieve 50% reduction in DO demand u all minor impoundments by 26 Jan 2008); 4-83 (plan to bring Lake Shastina into compliance with WQS and TMDLs submitted to RWQCB by 26 Jan 2012).

B. The 2017 Scott Waiver

The 2017 Scott Waiver includes no mention of the NPS Policy, and fails to conduct any analysis relating to the NPS Policy, or to make any demonstration that the Waiver complies with the NPS Policy. As with the 2017 Shasta Waiver, the 2017 Scott Waiver is inconsistent with the NPS Policy in at least three ways.

First, the 2017 Waiver fails to address non-point source pollution in a manner that achieves and maintains water quality objectives. As with the 2017 Shasta Waiver, the 2017 Scott Waiver fails to conduct any quantitative analysis relating to water quality objective compliance, and given the unchanging impairment in the Scott, no meaningful analysis *could* conclude that continuing the existing program will achieve compliance with water quality objectives and TMDLs. As noted above, the Scott waiver program was first adopted in 2006. The same program—"focused" RWQCB requirements on a subset of farmers, including management practices and reporting, at the discretion of the RWQCB Executive Director—was carried over into the 2012 Scott Waiver, and is proposed for another five years. During the prior ten years of waiver implementation, no measureable progress towards water quality objectives and TMDL compliance has been achieved, and salmon stocks continue to shrink. Rather than ensuring that water quality objectives and TMDLs will be met, the 2017 Scott Waiver ensures that they will not.

Second, the 2017 Scott Waiver fails to provide a timeline and quantifiable milestones designed to measure progress towards achieving water quality objectives and TMDLs. Instead the 2017 Scott Waiver maintains an entirely discretionary program, with no milestones or timelines. And while the 2017 Scott Waiver attaches the Action Plan, which does include timelines and milestones, that Action Plan was adopted in 2011, and all the dates for deadlines and milestones passed between 2008 and January of 2017.

Third, 2017 Scott Waiver includes no meaningful feedback mechanism. Instead it provides only the possibility of reporting by dischargers, at the Executive Director's discretion. And while the Basin Plan (incorporating TMDLs) sets out specific, numeric standards to protect salmon, designated by reach of the river, and allocated by source, *See Basin Plan at* pp. 4-60 to 4-63, the 2017 Scott Waiver includes *zero* discharge or receiving water monitoring. Thus any meaningful evaluation of the 2017 Shasta Waiver's contribution towards water quality objective or TMDL compliance is impossible.

The 2017 Scott Waiver further fails to conduct any evaluation of the effectiveness of the feedback mechanism carried over from the 2012 Scott Waiver. The Action Plan for the Scott TMDLs includes numerous monitoring, reporting, and program development

requirements for the RWQCB, diverters, dischargers, and State and Federal agencies. [2] The 2017 Scott Waiver fails completely to evaluate the effectiveness of these feedback mechanisms—whether the plans and reports were completed and submitted, were as required by the Action Plan, whether RWQCB staff reviewed them, or if they were implemented or even considered. A monitoring plan for the Scott is posted on the RWQCB website, and was apparently developed in 2011. *See Scott River Watershed Water Quality Compliance and Trend Monitoring Plan.* However the 2017 Scott Waiver nowhere mentions the monitoring program, whether it was implemented, or any results of any monitoring that was conducted. Without any analysis of the effectiveness of the program in the 2012 Scott Waiver, the 2017 Scott Waiver cannot be consistent with the NPS Policy.

III. The 2017 Shasta and 2017 Scott Waivers are Inconsistent with Water Code Section 13269 and the Basin Plan

The TMDLs (allocating load consistent with compliance with water quality objectives) applicable to the Shasta and Scott rivers were incorporated into the Basin Plan in 2006. In 2011 the RWQCB amended the Basin Plan to include the Action Plans for the Shasta and Scott.

The California Water Code authorizes waivers only where they are both consistent with the applicable Basin Plan and in the public interest. *Water Code Section 13269, See also Monterey* at 25. The waiver must include monitoring "designed to support the development and implementation of the waiver program, including, but not limited to, verifying the adequacy and effectiveness of the waiver's conditions." *Id.*

A. 2017 Shasta Waiver

As noted above, the 2017 Shasta Waiver includes no discharge or receiving water monitoring. Instead any monitoring will be conducted solely at the discretion of the Executive Director of the RWQCB, and then only as to implementation of management measures. *See 2017 Shasta Waiver* at ¶ 11.

In contrast the Shasta TMDLs for temperature and dissolved oxygen provide specific, quantitative load allocations. Irrigation return flows are prohibited from increasing receiving water temperatures, surface flows temperatures must be reduced by 1.2 to 2.1 degrees centigrade at specific river mile locations, and detailed shade/solar heat requirements. Similarly the dissolved oxygen TMDLs set out specific percentages that dissolved oxygen demand must be reduced in specific river reach lengths to comply with water quality objectives.

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[2] *See for example:* Basin Plan at 4-65 (RWQCB to develop and take permitting actions to address shade removal; ED to report on status by 8 Sept 2009)(study plan re: hydrologic connection to groundwater by 8 Sept 2007); 4-67 (RWQCB to require Riparian Management Plans. Criteria for plans by 8 Sept 2008).

The 2017 Waiver is inconsistent with the Basin Plan and Water Code Section 13269 for at least two reasons:

First, the entirely discretionary pollution management elements of the 2017 Shasta Waiver bear no reasonable relationship to the waste load allocations set out in the Basin Plan. The waiver includes no data or analysis as to how the measures will ensure compliance with the waste load allocations. The program's implementation has been extremely limited since 2006 (23 of 150 high priority farms assessed to date, for example) and no quantitative analysis of the impact of that limited program to date, or the management practices implemented is articulated in the waiver. Given the lack of monitoring data, it is unclear how such an analysis could be conducted, and in any event receiving water data indicates that water quality impairment is unchanged. Finally, and perhaps most damning, is the 2017 Shasta Waiver's inconsistency with the final TMDL and water quality objective compliance deadline set out in the Action Plan. The Action Plan, and thus the Basin Plan, requires compliance with all water quality objectives and TMDL waste load allocations for a) all discharges associated with riparian land use activities, *Action Plan* at 4-79, and b) all tailwater return flows, *Id* at 4-80, no later than 26 January 2017. Thus to be consistent with the Basin Plan, the 2017 Waiver must include limitations sufficient to ensure compliance with standards for riparian and tailwater flows *immediately.* The 2017 Shasta Waiver fails completely to ensure compliance with the Basin Plan limits, both for the TMDL waste load allocations generally, and specifically for riparian and tailwater discharges, and is therefore illegal.

Second, the 2017 Shasta Waiver's discretionary monitoring, focused entirely on evaluating implementation of those few management practices the Executive Officer deems appropriate, cannot evaluate compliance with the TMDL waste load allocations imposed by the Basin Plan. The 2017 Shasta Waiver includes no receiving water monitoring, and no field evaluation, let alone the reach by reach sampling and analysis required to establish compliance with the TMDLs. And the 2017 Waiver specifically fails to require any sampling of riparian flows, or tailwater flows—flows required to comply with the standards in the Basin Plan six months ago. Because the 2017 Shasta Waiver fails to include monitoring sufficient to demonstrate compliance with applicable Basin Plan limits, it violates Water Code Section 13269.

B. 2017 Scott Waiver

As with the 2017 Shasta Waiver, the 2017 Scott Waiver includes no discharge or receiving water monitoring. Any monitoring will be conducted solely at the discretion of the Executive Director of the RWQCB, and then only as to implementation of management measures.

The Scott TMDLs for sediment and temperature provide specific, quantitative load allocations. For example, sediment load is allocated in tons/sq.mi.-yr, with reductions by percentages and sources. *Basin Plan* at 4-60.

Again as with the 2017 Shasta Waiver, the 2017 Scott Waiver is inconsistent with the Basin Plan and Water Code Section 13269 for at least two reasons:

First, the entirely discretionary pollution management elements of the 2017 Scott Waiver bear no reasonable relationship to the waste load allocations set out in the Basin Plan. The waiver includes no data or analysis as to how the measures will ensure compliance with the waste load allocations. Given the lack of monitoring data, it is unclear how such an analysis for sediment could be conducted. In any event receiving water data for temperature indicates that water quality impairment has been unchanged over the 10 year life of the waiver program. *See Summary of Scott river Water Temperature Data.*

Second, the 2017 Scott Waiver's discretionary monitoring, focused entirely on evaluating implementation of those few management practices the Executive Officer deems appropriate, cannot evaluate compliance with the TMDL waste load allocations imposed by the Basin Plan. The 2017 Scott Waiver includes no receiving water monitoring, and no field evaluation, let alone the reach by reach sampling and analysis required to establish compliance with the TMDLs. Because the 2017 Scott Waiver fails to include monitoring sufficient to demonstrate compliance with applicable Basin Plan limits, it violates Water Code Section 13269.

IV. The 2017 Shasta and 2017 Scott Waivers Conduct No Anti-Degradation Analysis, and Violate Anti- Degradation Prohibitions

In 1968, the State Board adopted Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California. Resolution No. 68-16 provides that existing high-quality waters must be maintained unless the state can show that "any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water, and will not result in water quality less than that prescribed in the policies." The policy also requires the "best practicable treatment or control of the discharge necessary" to assure the highest water quality "consistent with maximum benefit to the people of the State."

In 1990, the State Board issued Administrative Procedures Update (APU) 90-004, Antidegradation Policy Implementation for NPDES Permitting (July 2, 1990) ("APU90-004"), which provides guidance for implementing Resolution No. 68-16. APU 90-004 clarifies that an anti-degradation analysis must be done on a pollutant-by-pollutant basis. APU 90-004 specifically requires the Boards to compare the baseline water quality—which is "the best quality of the receiving water that has existed since 1968"—to the water quality standards for each pollutant. APU 90-004 at 4. It also clarifies that state anti-degradation policy completely prohibits any degradation in waters that do not meet water quality standards. Finally, APU 90-004 identifies specific findings that must be made before degradation of high-quality waters can be allowed. In sum, State anti-degradation requirements mandate that high water quality be maintained, unless degradation is justified based on specific findings. APU 90-004 at 4-5; *See also Monterey* at 5-7. And in no case may impaired waters be further degraded. *Id.*

Neither the 2017 Shasta or 2017 Scott Waivers conduct the required Anti-degradation analysis. Instead, both waivers employ circular logic to conclude that because the measures in the waivers might over time improve existing water quality, no analysis is required. The Court of Appeal has rejected virtually identical circular language included in a Concentrated Animal Feeding Operation WDR. *See Aqua* at 1280; 1260-61, 1271-72. As in *Agua,* and as in *Monterey,* continuing existing terms in the 2017 Waivers that resulted in degradation of water quality in the 2006 and 2012 Waivers triggers Anti-Degradation analysis. Because the 2017 Waivers fail to do so, they are illegal.

Thank you again for the opportunity to comment.

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FOR RUSSELL ATTEBERY

Russell Buster Attebery
Chairman

Exhibit A

SUMMARY OF SCOTT AND SHASTA RIVER FISH DATA
Data collected by CDFW and collaborators
Compiled/graphed by Riverbend Sciences (or by CDFW), 6/27/2017, for use by the members of the Klamath Tribal Water Quality Consortium.

The fall Chinook salmon run in the Klamath Basin in 2016 was the lowest since systematic surveys began in 1978, with only 27,353 fish compared to a long-term average of 127,013 fish (Figure 1). Fall Chinook numbers in the Scott and Shasta Rivers were also very low in the 2016 (Figure 2), though not quite as poor as in the rest of the Klamath Basin. The reliable long-term dataset for coho salmon escapement is much shorter, starting in 2007 in the Scott River and 2001 in the Shasta River (Figure 3). Coho salmon predominately follow a 3-year life cycle, so population trends can be viewed as three separate cohorts. In the early years of the record, there was one coho cohort in the Shasta and Scott sub-basins that was much stronger than the rest (i.e., 2001, 2004, 2007); however, it appears to have declined in 2016 in the Scott and in the past three generations in the Shasta (2010, 2013, 2016) (Figure 3). The Shasta River coho population is heavily influenced by hatchery strays, in part due to a change in hatchery practices which began in 2010 (Figure 3). Data on juvenile coho in the Scott River shows the dominant cohort declining in the most recent generation (2016) but an increase for the weakest cohort (2015) (Figure 4). In the Shasta River, all three cohorts of juvenile coho appear to be declining over time (Figure 5). Juvenile lamprey catch has also declined in abundance in recent years in both rivers (Figure 6).

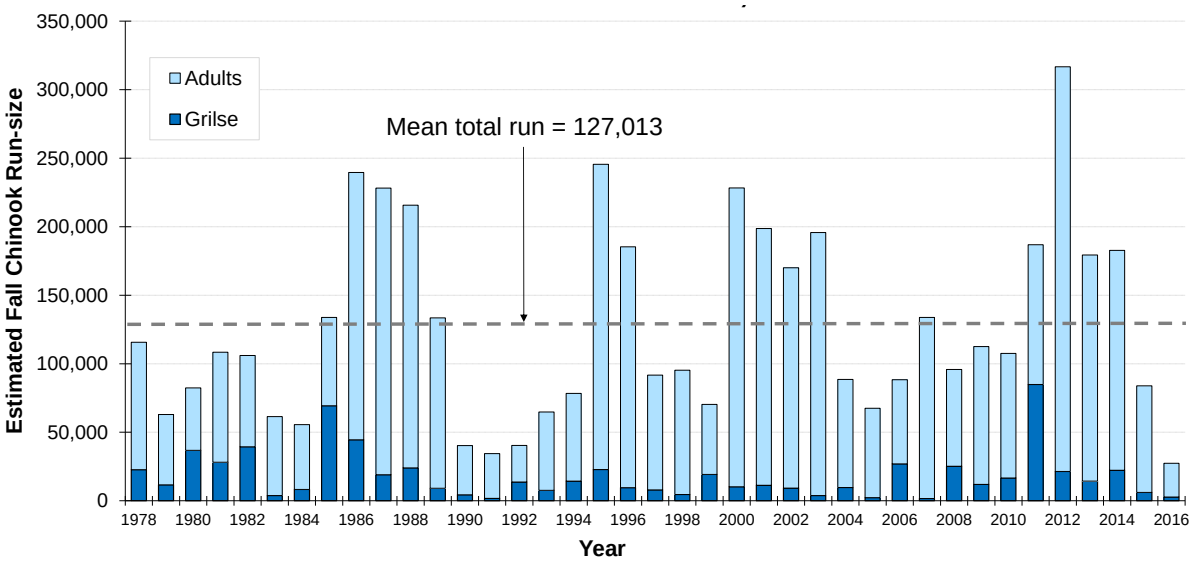

Figure 1. Estimated fall chinook run size (before in-river harvest) in the Klamath Basin, 1978-2016. Data from CDFW (2017) Klamath Basin "megatable". Data for 2016 are provisional.

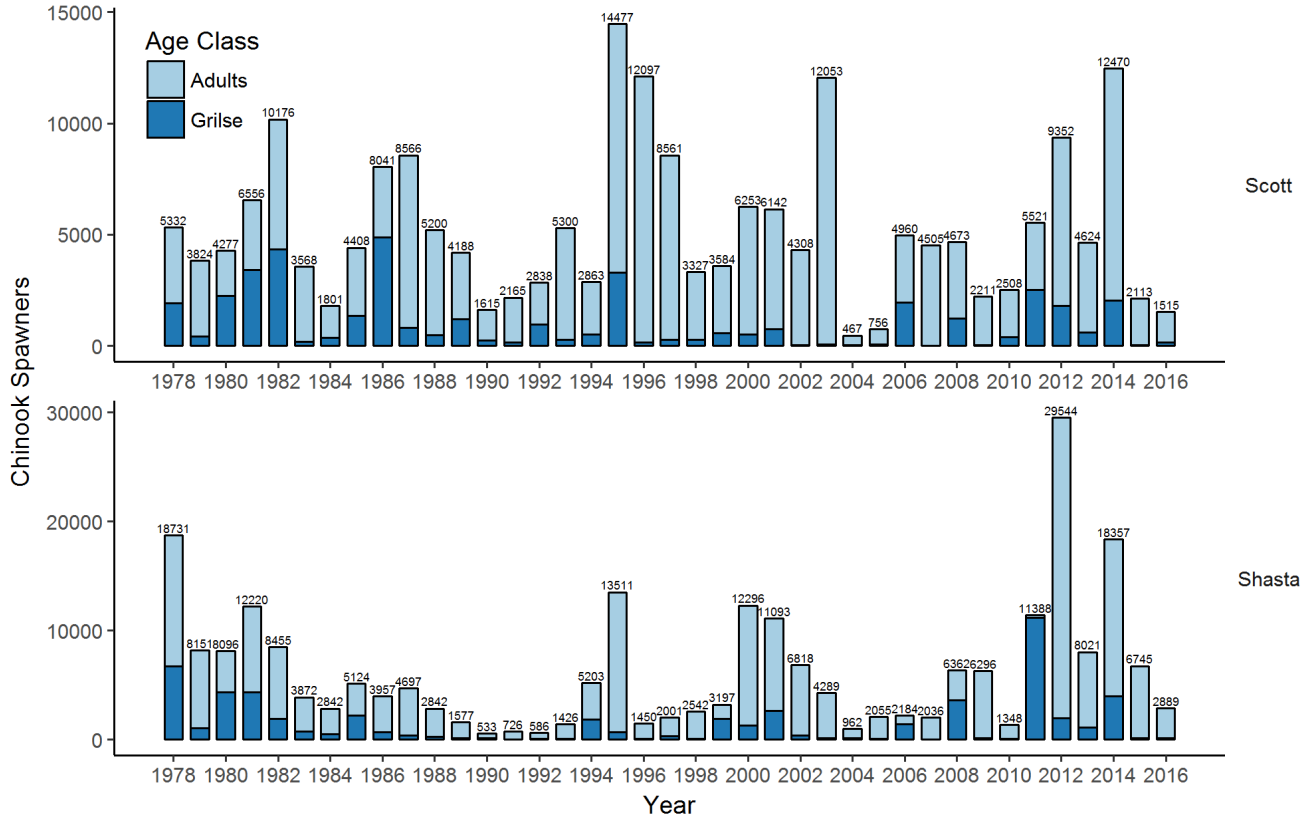

Figure 2. Fall chinook spawning escapement in Scott (top panel) and Shasta (bottom panel) sub-basins, 1978-2016. Data from CDFW (2017) Klamath Basin "megatable". Data labels are sums of adults plus grilse.

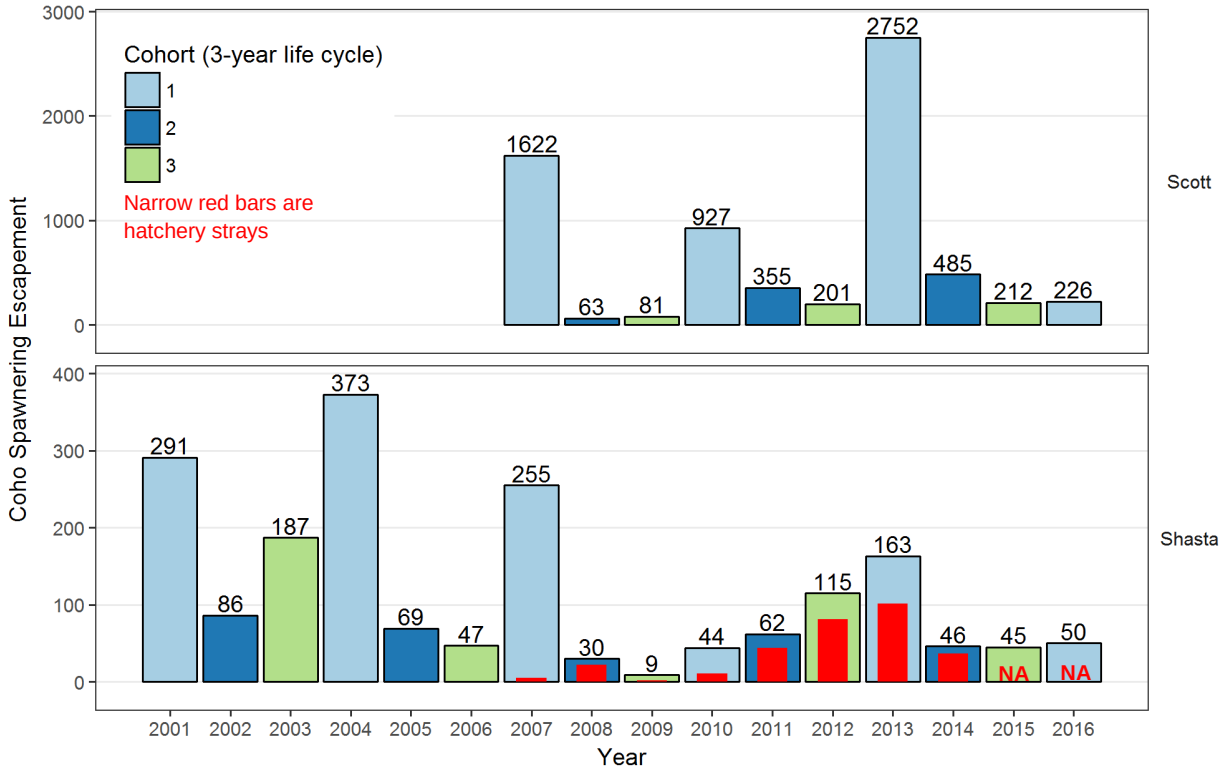

Figure 3. Adult coho spawning escapement in Scott (top panel) and Shasta (top panel) sub-basins, 2001-2016. Bars are color-coded by the 3-year life cycle as a visual aid. Hatchery strays were only estimated in Shasta River in 2007-2014 (no carcasses found in 2015 and 2016 results not yet available); total counts include hatchery strays. Iron Gate hatchery began releasing surplus adults in 2010. Data sources for Scott River video weir: 2007-2015 from Chesney and Knechtle (2016a), 2016 from Bill Chesney (unpublished). Data sources for Shasta River: 2001-2015 from Chesney and Knechtle (2016b), 2016 from Bill Chesney (unpublished). Data are incomplete in some years due to high flow conditions (see reports for details).

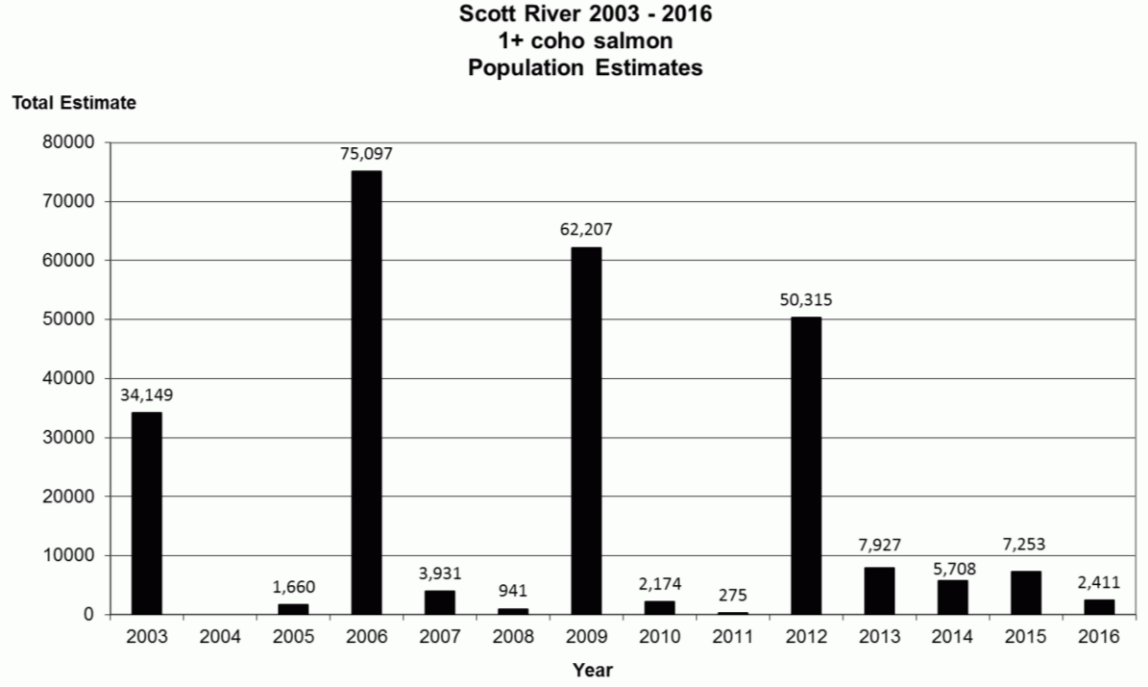

Figure 4. Population estimates for juvenile 1+ coho salmon outmigrants at Scott River rotary screw trap, 2003-2016. Chart from Chesney (2017) presentation to the Klamath Basin Monitoring Program (KBMP).

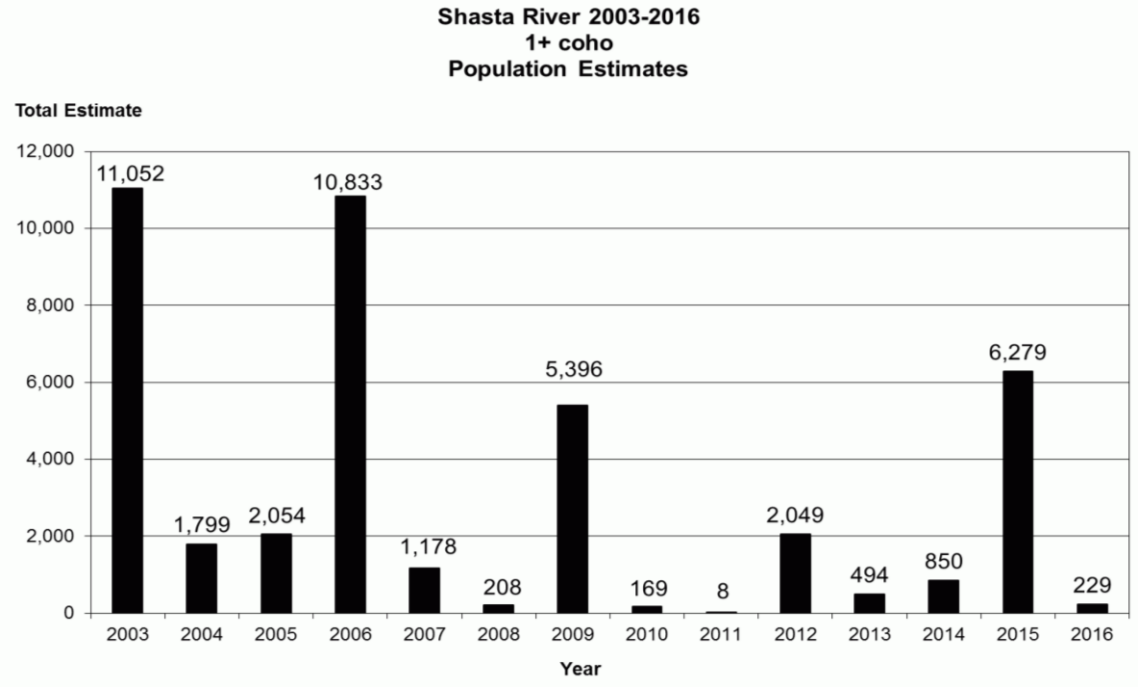

Figure 5. Population estimates for juvenile 1+ coho salmon outmigrants at Shasta River rotary screw trap, 2003-2016. Chart from Chesney (2017) KBMP presentation.

Juvenile lamprey catch, Shasta and Scott Rivers
Julian weeks 5- 26, 2000-2013

	Shasta	Scott
2000	17560	893
2001	24862	10695
2002	14452	7827
2003	8731	5582
2004	9666	6426
2005	4428	17790
2006	24	48
2007	4467	771
2008	7349	6549
2009	3576	1359
2010	1414	811
2011	1303	811
2012	2396	17
2013	54	75

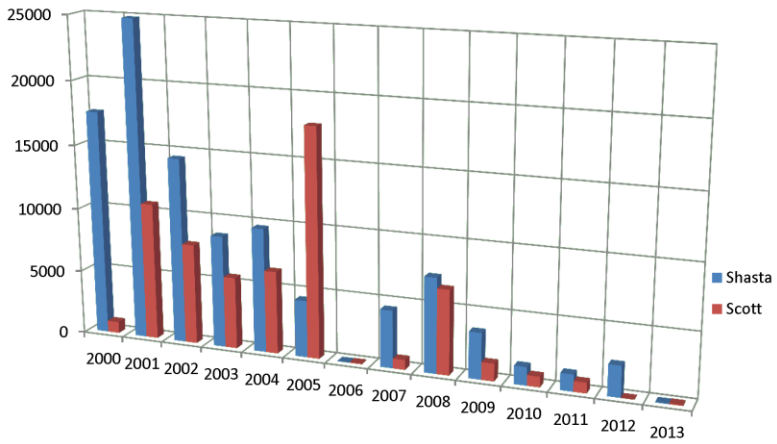

Figure 6. Catch of juvenile lamprey at Shasta and Scott River rotary screw traps, 2000-2013. Chart from Chesney (2017) KBMP presentation.

REFERENCES

Chesney, B. 2017. Shasta and Scott River Juvenile Salmonid Production Estimates 2000-2016. California Department of Fish and Game, Klamath River Project, Yreka, CA. Available from: http://www.kbmp.net/images/stories/pdf/Meeting_Materials/Meeting_20/15_Scott_Shasta_RST_3-16-17_final.pdf, accessed 6/27/2017.

Chesney, D. and Knechtle, M. 2016a. 2015 Scott River Salmon Studies Final Report. California Department of Fish and Game, Klamath River Project, Yreka, CA. Available from: http://kbifrm.psmfc.org/file/2015-scott-river-salmon-studies-final-report/, accessed 6/27/2017.

Chesney, D. and Knechtle, M. 2016b. Shasta River Chinook and Coho Salmon Observations in 2015. California Department of Fish and Game, Klamath River Project, Yreka, CA. Available from: http://kbifrm.psmfc.org/file/shasta-river-chinook-and-coho-salmon-observations-in-2015/, accessed 6/27/2017.

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Exhibit B

SUMMARY OF SCOTT RIVER WATER TEMPERATURE DATA
Data collected by a multitude of entities
Compiled/graphed by Riverbend Sciences, 6/27/2017, for use by the members of the Klamath Tribal Water Quality Consortium.

Klamath Tribal Water Quality Consortium has commissioned an analysis of Klamath Basin stream temperatures which is currently in progress. For that analysis, Riverbend Sciences has compiled approximately 29 million individual measurements of stream temperature collected by a multitude of entities, totaling over 4,500 site-years. In these comments on the TMDL waiver, we present some preliminary excerpts from that ongoing analysis. Unfortunately, we had a difficult time obtaining data for the private lands in the Shasta and Scott Rivers, so our ability to analyze potential changes in temperature conditions is limited to a relatively small number of sites.

Stream temperatures at a single site can vary substantially from year to year, making it difficult to determine whether locally controllable factors such as riparian conditions or streamflow are changing or if any apparent changes in stream temperatures are just year to fluctuations in climate. The upcoming Klamath Tribal Water Quality Consortium will use stream network spatial statistical models to address these questions. In the interim, for these TMDL waiver comments we utilize a simpler approach to dealing with climate. Rather than attempting to correct for year-to-year differences in climate, we calculated an index which designates years as cool vs. warm at the geographic scale of the Lower/Middle Klamath Basin, so that when an annual time series for a site is displayed it can be placed in context. Then index of cool vs. warm years is based on the MWMT relative anomaly (i.e., ratio of MWMT for individual years to the mean MWMT calculated from all years) using a method previously developed by Asarian (2016) in the South Fork Trinity River and as calculated as follows. First, using only those sites with at least five years of data, we calculated each site's mean MWMT. For each site, we then divided the MWMT for each year by the mean MWMT. The result is the relative anomaly, a unitless ratio which can then be averaged across all sites within a year, allowing relatively "apples-to-apples" comparisons of the general warmth of each year (Figure 1). The five warmest years were 1992, 2006, 2009, 2014, 2015 and the five coolest years were 1995, 2008, 1993, 1999, 2011 (Figure 2).

Figures 3 through 6 show time series of Maximum Weekly Maximum Temperature (MWMT) at several Scott River sites collected by USFS, USFWS, and QVIR. MWMT is the average daily maximum temperature during the hottest seven-day period of the year. Adjacent sites are grouped together for comparison. Recent years such as 2014 and 2015 were among the warmest on record at the Scott River sites, suggesting that temperature conditions in the Scott River have not improved since the adoption of the TMDLs. The inter-annual pattern at the Shasta River sites (Figures 7 through 9) is generally similar to the Scott River sites (i.e., not improving over time), except CDFW's site BSC 1 the mouth of Big Springs Creek on the Nature Conservancy's Big Springs Ranch where MWMT appears to have decreased since 2008 despite adverse climate conditions in 2014-2015.

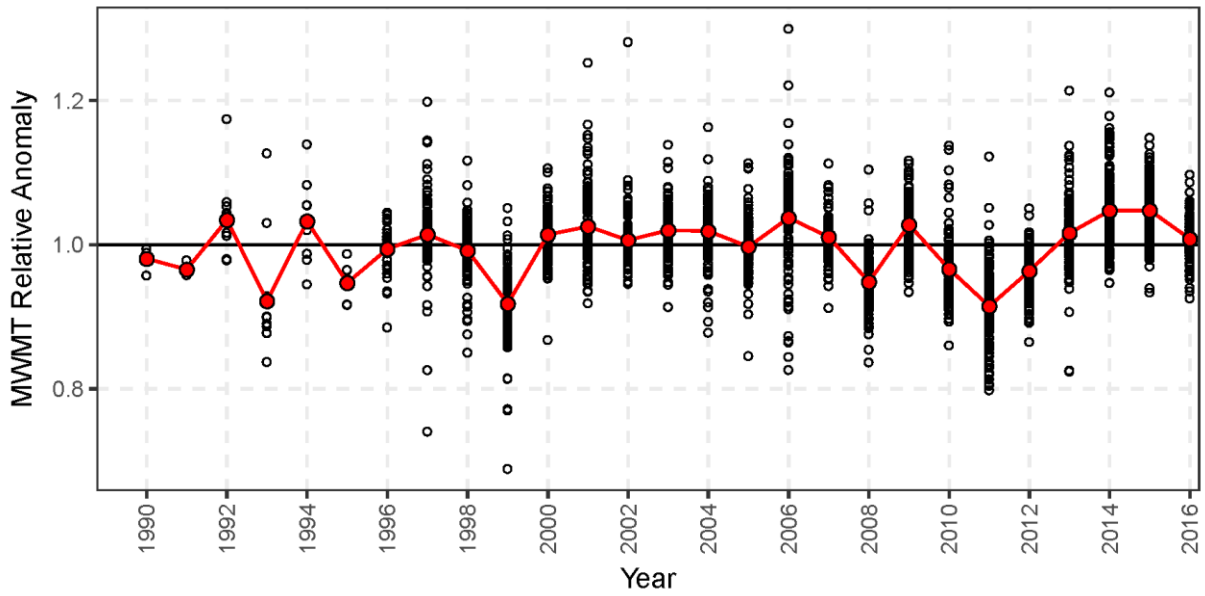


Figure 1. Annual time series of MWMT relative anomaly (i.e., ratio of a site-year's MWMT to a site's mean MWMT) for each site and year (black circles). Large red circles are the mean of all sites within a year. Warm years have relative anomalies greater than 1 while cool years have relative anomalies less than 1. The analysis includes hundreds of sites in the Lower and Middle Klamath Sub-Basins including many in the Scott sub-basin but not many in the Shasta sub-basin.

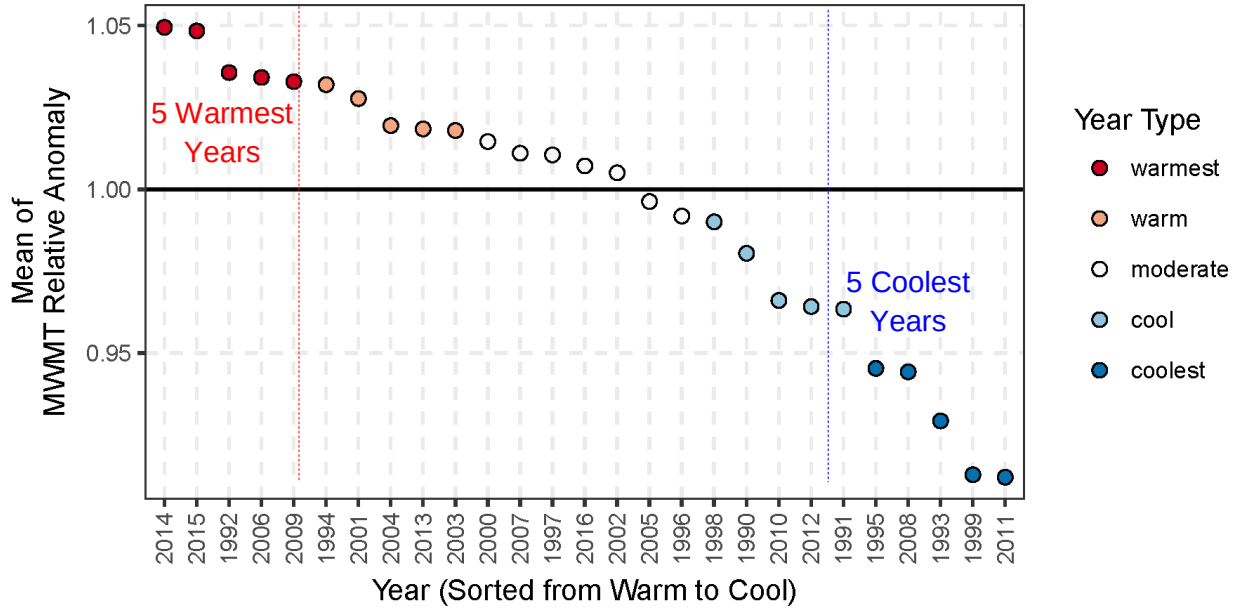


Figure 2. Mean of MWMT relative anomaly (i.e., mean ratio of a single-year MWMT to a mean MWMT) for each year 1990 to 2016, indicating generalized basin-scale cool and warm years. X-axis is sorted in same order as y-axis. Points in this graph are the same as the red circles in the previous figure. Warm years have relative anomalies greater than 1 while cool years have relative anomalies less than 1.

Scott River near Mouth (river mile 0-0.5 up to Roxbury Bridge):

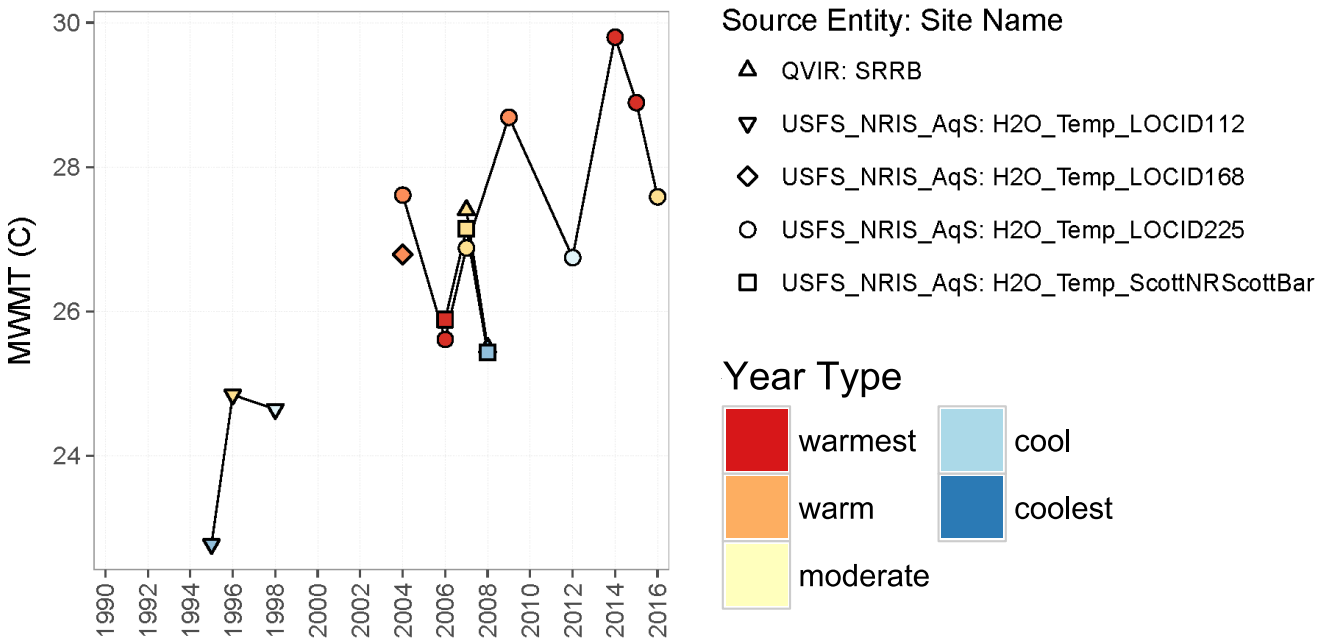


Figure 3. Time series of Maximum Weekly Maximum Temperature (MWMT) at the Scott River near its mouth. Each point is one year, site, and source entity. Each site is shown as a unique symbol shape, which is then colored by MWMT according to year type.

Scott River at second bridge (river mile 1.5):

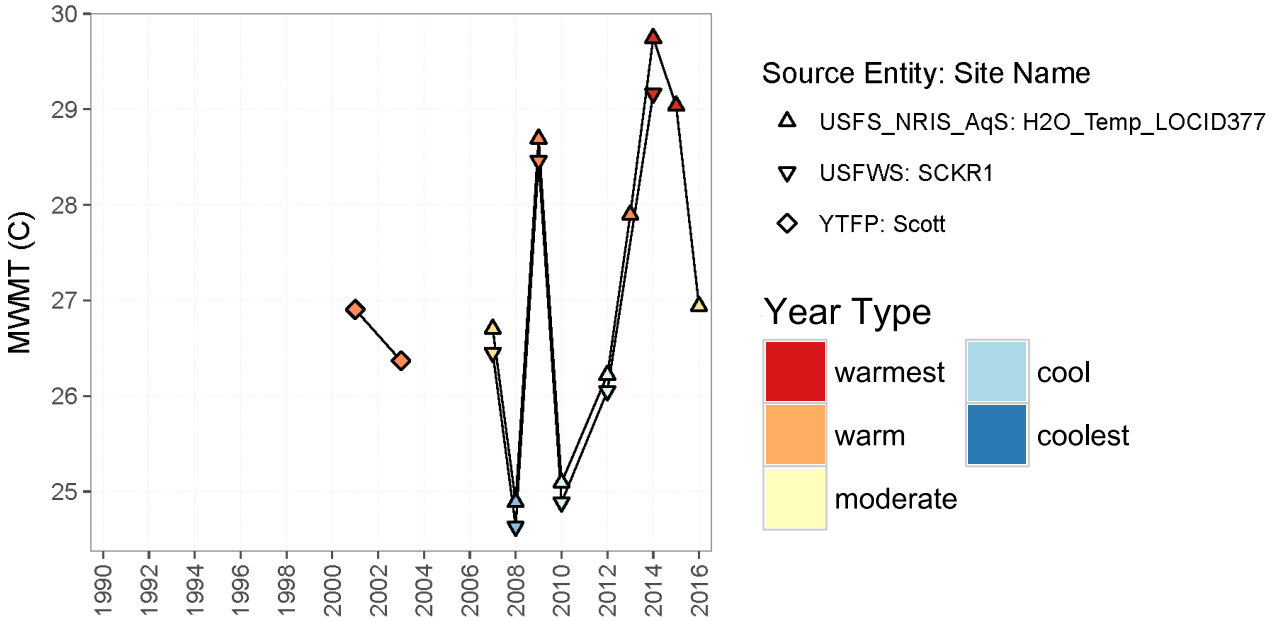


Figure 4. Time series of Maximum Weekly Maximum Temperature (MWMT) at the Scott River 1.5 miles upstream from its mouth. Each point is one year, site, and source entity. Each site is shown as a unique symbol shape, which is then colored by MWMT according to year type. Data from USFWS site in 2013, 2015-2016 are omitted from this graph because they do not match the pattern observed at adjacent sites and may be erroneous.

Scott River near USGS gage:

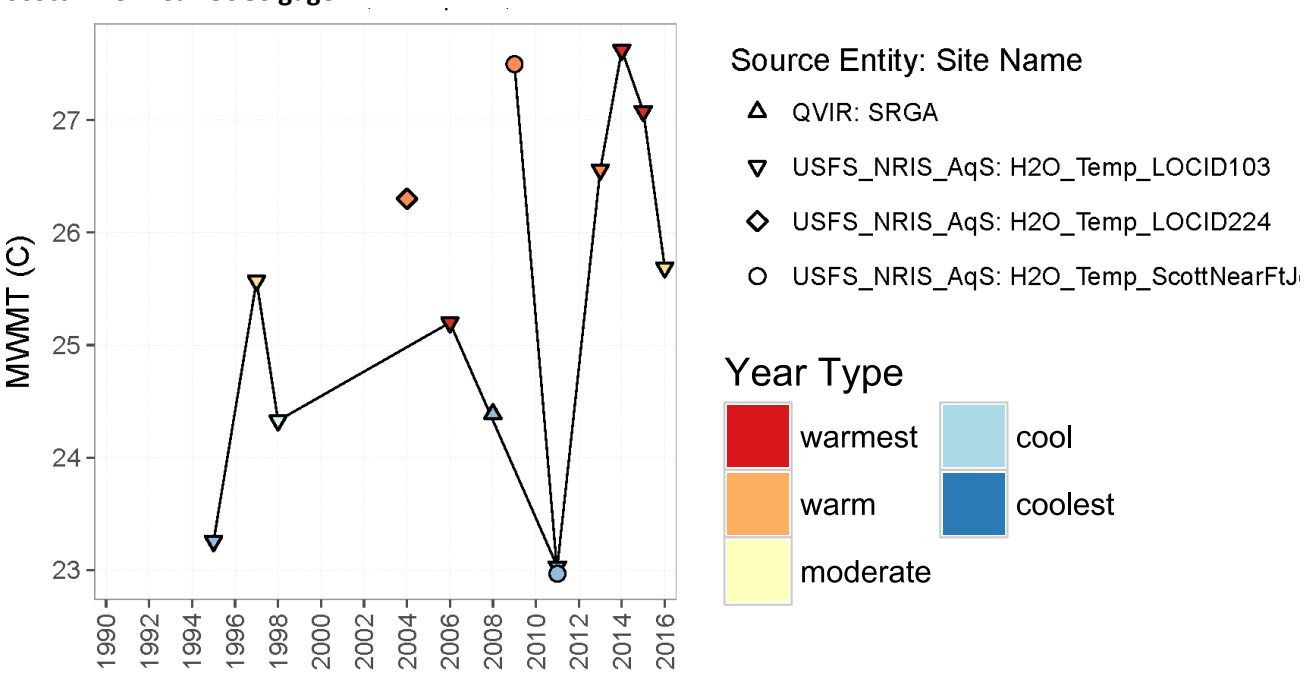


Figure 5. Time series of Maximum Weekly Maximum Temperature (MWMT) at the Scott River at the US Geological Survey streamflow gage at the outlet of Scott Valley. Each point is one year, site, and source entity. Each site is shown as a unique symbol shape, which is then colored by MWMT according to year type.

East Fork Scott River upstream of confluence with mainstem Scott River:

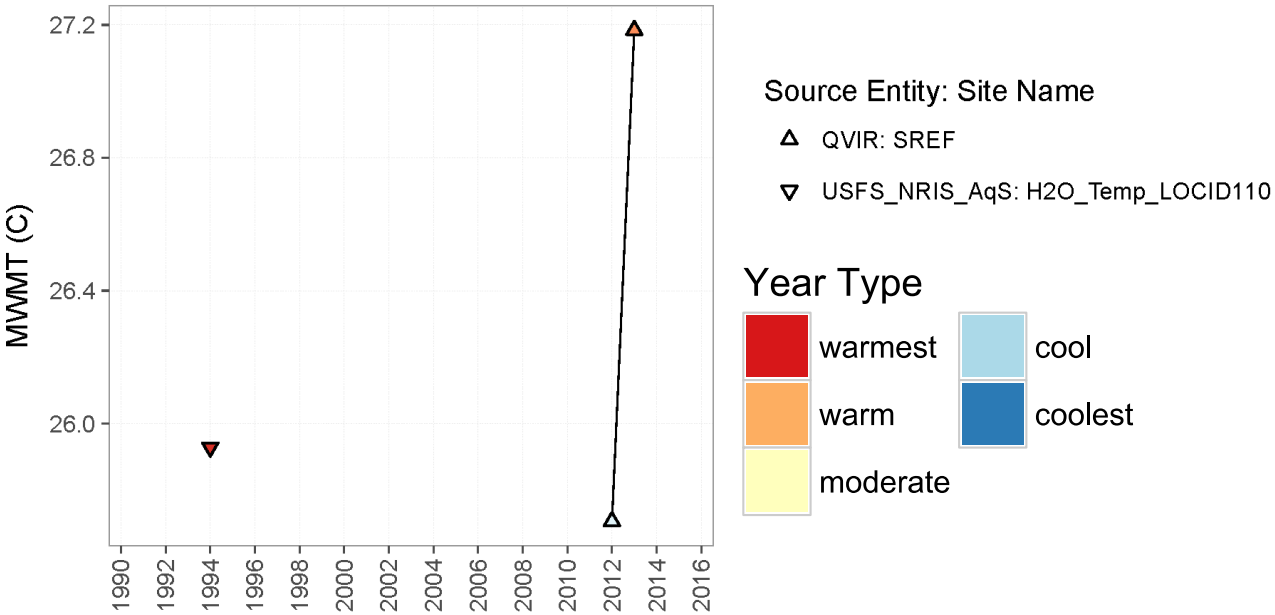


Figure 6. Time series of Maximum Weekly Maximum Temperature (MWMT) at the East Fork Scott River upstream of the confluence with the mainstem Scott River. Each point is one year, site, and source entity. Each site is shown as a unique symbol shape, which is then colored by MWMT according to year type.

Shasta River near mouth:

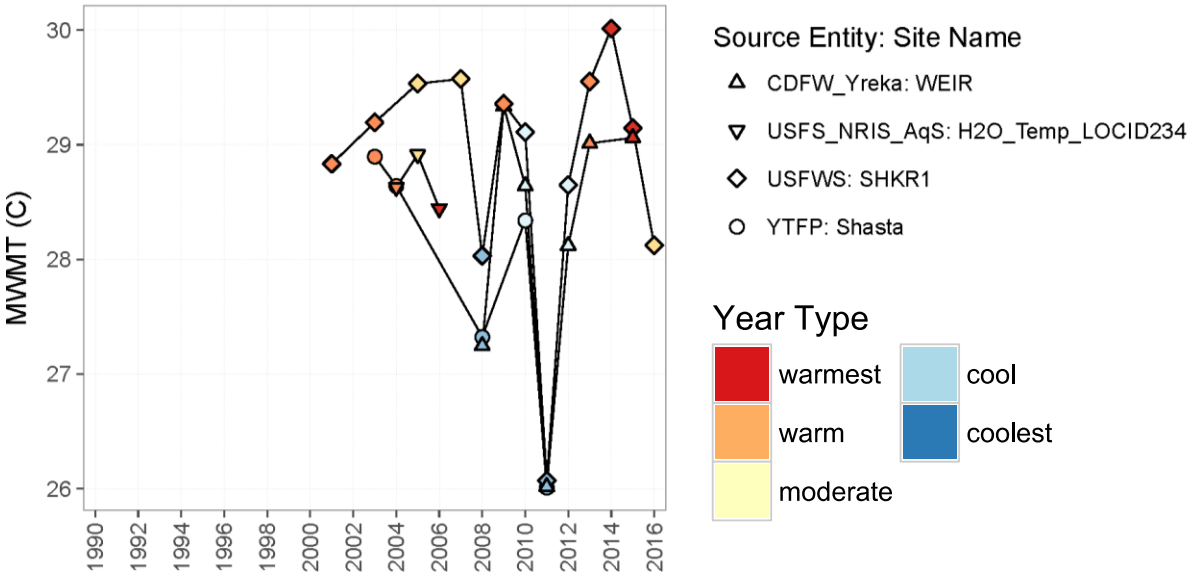


Figure 7. Time series of Maximum Weekly Maximum Temperature (MWMT) at the Shasta River near its mouth. Each point is one year, site, and source entity. Each site is shown as a unique symbol shape, which is then colored by MWMT according to year type.

Shasta River upstream of confluence with Parks Creek:

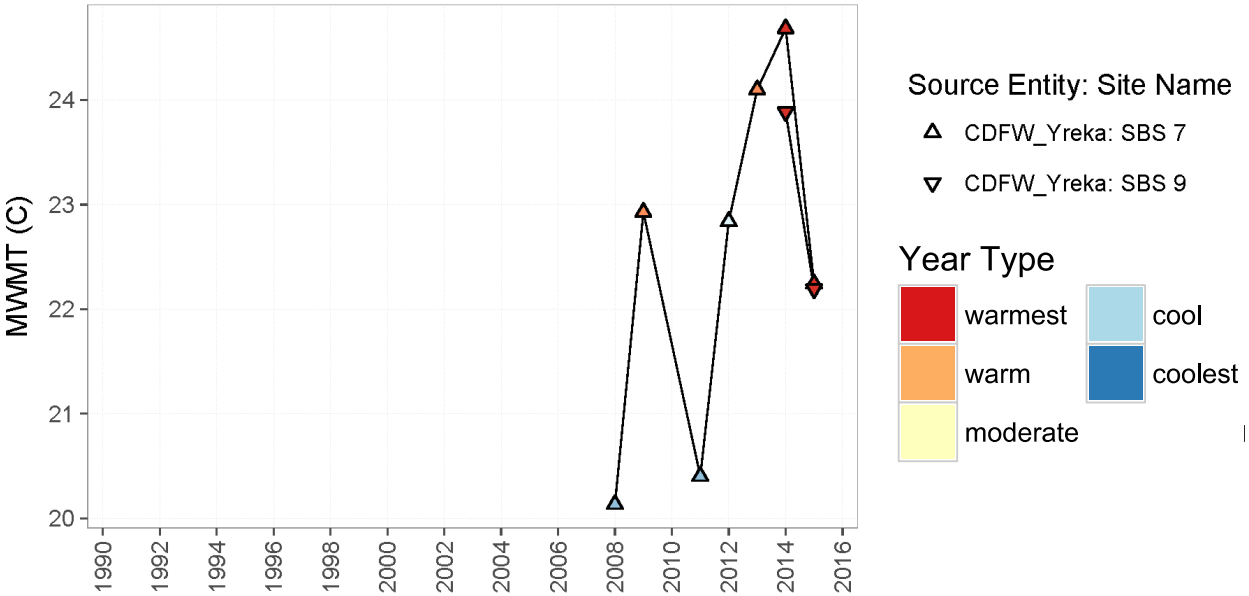


Figure 8. Time series of Maximum Weekly Maximum Temperature (MWMT) at two adjacent sites on the Shasta River monitored by CDFW. SBS 9 is the upstream of the confluence of Parks Creek and SBS 7 is another 75 meters upstream. Each point is one year, site, and source entity. Each site is shown as a unique symbol shape, which is then colored by MWMT according to year type.

Lower and middle reach of Big Springs Creek (tributary to Shasta River):

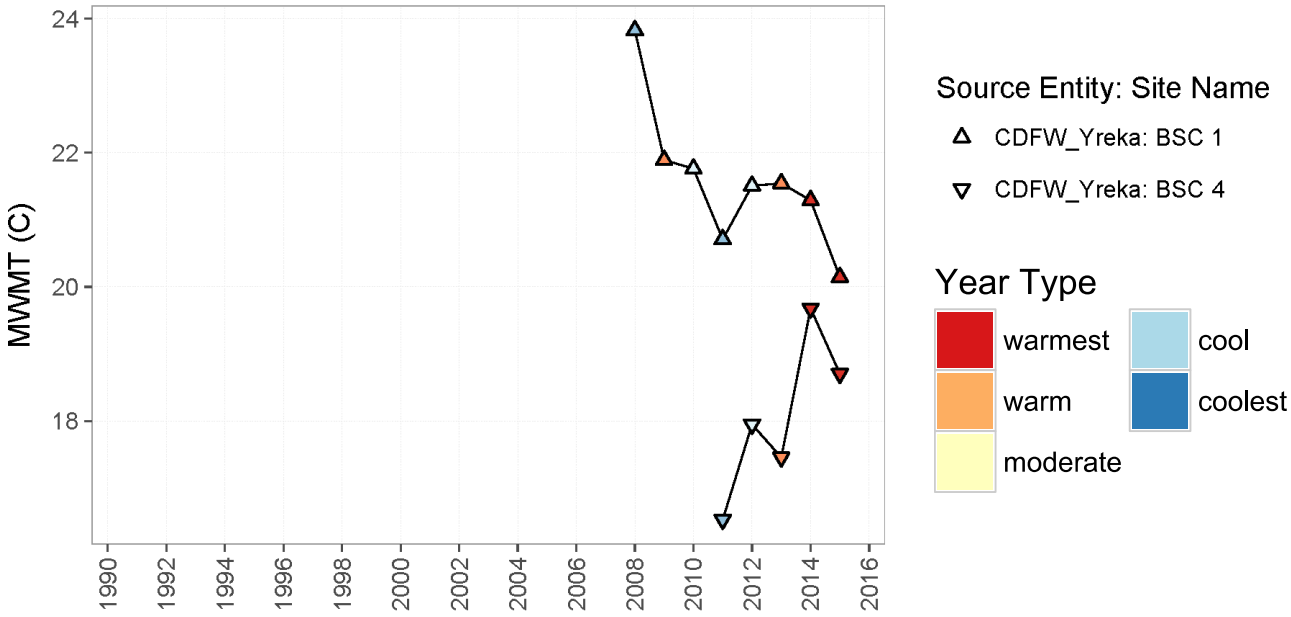


Figure 9. Time series of Maximum Weekly Maximum Temperature (MWMT) at two sites in Big Springs Creek monitored by CDFW. BSC 1 is the mouth of Big Springs Creek and BSC 2 is approximately halfway between Big Springs Lake and the mouth of Big Springs Creek (between the second and third road crossing). Each point is one year, site, and source entity. Each site is shown as a unique symbol shape, which is then colored by MWMT according to year type.

REFERENCES

Asarian, J.E. 2016. Stream Temperatures in the South Fork Trinity River Watershed 1989-2015. Prepared by Riverbend Sciences for The Watershed Research and Training Center, Hayfork, CA. 61p. + appendices. Available online at: https://drive.google.com/open?id=0B2p7GuVSL4OXd2hoLWFYZnRzMUk

From: St.John, Matt@Waterboards
To: Scott, Elias@Waterboards
Cc: McFadin, Bryan@Waterboards
Subject: FW: request extension for Scott/Shasta Waiver comments
Date: Tuesday, June 27, 2017 11:49:53 AM

Hi Eli:

Please keep this in your records; Karuk Tribe's request for extension of comment deadline and Chairman Noren's approval. Let me know if you have questions.

Thanks, Matt

Matthias St. John
Executive Officer
North Coast RWQCB
(707) 570-3762
Matt.St.John@waterboards.ca.gov

From: St.John, Matt@Waterboards
Sent: Tuesday, June 27, 2017 11:49 AM
To: External, CTucker@DOT
Cc: Susan Fricke
Subject: RE: request extension for Scott/Shasta Waiver comments

Dear Mr. Tucker:

First, thank you very much for the government to government meeting on June 14th; it was a very productive discussion. I have discussed your request below with Chairman Noren, and we approve; we will accept the Karuk Tribe's written comments on the Scott and Shasta River TMDL Waivers on or before July 14, 2017. Please let me know if you have any questions. Thanks

Sincerely, Matt

Matthias St. John
Executive Officer
North Coast RWQCB
(707) 570-3762
Matt.St.John@waterboards.ca.gov

From: Craig Tucker [mailto:ctucker@karuk.us]
Sent: Monday, June 26, 2017 8:15 AM
To: St.John, Matt@Waterboards
Cc: Susan Fricke
Subject: request extension for Scott/Shasta Waiver comments

Dear Mr. St. John:

The Karuk Tribe greatly appreciated both the recent public workshop and the government to government meeting with Board staff. The Regional Board continues to make itself accessible to us.

As you know, this year is an unprecedented salmon disaster on the Klamath. Our council has directed staff to fully engage on all regulatory processes that affect Klamath fisheries – including the Scott/Shasta ag waiver development. In order to thoroughly research the topic as well as review pertinent data, we request that the comment period be extended for additional week to complete our research and develop detailed comments.

We appreciate your kind consideration of this request.

Sincerely,

S. Craig Tucker, Ph.D.
Natural Resources Policy Advocate
Karuk Tribe
916-207-8294

Follow me on twitter @scraigtucker

From:	nitastill@snowcrest.net
To:	Scott, Elias@Waterboards
Cc:	nitastill@snowcrest.net
Subject:	Re: Scott River TMDL Conditional Waiver Waste of Discharge Requirements Renewal: Notice of Public Comment Deadline Extension.
Date:	Sunday, July 9, 2017 10:25:45 AM

Hi Elias,
All water past the dams has been cleaner than before the dams. Klamath River flows through a volcanic area. There used to be mercury mines around the Keno area; there are also hot springs. These NGO-Stakeholder-Environmentalists (NSE) who want the dams removed are totally wrong. Santa Rosa has been taken over by the NSE, it is a shame. Craig Tucker, who wants the dams removed, even over his dead body, is also from Santa Rosa!
We have been manipulated by them and our government for too long. Your group is fine, just so it does not manipulate our Rights. We voted to Keep the dams by over 79%!
Nita Still

Quoting lyris@swrcb18.waterboards.ca.gov:

> This is a message from the California Regional Water Quality Control
> Board, North Coast Region (1).
> _____
> Please note that the deadline for the receipt of public comment has
> been extended until July 14, 2017. Written comments may be
> submitted to:
>
> California Regional Water Quality Control Board, North Coast Region,
> c/o Eli Scott
> 5550 Skylane Boulevard, Suite A
> Santa Rosa, CA 95403
> Or via email to Elias.Scott@waterboards.ca.gov
>
>
> _____
> You are currently subscribed to reg1_tmdl_scottriver as:
> nitastill@snowcrest.net.
> To unsubscribe click here:
> leave-6501354-5234167.5bb18c532c8d9e3e46c9248e85082681@swrcb18.waterboards.ca.gov

North Group-Redwood Chapter-Sierra Club
Felice Pace, Water Chair
28 Maple Road Klamath, Ca 95548 707-954-6588 unofelice@gmail.com

June 29, 2017

Matt St. John, Executive Officer
Members of the Board
NCWQCB
Hand delivered to Matt St.John and board members

SUBJECT: **Comment on Proposed Order No. R1-2017-0031: Scott River TMDL Conditional Waiver of Waste Discharge Requirements. Delivered to the EO and Board at the 6/29, 2017 Board meeting**

Background

The "Action Plan for The Scott River Watershed Sediment and Water Temperature Total Maximum Daily Loads" was adopted into the Basin Plan in 2006. It identifies in Table 4-10 "specific implementation actions that shall be taken to achieve the TMDLs and meet the sediment and temperature-related water quality standards in the Scott River watershed."

For example, in order to remove the Scott River's temperature impairment, the Action Plan states that "the Regional Water Board shall develop and take appropriate permitting and enforcement actions to address the human-caused removal and suppression of vegetation that provides shade to a water body in the Scott River watershed." The Action Plan goes on to state that "The Regional Water Board's Executive Officer shall report to the Regional Water Board on the status of the preparation and development of appropriate permitting and enforcement actions by September 8, 2009." According to the Action Plan, appropriate permitting and enforcement actions are required "to address compliance with the (SWRCB's) Nonpoint Source Policy."

Among actions taken to implement the Action Plan, the Board adopted Scott River TMDL Waivers of WDRs which were adopted in 2006 and 2012. Waivers adopted for national forest lands in the region also contained provisions requiring implementation of the Action Plan, including requiring that Forest Service managers taken the actions necessary to allow natural shade to develop along all streamcourses located in the Scott River Basin in order to address and remove the temperature impairment to Scott River Basin beneficial uses of water.

However, neither the two prior waivers, subsequent implementation of those waivers, nor the proposed waiver adequately implement the Action Plan; nor do they faithfully implement the SWRCB Non-Point Source Policy. Among those failures is the failure, confirmed by EO St. John, to include or implement the "appropriate permitting and enforcement actions" needed to implement the action plan. Executive Officer St. John essentially admitted this in a May 31st email; referring to the Shasta and

Scott River Basin EO St. John, states that “to date no formal enforcement actions associated with these Waivers have been taken in these watersheds.” EO St. John adds, however, that “we have followed up on complaints which have led to changed practices to protect water quality.”

In order to illustrate the last point EO St. John attached two letters which he claims illustrate the progress which has been made toward removing the Scott River beneficial use impairments. There is no public access to the site addressed in one of the letters. The other letter, however, is for a site about which I have been asking the NCWQCB to address bovine waste deposition into the streamcourse, bank trampling and lack of riparian vegetation due to trampling for over a decade. The location is the intersection of Patterson Creek and Eller Lane in the Scott River Valley.

After Water Board staff contacted the landowner about the problems I had documented and called to their attention, the landowner installed cattle exclusion fencing on the top of the trampled banks in 2014. This was inadequate to allow natural shade to develop but at least it was something. NCWQCB then wrote a letter to the landowner, referenced by EO St. John, which praised the action and ended with the following statement:

“In summary, your family’s efforts to address water quality issues are acknowledged and appreciated. Thank you for your efforts to protect and improve the quality of water on and adjacent to your property and in the Scott River watershed.”

Here is a photo of the location about which this landowner was praised by staff in 2014; the photo was taken on October 20, 2016. As you can see, the fencing has been removed, the banks are again being trampled, bovine waste is again being deposited into the streamcourse and riparian vegetation is unable to establish on the site due to the constant trampling.

This example is not an isolated case. I could tell you about several other sites where the response to staff contact has been to make minimal changes but then to remove those improvements after a few weeks to a few months. This example it is typical of how bad actors throughout the Klamath River Basin respond to the NCWQCB's “stewardship” approach.

In addition, Forest Service management of grazing allotments in the Scott River watershed is not

allowing natural shade to develop on headwater streams and is allowing extensive bank trampling and the resulting sedimentation. This is the result of “passive season-long grazing” whereby livestock are placed on the range and not herded for the entire season. While they have required more monitoring of grazing impacts, NCWQCB staff have not required the management changes needed to address the degradation of riparian areas, water quality and wetlands. Modern grazing methods like across-season and within-season rest rotation grazing can mitigate the current sediment, temperature and water quality impacts of national forest grazing in the Scott River Basin. Unfortunately, NCWQCB staff has failed to require that FS managers implement the modern grazing management needed to address the Scott River Basin impairment of beneficial uses. The photos below illustrate the results of that failure:

Big Meadows Allotment, Shakleford Watershed, 10-25-11 *Mill Creek Allotment, East Boulder Watershed, 9-29-15*

Instead of requiring staff to enforce provisions of the Action Plan and Waivers, as required by the SWRCB Non-Point Source Policy, the NCWQCB has allowed staff to implement what they call the “stewardship approach”. What the staff calls “stewardship” is, in fact, voluntary compliance whereby those who are identified as not complying with Waiver provisions, primarily via citizen complaints and complaints from other agencies, are visited and asked to voluntarily comply. In too many cases, however, those contacted by staff because they were in violation of both the temperature and sediment provisions of the Scott TMDL Action Plan, took minimal compliance actions in response to staff contact but have not maintained those changes.

Whether called “stewardship” or what it really is, voluntary compliance, this approach works well with those persons and entities which are already in compliance or who want to take care of the water and streams they use. It does not work with respect to the bad actors who persist in damaging water quality in violation of the Basin Plan. The proof is in the pudding: monitoring data suggests no progress in removing beneficial use impairments in the case of the Klamath and Scott Rivers. On the Shasta, progress has been made in one part of the basin due mostly to the Nature Conservancy's ownership of a ranch with major springs; but in the majority of the watershed bad actors continue to violate the TMDL Action Plan and Waiver provisions with impunity.

We have now had over 11 years of waivers that are very similar to the waiver staff have proposed. Unfortunately, the Scott River Watershed Water Quality Compliance and Trend Monitoring Plan which staff developed in 2006 has, for the most part, not been implemented. Nevertheless, with respect to the Scott River's impairments, EO Matt St. John has admitted the lack of progress. In an email to me dated May 31, 2017 he states that “in the Scott River the available monitoring data isn’t as robust, and what is available (mostly temperature) isn’t showing anything conclusive.” Mr. St. John then goes on to cite riparian restoration and the UC Davis Groundwater Model as indicating “progress”. I have already shown you the lack of progress on “riparian restoration”. With respect to the Groundwater Model, EO St. John claims that it demonstrates “tangible approaches to managing water to increase surface flows.”

The UC Davis Scott River Project

The groundwater model developed by the UC Davis team and funded as part of TMDL Action Plan implementation has given us a better understanding of Scott Valley groundwater and connections between surface flows and groundwater. That is a benefit for which we should all be grateful. However, subsequent activities by the UC Davis Team have yielded limited if any benefit in terms of removing the Scott River's impairments. Here's why:

In 2016 the UC Davis Team conducted a groundwater recharge project with funding from the SWRCB. My comment on that project for the North Coast Stream Flow Coalition is attached and is part of this input. The UC Davis team claims in the Project's Summary Report Abstract that the project *“can be considered a successful implementation of intentional recharge on agricultural land for groundwater storage and streamflow enhancement with significant amounts of water recharged (relative to the size of agricultural land used), with demonstrable benefits to later streamflow”*.

While on “can” make such claims and the UC Davis team does make them, they are not supported by the actual results as presented in the body of the Summary Report. For example, on page 9 the Summary Report states:

“With exception to the Bryan-Morris ranch, where the groundwater surface elevation response could be monitored directly on site, it was not possible to quantify the rise in groundwater surface elevation related to groundwater recharge vs. natural recharge from precipitation.”

In other words, in a year when precipitation was only slightly above the long term average, only one monitoring well demonstrated that winter irrigation enhanced natural groundwater levels resulting from precipitation, that is, enhanced the ability of groundwater to augment streamflow. In 8 of the 9 monitoring sites and 7 of 8 wells monitored, diversion of surface flows to groundwater storage did not raise the groundwater elevation and therefore did not enhance discharge from groundwater to the Scott

River.

Here's another example of how the UC Davis Team claims are not supported by the actual results. On page 24 The Summary Report states:

"*The results suggest an order of magnitude increase in recharge would be necessary to impact late-summer streamflow. The previous managed aquifer recharge simulations also indicated that maximum gains in streamflow were not recognized until after several consecutive years of treatment.*"

In other words, there were no "demonstrable benefits to later streamflow" as claimed. In fact, while in their application the UC Davis team said they would monitor streamflow response, that did not occur. Instead the team reported that modeling results indicates that late winter and early spring irrigation "orders of magnitude larger" over several years would be required to positive impact summer streamflow.

Such large late winter and early spring diversions would very likely have significant negative impacts to salmon, including dewatering salmon nests and impeding downstream migration of juvenile salmon. Diversions large enough and long enough to positively impact streamflow would likely violated the California and Federal Endangered Species Acts. Furthermore, according to UC Davis modeling, extending the irrigation season into late winter and early spring for several years will not have a positive impact on Scott River's fall flows, which is when dewatering associated with groundwater extraction for irrigation often denies salmon access to spawning grounds in and above Scott Valley.

The UC Davis model is too simplistic and too untested and unverified for it to serve as anything more than a general guide to understanding ground water surface water interactions. Nevertheless, if the model is even somewhat accurate, the benefits to summer streamflow could not be realized in the real world without considerable damage to stream ecosystems and salmonids, including state and federal ESA listed Coho salmon.

If the UC Davis team, the Board or Staff were to consult the DFW folks who work on water and fish issues in the Scott River Basin, I believe DFW biologists would confirm that the large late winter and early spring diversions the UC Davis team is promoting are likely to negatively impact at-risk salmonids. Dewatering of salmon nests and negative impacts to salmonid out migration are likely and may have occurred during the early irrigation experiment conducted in 2016.

The UC Davis team failed to monitor the affect of the out-of-irrigation-season late winter early spring diversions on habitat in the diversion reach, did not coordinate with DFW and failed to use the experiment to actually test the models predictions with actual streamflow measurements (as opposed to modeling results). These failures should give the board pause. Why has the US Davis Team failed to coordinate with local DFW biologists and what does that indicate about the team's and the project's agenda?

Finally, unless and until groundwater extraction is effectively regulated, any water put into the ground in hopes of enhancing summer river flows will be subject to appropriation by groundwater irrigation interests before that water can reach the river or enhance summer flows. The water may be used to lengthen the irrigation season or on fields not previously irrigated.

The Department of Fish and Wildlife recently completed "INTERIM INSTREAM FLOW CRITERIA FOR THE PROTECTION OF FISHERY RESOURCES IN THE SCOTT RIVER WATERSHED,

SISKIYOU COUNTY" dated February 6, 2017. Staff should read this report and consult with DFW concerning the feasibility of early irrigation as proposed by the UC Davis Team meeting these flow needs. Please also consult with DFW about the potential impacts to at-risk salmonids, including ESA and C-ESA listed Coho Salmon, if late winter, early spring irrigation "orders of magnitude" larger than what was done in 2016 were to be implemented. If staff does those consultations I believe it will come to the conclusions that I have about the UC Davis scheme to extend the irrigation season and justify that by claiming a benefit to fisheries:

1. The UC Davis Groundwater model indicates that any increase in Scott River flows that result from water spreading via late winter and early spring irrigation will occur during summer which is not when river flows are most in deficit.
2. The UC Davis model suggests that early irrigation water spreading can not enhance flows when they are most critically needed and when they could significantly ameliorate the Scott River's temperature impairment, that is, during the fall.
3. The water spreading needed to achieve augmented flows would almost certainly dewater salmon nests and impede salmon migration to the ocean resulting in "take" of ESA and C-ESA listed Coho and other at-risk salmon species and stocks.
4. Because it will not benefit Public Trust Resources, the UC Davis Team's water spreading scheme should not receive any more funding from taxpayers; if more experiments are desired, those who would benefit should pay for them, not taxpayers.

It should be noted that, based on modeling results, the UC Davis team identified another approach to augmenting Scott River flows which would likely be effective in enhancing fall river flows, that is, which would actually assist Coho and other at-risk Scott River salmonids. That approach would move irrigation wells away from the river channel. For some reason, however, the UC Davis Team does not talk about that option and has not sought funds to test it.

A third option for eliminating the Scott River's fall flows problems would be to end groundwater extraction for irrigation on the last day of summer. Unfortunately, the UC Davis team does not even mention that option. Why not? If more funding is provided to the UC Davis team by this board or the State Board that funding should fund testing the two options with potential to address Scott River's most critical flow deficits, that is:

- Ending groundwater extraction for irrigation on September 20th, and
- Moving irrigation wells away from Scott River.

The board should consider offering funding to move irrigation wells away from the River. That would help both fisheries and landowners. The irrigation wells that would be moved are vulnerable to legal challenge because they suck water from Scott River. With the recent court case establishing Scott River groundwater as a beneficial use, it is just a matter of time until those wells are forced to pull back from the River.

Failure to implement SWRCB Policies

The SWRCB's POLICY FOR IMPLEMENTATION AND ENFORCEMENT OF THE NONPOINT SOURCE POLLUTION CONTROL PROGRAM includes the following five key elements which we believe will be violated if the proposed waiver is adopted in its current form:

- *KEY ELEMENT 1: An NPS control implementation program's ultimate purpose shall be explicitly stated. Implementation programs must, at a minimum, address NPS pollution in a*

manner that achieves and maintains water quality objectives and beneficial uses, including any applicable antidegradation requirements. Implementation of the Basin Plan's Action Plan for Scott River via waivers of WDRs has failed to "achieve and maintain" water quality objectives for 11 years; Beneficial uses are not being protected or restored.

- *KEY ELEMENT 2: An NPS control implementation program shall include a description of the MPs and other program elements that are expected to be implemented to ensure attainment of the implementation program's stated purpose(s), the process to be used to select or develop MPs, and the process to be used to ensure and verify proper MP implementation.* According to the SWRCB's policy "A RWQCB must be able to determine that there is a high likelihood that the program will attain water quality requirements." Eleven years of no progress indicates that the approach proposed by staff has a very low likelihood that water quality and beneficial uses will be restored.

- *KEY ELEMENT 3: Where a RWQCB determines it is necessary to allow time to achieve water quality requirements, the NPS control implementation program shall include a specific time schedule, and corresponding quantifiable milestones designed to measure progress toward reaching the specified requirements.* There is no time schedule or milestones included in the proposed Waiver. Staff has never proposed and the board has not adopted a time line and milestones for cleaning up the Scott River. The deliverable noted in the Action Plan has not been delivered.

- *KEY ELEMENT 4: An NPS control implementation program shall include sufficient feedback mechanisms so that the RWQCB, dischargers, and the public can determine whether the program is achieving its stated purpose(s), or whether additional or different MPs or other actions are required.* Where is the feedback mechanism?

- *KEY ELEMENT 5: Each RWQCB shall make clear, in advance, the potential consequences for failure to achieve an NPS control implementation program's stated purposes.* What are the consequences of failure to allow natural shade to develop along streams? Unless one considers a visit from Water Board staff a consequence, there are none associated with non-compliance. The closest thing is the statement in finding 18 that maybe there will be consequences if this same approach, which has failed to make any demonstrable progress toward removing impairments over the past eleven years, fails once again over the next 5 years.

In sum, the proposed waiver does not comply with the SWRCB's policy. For that reason, if the proposed waiver is adopted as per the draft, we will petition the SWRCB and in other ways seek review of how this regional board has implemented the SWRCB's Non-Point Source policy.

Let's return to the Basin Plan. The Action Plan implementing the Scott River TMDL states that:

"The Board shall develop and take appropriate permitting and enforcement actions to address the human-caused removal and suppression of vegetation that provides shade to a water body in the Scott River watershed. The Regional Water Board's Executive Officer shall report to the Regional Water Board on the status of the preparation and development of appropriate permitting and enforcement actions by September 8, 2009."

According to your Executive Officer, the NCWQCB has not taken any enforcement actions in the Scott River Basin. Furthermore, one of two examples cited by your EO as indicating “progress” does, in fact, demonstrate both the lack of progress and the failure of the “stewardship” approach.

Nevertheless, and in spite of these facts, staff now recommends that the board reauthorize for another 5 years essentially the same Waiver that has failed for the past eleven years. If the board does what the staff has recommended, however, not only will it be violating the State Board's Non-Point Policy, it will also be in violation of the Progressive Enforcement Policy the State Board is in the process of adopting. We address the second failure below.

Albert Einstein is reported to have said that the definition of insanity is “doing the same thing over and over again and expecting different results.” Given the factual lack of any demonstrable progress over the past eleven years toward removing the Scott River's beneficial use impairments, what the staff has proposed is insane. Fortunately, there is a better way and one which is in compliance with the SWRCB Non-Point Source and Enforcement Policies.

The Proposed Waiver

1. Finding 18:

The staff proposed Scott River Waiver contains a curious finding. Finding 18 anticipates a change in approach “following the expiration or replacement of this 2017 Order”. The finding proposes a change of approach in 2022 “by incorporating a tiered structure, employing multiple levels of permitting rigor commensurate with the level of discharge or threat of discharge, and may require active enrollment procedures and payment of fees.” In fact, the approach suggested by staff for after 2022 is the approach to enforcement which the SWRCB takes in its Non-Point Source Policy and which the State Board is in the process of adopting right now as its Enforcement Policy. That approach was anticipated in the Scott River TMDL Action Plan but past waivers and the proposed waivers ignore this approach in favor of the failed voluntary compliance, aka “stewardship” policy.

What the staff is saying is that it wants to practice Einstein-style insanity for another 5 years and then, possibly, get sane. That IS insane. There is need right now for this tiered approach. What it would means is that the bad actors would no longer be protected by the failed “stewardship” policy which eleven years of experience indicates does not work with them. In the name of sanity, to deliver a modicum of environmental justice to the salmon tribes of the Klamath River and others who rely on Public Trust Resources, and to comply with the Basin Plan, the SWRCBs Non-Point Policy and soon-to-be-adopted Enforcement Policy, please adopt the tiered approach now rather than delay it for another 5 years.

2. Prohibit on-stream feedlots (CAFOs):

The most egregious violations of the Scott TMDL Action Plan, occur when feedlots (aka AFOs and CAFOs) are placed along streamcourse. The result is invariably substantial destruction of riparian vegetation and excessive bank trampling. Photos showing two examples are below:

Feedlot on lower Soap Creek, 3-21-2011 *Feedlot on lower Kidder Creek, 10-20-2016*

By definition, a feedlot or CAFO lacks pasture (natural feed) that can sustain the number of animals placed within the lot. On stream CAFOs are incompatible with removing the Scott River Watersheds temperature and sediment impairment. For that reason, they should be prohibited. With a little extra work and a bit of piping, those landowners wishing to operate feedlots can pipe water from the stream to a water trough. There is no need to locate these feedlots/CAFOs right on the stream. Therefore, please include a prohibition on feedlots/CAFOs within 100 feet of streamcourses and include the SWRCB and EPA definitions of AFOs and CAFOs which makes clear that when the majority of feed must be imported to the site, the site is a feedlot or CAFO if it is operated for 45 days or more each year.

3. Quantify and demonstrate the benefits of moving irrigation wells away from Scott River and ending groundwater extraction for irrigation on September 20th.

If any more taxpayer funds are devoted to the UC Davis's Scott River Project those funds should be used to quantify the flow and other benefits that could be realized by moving irrigation wells away from Scott River and by ending groundwater extraction for irrigation on September 20th. No funding should be spent on early irrigation or other water spreading schemes because the impacts of such diversion on salmon nests and salmon outmigration would result in illegal take of ESA and C-ESA

species.

If the UC Davis Team or your staff had asked the DFW folks, they too would have learned quite a while ago that early irrigation poses substantial risks to at risk species and would almost certainly involve “take” of ESA and C-ESA listed Coho salmon. The Board should not pour more taxpayer money into a Project whose agenda is to avoid reduction in groundwater extraction for irrigation and which refuses to consult and work with the Department of Fish and Wildlife. The solutions the UC Davis team proposes can not address Scott River's most pressing flow needs nor aide in restoring water quality to standards.

4. Notify landowners of their obligations

Most private riparian landowners in the Scott River Basin have never been notified of their obligation to allow natural vegetation to exist and grow within the riparian areas on their property in order to provide stream shading and prevent excessive, management-related sedimentation. How can the Board expect them to comply with the Action Plan and waiver when they have not even received notice? That is wrong and should be rectified. Therefore, the Executive Officer should propose and the board should instruct that, once the Order is adopted, a letter will be sent to all private riparian landowners in the Scott River Basin providing them with a copy of the waiver and informing them of their obligations pursuant to the Scott River Action Plan and the new waiver. That would, I think, be the sane thing to do in this situation.

Conclusion

In spite of nearly eleven years since the TMDL Action Plan for Scott River was adopted, there has been no demonstrable progress made toward removing the Scott River's temperature and sediment impairments. Earlier this month, for example, I was in the watershed. In spite of numerous forest road failures this past winter, all the creeks both above and below Scott Valley were running clear with spring snowmelt. Nevertheless Scott River at the exit of Scott Valley ran turbid, carrying excessive sediment. That is a strong indication of the many streambanks in Scott Valley that are still being trampled excessively and where, as a result, natural shade can not develop and sediment delivery is chronic as is clear in the example photos presented above.

We have a TMDL Action Plan for Scott River which, if properly implemented, will remove the Scott River's impairments. Nevertheless, progress toward removing the impairments has not occurred. The problem is the lack of a Waiver that complies with the Basin Plan, the SWRCB Non-Point Policy and the soon to be adopted Enforcement Policy and the lack of will among staff to enforce the Basin Plan. The “stewardship” policy staff has implemented protects the bad actors and takes credit for what responsible landowners would do even if there were no TMDL listing or waiver.

Please rectify these problems by adopting the suggestions and recommendations made herein. Please do not make us wait another five years for effective clean up of the Scott River to begin. Give us a waiver and an approach that responds to the actual situation we face, the lack of progress over eleven years toward removing the impairments and the demonstrated recalcitrance of the bad actors who refuse to properly manage riparian areas on their property. Please recognize that the impairments harm people downstream and their interests and make the changes that will result in environmental justice and the restoration of all beneficial uses of the Scott River and its water.

Sincerely,

Felice Pace
for the North Group Redwood Chapter Sierra Club

List of Attachments

The attachments listed below are either mentioned above or are input on the proposed waiver that has previously been provided to Executive Officer St. John or are responses from him. The input emails to EO St. John and the other attachments listed below have all already been provided to EO St. John and are incorporated into this comment by reference.

- Email to EO St. John from Felice Pace dated May 17, 2017
- Email message from EO St. John to Felice Pace dated May 31, 2017 responding to the May 17th email.
- Email message from Felice Pace to EO St. John dated June 2, 2017
- Email message to Mt. St. John from Felice Pace dated June 6, 2017
- Letter to the SWRCB concerning Temporary Permit 21364 issued to Scott Valley Irrigation District dated December 1, 2016.
- Comment of the North Coast Stream Flow Coalition
- Interim Instream Flow Criteria for the Protection of Fishery Resources in the Scott River Watershed, Siskiyou County, CDFW, February 2017.

NORTH COAST STREAM FLOW COALITION

NCSFC
2945 ATLAS PEAK RD. NAPA, CA. 94558
707.255.7434 Fax. 707.259.1097
www.ourstreamsflow.org

Coalition Member Organizations
Community Clean Water Institute; Forest Unlimited; Friends of Del Norte; Friends of the Eel River; Friends of Green Valley Creek, Friends of the Gualala; Friends of the Navarro Watershed; Institute for Conservation Advocacy, Research and Education; Institute for Fisheries Resources; Klamath Forest Alliance; Living Rivers Council, Maacama Watershed Alliance; Pacific Coast Federation of Fishermen's Associations; Save Mark West Creek; Sonoma County Water Coalition; Sonoma Ecology Center; Willits Environmental Ctr; Willets/Outlet Creek Watershed Group

December 1, 2016

Felicia Marcos, Board Chair
Tom Howard, Executive Officer
Board Members
State Water Quality Control Board
Via Email

Subject: TEMPORARY PERMIT 21364 ISSUED TO THE SCOTT VALLEY IRRIGATION DISTRICT (SVID) FOR DIVERSION AND USE OF WATER FOR GROUNDWATER STORAGE: PROJECT EVALUATION, COMMENT ON THE PROJECT'S SUMMARY REPORT AND RECOMMENDATIONS FOR FUTURE PERMITS ISSUED PURSUANT TO THE BOARD'S PROGRAM TO PERMIT DIVERSION OF SURFACE WATER TO GROUNDWATER STORAGE

Chairperson Marcos, Executive Officer Howard and Board Members,

We write today to share with you our evaluation of the SVID's use of Temporary Permit 21364 which is one of the first two permits issued by the Board for diversion of seasonally high and flood flows to groundwater storage under temporary water right permits, a program created by the Board in January 2016. We also comment on the SVID and UC Extension's Summary Report on the Project and we make recommendations based on these evaluations for prudent actions we recommend the Board and its staff take as the program granting temporary permits to divert seasonally high and flood flows to groundwater storage goes forward.

Groundwater storage has tremendous potential for California; it is likely that some portion of seasonally high and flood flows can be safely diverted to storage. Storage in the ground has obvious advantages over surface storage, mainly little to no evaporation loss. However, diversion of seasonally high and flood flows to groundwater storage also has great potential to further damage stream ecosystems, including ecologically, culturally and economically important salmon and steelhead stocks and other at risk species Therefore, we believe the Board and staff should proceed with caution. In particular we believe permit application and evaluation requirements need adjustment to assure that seasonally high and flood flow diverted for groundwater storage are not needed in stream to protect

and restore stream ecosystems and species at risk in those watersheds from which seasonally high and flood flows are diverted.

Stream science instructs that seasonally high flows and flood flows are needed in order to sustain and restore stream ecosystems and stream ecosystem benefits. Science also instructs that some portion of seasonally high and flood flows can safely be diverted for other purposes, including groundwater storage. The North Coast Stream Flow Coalition believes that scientifically robust flow criteria must be developed in order to properly determine when and how much of seasonally high and flood flows can be diverted from a stream for any purpose. Ideally, flow objectives should have been adopted for a stream by a Regional Water Board or the State Water Board before water to which there are no established water rights is approved for diversion to groundwater storage, whether by temporary permit or any other means.

Our Coalition members are concerned because, in the first year of the groundwater storage program, the SWRCB granted two temporary permits to divert seasonally high and/or flood flows in two watersheds for which no flow criteria have been developed and no flow objectives adopted. In one case (Yolo) the right was granted based on a simple assertion that flood flows are not needed instream. In the other case (Scott) the applicant did not divert in excess of the Forest Service primary right to instream flows in Scott River for fish. However, only the first priority Forest Service right was used; Forest Service surplus and periodic flood flow rights were ignored. Furthermore, the Scott instream right is based on science from the 1960s and 70s; no scientifically current flow criteria for the Scott River has been completed or published and no flow objectives have been adopted by the North Coast Water Board for Scott River.

For these reasons we believe the two first year grants set unfortunate initial precedents and expectations which we hope the SWRCB will not follow or reinforce in future years.

Because of the obvious benefits to irrigation interests from diverting seasonally high and flood flows to groundwater storage, it is reasonable to expect that irrigation and water districts proposing such projects will tend to overestimate potential benefits and underestimate potential negative impacts to stream ecosystems and at risk species. For that reason, we recommend that the board enhance application, monitoring and reporting requirements for this new program. We believe that better focused application, monitoring and reporting requirements will assure that the projects permitted by the Board do not become contentious sources of additional conflict and that the Board's new program is successful, that is, achieves its potential benefits while avoiding further damaging stream ecosystems and at risk species.

Analysis of the Summary Report and the UCD Model

Based on our analysis of the Scott River Irrigation District's Project we believe that the District's claim in the Summary Report that the Project "*can be considered a successful implementation of artificial recharge on agricultural land for groundwater storage and streamflow enhancement...*" is not supported by the actual results as presented in the body of the Summary Report. In particular we believe the UCD model is too simplistic and its parameters are too untested and unverified for it to serve as anything more than a general guide. Because it is too simplistic and untested, we do not believe the UC Extension modeled benefits to streamflow enhancement could be realized in the real world without considerable damage to stream ecosystems and salmonids, including state and federal

ESA listed Coho salmon. The implied claim in the Summary Report that larger and greater diversion of seasonally high flows to groundwater storage will enhance late summer and fall flows in Scott River without significant damage to stream ecosystems and at risk species has not been demonstrated. Finally, unless and until groundwater extraction is effectively regulated, any water put into the ground in hopes of enhancing late summer and fall river flows will be subject to appropriation by groundwater irrigation interests before that water can reach the river or enhance late summer and fall flows. The water may be used to lengthen the irrigation season or on fields not previously irrigated.

On page 9 the Summary Report states:

"With exception to the Bryan-Morris ranch, where the groundwater surface elevation response could be monitored directly on site, it was not possible to quantify the rise in groundwater surface elevation related to groundwater recharge vs. natural recharge from precipitation."

In other words, in a year when precipitation was only slightly above the long term average, only one monitoring well demonstrated that winter irrigation enhanced natural groundwater levels resulting from precipitation, that is, enhanced the ability of groundwater to augment streamflow. In 8 of the 9 monitoring sites and 7 of 8 wells monitored, diversion of surface flows to groundwater storage did not raise the groundwater elevation and therefore did not enhance discharge from groundwater to the Scott River.

The Summary Report states on page 24:

"The results suggest an order of magnitude increase in recharge would be necessary to impact late-summer streamflow. The previous managed aquifer recharge simulations also indicated that maximum gains in streamflow were not recognized until after several consecutive years of treatment."

Perhaps the adjudication's instream flow requirements could be met even with an "order of magnitude" increase in winter/early spring irrigation. But this statement is a far cry from the claim in the Executive Summary. More concerning is the fact that no effort was made to determine if the amount of water the model indicates would need to be diverted to winter-spring irrigation in order to impact late summer flows was actually available without violating the Forest Service instream rights to flows in Scott River, including the right to periodic flushing flows and surplus rights.

Of even more concern is what is revealed by the Report's Figure 32. Actual streamflow at the USGS gage (where the instream right is measured) was significantly reduced during February and March, the period of time diversion pursuant to the temporary permit took place. Both modeling and actual gage measurements indicate that the small diversion to groundwater made this past year reduced flows in the Scott River at the gage by 7.5 cfs. How much would winter-spring irrigation "orders of magnitude" larger over the course of "several consecutive years" have reduced streamflow at the gage? The Report could have modeled that but did not.

Of greater concern still is the failure of SVID and UCD to monitor impacts to Scott River flows and to out-migrating salmon **at and below the point of diversion**, that is, at and below Young's Dam where the SVID diversion from Scott River takes place. The diversion to winter irrigation and thence to groundwater took place from February through April 1st. What flows remained in the stream during those times immediately below the point of diversion and were those flows sufficient to keep salmon nests under water and to not impede the downstream migration of salmonids which begins during the time the diversions were made?

According to the Summary Report's Table 2, under this permit between February 2nd and April 1st SVID diverted at a rate as high as 27.7 cfs and as low 0.5 cfs. What was the impact of such variable diversion rates on habitat and salmon nests located below the point of diversion? Were salmon nests dewatered as a highly variable amount of water was diverted? It appears that those impacts were not monitored.

In the Scott River watershed salmon fry emerge from gravels and begin their migration to the ocean during the period when SVID was diverting water from the Scott River. Were flows below the Young's Dam diversion sufficient for salmon and steelhead to migrate past that point? Why was the Department of Fish & Wildlife not enlisted to monitor the impact of the Project on salmonid migration and salmonid habitat below the Young's Dam diversion?

The SVID's temporary permit application's "Underground Storage Supplement" states on page 4 that the SVID will monitor Scott River flows during implementation of the Project at "River Mile 46 and River Mile 35" in addition to at the USGS Scott River gage (River Mile 21). However, only flows at the USGS gage are reported in the Summary Report. Why is that? Did the monitoring of flows at RN 46 and 35 occur? If not, why not; if so, why were those flows not reported in the Summary Report?

Flow in the reach below the diversion is critical information that should have been reported. The fact that the information was not reported raises serious questions which should be answered before the SWRCB considers additional projects of this nature in the Scott River Basin. Because flow and habitat monitoring in Scott River below the point of diversion was not done (or was not reported) one cannot rule out the possibility that implementation of the Project resulted in "take" of State and Federal ESA listed Coho salmon and other impacts to at risk salmonids.

Furthermore, because monitoring in Scott River below the SVID diversion was not implemented, we have no idea what impacts to Coho and other salmonids would likely occur below the diversion if winter-spring irrigation was increased by "orders of magnitude." Will SVID and UCD now request even larger diversions outside the irrigation season when they have not taken the time to investigate the impacts on stream ecosystems and salmonids of this Project's diversions?

These questions and concerns strongly suggest that in the future SWRCB should require that applicants assess the likely impacts of surface diversion to groundwater on the steams ecosystem and to species of concern. It is arguable that the SVID should have obtained Coho take permits from the CDFW and NMFS for this Project. At minimum, SVID should have consulted with CDFW and NMFS to determine if a take permit was needed. If SVID makes a future proposal to divert "orders of magnitude" more water, as suggested in the summary report, they would certainly need to consult with CDFW and NMFS to determine whether a take permit is needed and to report the results of that consultation in their application.

The above discussion strongly suggests that those applying for temporary permits under this program should be required to consult with CDFW on likely impacts to California ESA listed and candidate species and stream ecosystems and to report the results of that consultation in the application for a temporary permit. Projects which divert seasonally high flows to groundwater storage should also be required to monitor and report impacts to stream ecosystems in the stream reach immediately below points of diversion and to invite CDFW to collaborate in that monitoring.

We asked CDFW managers if they were aware of the SVID's Project and whether they had concerns. The response, which we can provide to the Board, states that DFW does have concerns but was not consulted by SVID, UCD or any other Project collaborators. In light of potential impacts of the diversion on fish and fish habitat, the failure of Project proponents and cooperators to involve CDFW is a concern we hope the Board will share.

As noted on Summary Report page 24, "a (modeled) diversion of 42 cfs for three months (total of ~7500 acre-ft) showed streamflow gains on the order of about 2.5 cfs in the late summer season." However, that simulation used the unrealistic assumption that "all diverted water was recharged to the aquifer" and therefore was available to enhance streamflow. Simulations which unrealistically assumed 100% efficiency, that is, that 100% of the water diverted to groundwater will be available to enhance streamflow, have been presented to the Scott River Basin community and have raised expectations that enhanced irrigation will effectively create more streamflow.

In contrast, for the modeling of this years' groundwater recharge activities 50% recharge efficiency was assumed. The assumption of 50% recharge efficiency recognizes that a certain amount of managed aquifer recharge will not be available to enhance streamflow. Losses include evapotranspiration but mainly groundwater extraction for irrigation.

As indicted by the Summary Report's odd number figures 7 through 23 there were sharp declines in groundwater elevation at monitoring wells beginning between mid March and early April. Those declines indicate cones of depression associated with groundwater extraction for irrigation. In other words, some of the water diverted to groundwater storage was subsequently taken for irrigation via groundwater extraction.

Raising the groundwater elevation makes extraction of groundwater for irrigation less expensive. That may motivate landowners to extract more water either to begin irrigation earlier in the year or to spread extracted water to new fields.

The Summary Report does not provide a basis for using 50% efficiency. Lacking any factual scientific basis for the assumed 50% efficiency figure, it remains possible that a greater or lesser percentage of any water diverted to groundwater storage via late winter-early spring irrigation would not be available to enhance streamflow. **Unless and until groundwater extraction is adequately regulated there is no way to guarantee that water diverted to groundwater storage during late winter and early spring will actually remain in the ground long enough to enhance Scott River flows in late summer.** Without effective groundwater regulation water diverted to groundwater storage could be taken via extraction to extend the irrigation season or to irrigate fields not previously irrigated with groundwater.

It is a cause for concern that this SVID Project to extend the irrigation season in the name of groundwater recharge and flow enhancement has apparently taken place before UCD has a sound basis for its "efficiency" percentage, that is, before there is a solid understanding of how much of any managed groundwater recharge will likely be available to augment river flows. Getting a handle on that efficiency percentage, based on monitoring and measurement, is essential and should be required before additional projects to divert surface water from Scott River or its tributaries to groundwater storage are approved by the Board. Because large amounts of groundwater are extracted for irrigation

in the Scott River Valley each year, it is feasible to determine the efficiency of flow enhancement via groundwater recharge without another project which removes more water from Scott River during the salmon emergence and migration season by extending the Scott Valley Adjudication Decree's irrigation season.

We are also concerned because neither the SVID nor the UCD, nor any of the other cooperators, monitored any of the springs which are the method by which groundwater discharges to Scott River. What was the impact of the Project's late winter-early spring irrigation on those springs? How did the Project affect gaining and loosing reaches of Scott River? We will never know the answers to these questions because no baseline was established and no monitoring was conducted. When actual physical indicators of impacts are available should not those impacts be monitored rather than relying on modeling and, in particular, modeling for which key parameters have not been experientially verified or tested?

In summary, examination of the Project Report and UCD's previously published related work indicates that late-winter and early spring irrigation has unknown but almost certainly limited potential to positively impact Scott River streamflow. Any significant increases in late summer streamflow would occur before the Chinook salmon migration season, that is, before October, would require much larger decreases in late winter and spring river flows during the period of salmon emergence and downstream migration, and could both dewater salmon nests, impede downstream migration and “take” ESA and California ESA listed Coho Salmon. Furthermore, as stated by UCD, to impact streamflow significantly, large diversions would need to take place for several successive years. That could conflict with the Forest Service adjudicated rights, including surplus rights and the right to periodic high flushing flows.

In addition, the greatest flow enhancement, if any is achieved, would occur in early summer when flows are almost always adequate to maintain stream ecosystems and salmonid habitat. Most importantly, most and perhaps all augmentation of groundwater levels via late winter and early spring irrigation could be taken for irrigation via unregulated groundwater extraction, including by some or all of the very people who would also benefit from enhanced yields resulting from late winter-early spring irrigation. This is a very different perspective from that alleged in the Executive Summary of the Project's Summary Report.

In the above discussion of Project impacts and concerns we have suggested changes in application and monitoring requirement for the SWRCB's Groundwater Recharge/Storage Program. These are:

- SWRCB should require that applicants assess and applications report the likely impacts of surface diversion to groundwater on steam ecosystems and to species of concern. If California ESA listed or candidate species are present, applicants should be required to demonstrate that they have consulted with CDFW and that the agency either does not have concerns or that CDFW concerns have been addressed.
- Projects which divert seasonally high flows to groundwater storage should be required to monitor and report impacts to stream ecosystems in the stream reach immediately below points of diversion and to invite CDFW and other interested parties, including federal tribes, to collaborate in that monitoring.
- Unless and until groundwater extraction is adequately regulated, there is no way to guarantee that water diverted to groundwater storage will not be taken by unregulated groundwater extraction. Therefore, projects proposing to divert surface flows to groundwater in order to

enhance streamflow should be required to discuss why that water will not be taken by unregulated groundwater extraction before it has an opportunity to discharge to a stream and thereby enhance that stream's flow.

- The SWRCB should require that, where feasible, actual measurements to determine project impacts are monitored and reported rather than modeling impacts. Where modeling is used to estimate impacts, applicants should be required to include a statement from the principle model developer on the robustness, uncertainty and sensitivity of the model used to estimate impacts.

As we were composing this letter, the North Coast Stream Flow Coalition reached out to Doctor Harter, overall lead on the groundwater modeling, and Doctor Danhkle, lead author of the Project Report, with our concerns about the model, the report and the expectations that the report and presentation of the model have raised among Scott River Basin irrigators. We sought answers to our questions and comments on our interpretations. Attached to this letter is a document stating the concerns we shared with Dr. Danhkle, Dr. Harter and the other authors, cooperators and contributors. Some, but not all, of those concerns are summarized above.

We request that the SWRCB convene a meeting of interested parties to further explore what the actual impacts of the SVID groundwater storage project were and what those impacts tell us about the potential for diverting seasonally high and flood flows to groundwater storage. We believe such a meeting would be of substantial use to the SWRCB staff as they work toward programs that make use of the portion of seasonally high and flood flows which can safely be diverted from streams for groundwater storage. For those with interests in the Scott River, its water and its fish, such a meeting could serve to get us all on the same page and that, we believe, would serve all interests as we prepare for Scott River Basin groundwater planning and future challenges and opportunities for water management in the Scott River Basin going forward.

Sincerely,

Signed via Email
Felice Pace
for the North Coast Stream Flow Coalition.

November 20, 2016 email message from Felice Pace to UCD lead investigator, Thomas Harter, UCD SVID Project Summary Report author Helen E. Dahlke and their student Gus Tolley concerning the UCD Scott Valley Groundwater and Stream Depletion Model and the Summary Report for SWRCB Application T032564 and Temporary Permit 21364

Dear Dr. Harter, Dr. Dahlke and Gus Tolley,

Below is a summary of my concerns about the Scott Valley Model as a predictive tool for use in water management and about the SVID Project and the Summary Report for Temporary Water Right Permit 21364. I would be very happy to learn that some or all of these concerns are unfounded and I invite communication to that end. I am drafting a letter to the SWRCB that expresses these concerns. In that

letter I suggest a meeting among SWRCB staff, UCD, SVID, the North Coast Stream Flow Coalition whom I represent and interested parties, including the Karuk and QVIR Tribes, to hash out and better understand the Project's impacts and the Summary Report's assertions and conclusions. However, if some of these concerns can be cleared up before the letter is sent I would consider that a good thing.

Before too long everyone receiving this, or the interests they represent, will be involved in groundwater planning pursuant to SGMA. The USD Groundwater model will almost certainly be used during that process. I believe it is in everyones interest to better understand the models capabilities and its limitations and to work to make sure the model does not become a political tool used by one interest to advance its agenda. I hope the UCD folks involved are also interested in making sure that a model which bears the university's name is not used as a partisan political tool. Those are my objectives here. SGMA requires and assures that all interests must be significantly involved in that planning process; if the USD model is going to be useful in that process it must not be used as a tool to advance partisan agendas.

While my concerns are mainly related to UCD's work, publications and involvement, as a courtesy I have cc'ed Jim Morris who is a co-author of the Summary Report and an SVID member and those listed on the Summary Report's title page as having contributed to the report, that is: Preston Harris, Erich Yokel, Gary Black and Steve Orloff.

Concern 1: The Summary Report does not acknowledge significant limitations of the predictive model and the fact that calibration of parameters has been limited. Below are a few of the limitations of the model which indicate that caution should be exercised when using it to predict the results of water management actions. These are taken from Foglia et al.....:

The soil water budget approach includes the managed components of the surface water system (diversions) and of the groundwater system (extraction), as well as groundwater recharge from managed and unmanaged land-uses. (but no subtraction for unmanaged vegetation)

The water budget model applied only within the valley area as defined by the Land Use Map in Foglia, et al. There is a significant amount of diversion to irrigation, as well as some amount of groundwater withdrawal, in areas upslope of the Valley Area, most significantly in the East Fork that are not accounted for. There is no attempt to acknowledge this limitation or to estimate the magnitude of influences outside the model area on streamflow.

The model does not account for annual direct recharge from the stream system to groundwater that is subsequently discharged back to the stream. Both, actual recharge from and groundwater discharge to the stream are likely larger.

“The complex interaction of the groundwater system with streams and tributaries are not accounted for here. This includes hyporheic zone exchanges due to streambed topography and groundwater-surface water exchanges due to the larger scale streambed and water table variability” [e.g.,Wondzell et al., 2009; Boano et al., 2010].

Concern 2: The Summary Report refers to “previously modeled managed aquifer recharge scenarios assuming a diversion of 42 cfs for three months (total of ~7500 acre-ft)” and states those scenarios “showed streamflow gains on the order of about 2.5 cfs in the late summer season” which would “correspond to approximately 8-25% increase in late-summer streamflow depending on the year.” The report then clarifies that “these simulations assumed that all diverted water was recharged to the aquifer.” There is no citation given for the “previously modeled” simulation. Can you provide the citation?

I would like to know if that or similar simulations which do not adjust for “recharge efficiency” have been presented to agricultural interests and others in the Scott Valley. If so, it is very likely that expectations have been raised that can not be fulfilled. My concern from the outset with proposals to divert more surface flows to irrigation and subsequent groundwater storage is that the water will be “taken” via groundwater extraction before it has an opportunity to discharge into the River. This concern is based on the actual water history of the Scott River Basin rather than modeling. And it is exactly what we see indicated by the SVID Project's Summary Report odd numbered figures 7 though 23, 26 and 27.

Concern 3: The previous mentioned aquifer recharge simulations, unadjusted for “efficiency”, which is, for the most part, really a euphemism for groundwater extraction, also indicated that maximum gains in streamflow were not recognized until after several consecutive years of surface flow diversion to groundwater storage. The second SVID Project model run mentioned in the Summary Report, the one adjusted for groundwater extraction, used 50% as the portion of recharge taken by subsequent groundwater extraction. What is the basis for using 50%? Doesn't Figure 3 from Foglia et al suggest a different adjustment figure?

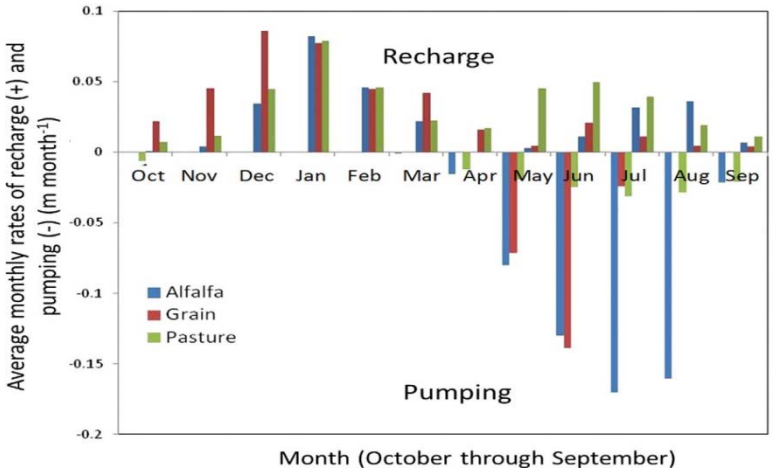


Figure 3. Simulated monthly rates of recharge and pumping (m month A1) for each of the three main landuses as calculated with the water budget model.

Concern 4: My analysis, so far, of the SVID Project's results as presented in the Summary Report and in light of Foglia, et al suggest a conclusion quite different than the conclusion Doctor Dahlke reaches in the Executive Summary of the Project's Summary Report. I believe this experiment in groundwater recharge indicates that the potential for late-winter-early-spring irrigation to significantly impact late summer and fall flows in Scott River is limited and would likely require very large amounts of water applied over many years. It is not clear that amount of water could be removed in successive years without significant negative impacts to streamflow, particularly spring and early summer streamflows which are essential to salmonid outmigration. It is concerning that neither this caution not the models limitations and need for calibration are acknowledged or noted in the Summary Report.

Concern 5: In addition, and after taking another look at Foglia, et al, I am concerned that the model may simply be too simple to, at this point, be used to guide water management. It seems to me that a

lot more testing using actual data on impacts and subsequent model adjustment are needed before the model can serve as anything but a gross approximation of the results of management changes. The 50% figure cited above is a case in point. I am also concerned that significant areas of diversion, irrigation and recharge that impact streamflow are not within the geographical purview of the model. Here I think especially about the East Fork but also the South Fork and other tributaries.

Concern 6: I worry that the cumulative impact of model simplifications, model and simulation assumptions and the exclusion of significant lands and water uses that impact streamflow renders the model highly sensitive, that is, the results could be right on the money (reality) or they could be far off base (fantasy). In this regard I wonder if the model has been subjected to Sensitivity Analysis or (especially) Uncertainty Analysis. Here's what Wikipedia says about Uncertainty Analysis:

Uncertainty analysis *investigates the uncertainty of variables that are used in decision-making problems in which observations and models represent the knowledge base. In other words, uncertainty analysis aims to make a technical contribution to decision-making through the quantification of uncertainties in the relevant variables.....*

A calibrated parameter does not necessarily represent reality, as reality is much more complex. Any prediction has its own complexities of reality that cannot be represented uniquely in the calibrated model; therefore, there is a potential error. Such error must be accounted for when making management decisions on the basis of model outcomes.

Don't the parameters used in the Scott Valley model require additional calibration before the model can reliably be used to guide water management in Scott Valley and shouldn't UCD get a better idea of the models sensitivity and uncertainty before recommending it as a guide to water management? If so, shouldn't that have been acknowledged in the Summary Report and that reports Executive Summary?

Concern 7: No attempt was apparently made to measure and report Scott River flow below the Project's diversion point at Young's dam. It would have been instructive to know what percentage of the flow was removed each day the Project diverted water. More importantly no one was asked or enlisted to look at the impacts of February through March Project withdrawals on habitat (including possible salmon nests) and salmonid out migration below the point of diversion at Young's Dam. Those impacts could have been assessed by CDFW, the Karuk Tribe's fisheries biologists, or a consulting biologist. Those biologists could have also shed light on the likely impact of withdrawals at Young's Dam which would be “orders of magnitude larger” and which would be sustained for several consecutive years, i.e. the characteristics of a project that, according to the model, could significantly impact late summer Scott River flows. The failure to do any of those things or even to acknowledge them as issues that need to be examined in any future experiments is concerning.

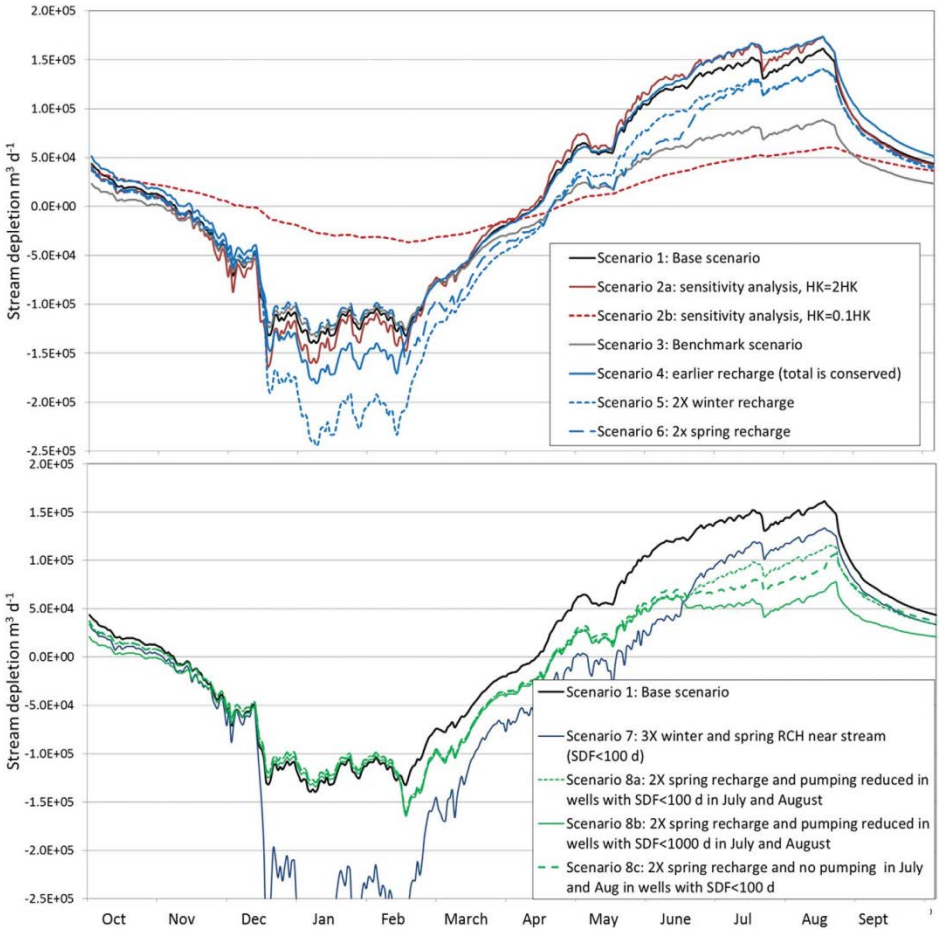
Concern 8: Unless and until groundwater extraction is effectively controlled and limited, any water diverted to raise groundwater elevations on the East Side of Scott Valley could legally be taken by any landowner wanting to extend the season of irrigation via groundwater extraction or to extend irrigation to additional fields that are not currently irrigated. By raising the water table, diversion of additional surface flows will make extending the season of irrigation or the area of irrigation significantly less expensive for landowners. In this way future SVID Projects of this nature that take place before groundwater extraction is effectively controlled and managed could result in increased groundwater extraction and decreased flows in Scott River.

Concern 9: As displayed in Foglia et al Figure 7 (reproduced below) if one only uses winter-spring increased irrigation to raise groundwater elevations one must deplete winter and spring flows orders of magnitude larger than the corresponding modest increase in late summer and fall flows. In other words, the bulk of the increased irrigation is taken by groundwater extraction and ET and never reaches Scott River. If, however, one couples winter-spring irrigation with ending pumping within 1,000 feet of Scott River in July and August one gets a much more significant reduction in late summer fall stream depletion. I interpret that as an indication that prohibiting pumping in July and August near the Scott River is much more effective at mitigating late summer and fall stream depletion as compared to extending the irrigation season into late winter and early spring.

It is unfortunate and a concern that Foglia et al did not include modeled scenarios that only ended pumping near the river and scenarios that ended pumping near the river in September and October and just in October. Future projects to "test" the model claiming as a purpose benefiting late summer and fall streamflow, should prioritize tests of the impact of eliminating groundwater pumping near Scott River, that is, they should include a test of the method the model says is most effective in reducing late summer/fall stream depletion.

UCD folks, please model the impact to stream depletion functions/streamflow of ending pumping within 1000 feet of Scott River for various time frames from August through October and share those scenarios with interested parties. And lets use Prop 50 or other funds to compensate groundwater extractors and test the impact to stream flow/stream depletion by ending extraction for irrigation within 1000 feet of the River based on those modeled scenarios. That would have a limited impact on annual agricultural yields and a likely significant impact on stream depletion.

Here's Figure 7 from Foglia, et al.:



To summarize, at heart I have four overarching concerns about the Summary Report, how the model has been and will be used, including in “education” as per the UCD's web page on the Project, and UCD's involvement in the Scott River Basin. These overarching concerns flow from my experiences living full time in the Valley from 1976 until 2002, part time until recently, and working on Scott River Basin water and natural resource issues since the early 1980s. That experience has included efforts to work with and also conflicts with the Valley's farmers, ranchers, farm advisors and politicians of many stripes. These concerns are:

That the model has been and will be presented in a manner that does not acknowledge or downplays its limitations as a predictive and management tool and which raise expectations which cannot be realized about the efficacy of extending the irrigation season into late-winter and early spring in order to enhance flows for fish.

That model runs and related claims will be used to justify additional temporary permits and multi-year out-of-season irrigation withdrawals from the Scott River and or tributaries before model parameters are sufficiently calibrated, that is, adjusted based on real data, so as to reduce the models sensitivity and uncertainty significantly and before groundwater extraction is effectively controlled.

That future out-of season irrigation projects/experiments will continue the precedent of not looking at the impact of project diversions on flows, aquatic habitat and species of concern, especially in the stream reach immediately below the point of diversion.

That for the above reasons, the UCD's work in Scott Valley will lead to more, not less, conflict.

NORTH COAST STREAM FLOW COALITION

NCSFC
2945 ATLAS PEAK RD. NAPA, CA. 94558
707.255.7434 Fax. 707.259.1097
www.ourstreamsflow.org

Coalition Member Organizations
Community Clean Water Institute; Forest Unlimited; Friends of Del Norte; Friends of the Eel River; Friends of Green Valley Creek, Friends of the Gualala; Friends of the Navarro Watershed; Institute for Conservation Advocacy, Research and Education; Institute for Fisheries Resources; Klamath Forest Alliance; Living Rivers Council, Maacama Watershed Alliance; Pacific Coast Federation of Fishermen's Associations; Save Mark West Creek; Sonoma County Water Coalition; Sonoma Ecology Center; Willits Environmental Ctr; Willets/Outlet Creek Watershed Group

December 1, 2016

Felicia Marcos, Board Chair
Tom Howard, Executive Officer
Board Members
State Water Quality Control Board
Via Email

Subject: TEMPORARY PERMIT 21364 ISSUED TO THE SCOTT VALLEY IRRIGATION DISTRICT (SVID) FOR DIVERSION AND USE OF WATER FOR GROUNDWATER STORAGE: PROJECT EVALUATION, COMMENT ON THE PROJECT'S SUMMARY REPORT AND RECOMMENDATIONS FOR FUTURE PERMITS ISSUED PURSUANT TO THE BOARD'S PROGRAM TO PERMIT DIVERSION OF SURFACE WATER TO GROUNDWATER STORAGE

Chairperson Marcos, Executive Officer Howard and Board Members,

We write today to share with you our evaluation of the SVID's use of Temporary Permit 21364 which is one of the first two permits issued by the Board for diversion of seasonally high and flood flows to groundwater storage under temporary water right permits, a program created by the Board in January 2016. We also comment on the SVID and UC Extension's Summary Report on the Project and we make recommendations based on these evaluations for prudent actions we recommend the Board and its staff take as the program granting temporary permits to divert seasonally high and flood flows to groundwater storage goes forward.

Groundwater storage has tremendous potential for California; it is likely that some portion of seasonally high and flood flows can be safely diverted to storage. Storage in the ground has obvious advantages over surface storage, mainly little to no evaporation loss. However, diversion of seasonally high and flood flows to groundwater storage also has great potential to further damage stream ecosystems, including ecologically, culturally and economically important salmon and steelhead stocks and other at risk species Therefore, we believe the Board and staff should proceed with caution. In particular we believe permit application and evaluation requirements need adjustment to assure that seasonally high and flood flow diverted for groundwater storage are not needed in stream to protect and restore stream ecosystems and species at risk in those watersheds from which seasonally high and flood flows are diverted.

Stream science instructs that seasonally high flows and flood flows are needed in order to sustain and restore stream ecosystems and stream ecosystem benefits. Science also instructs that some portion of seasonally high and flood flows can safely be diverted for other purposes, including groundwater storage. The North Coast Stream Flow Coalition believes that scientifically robust flow criteria must be developed in order to properly determine when and how much of seasonally high and flood flows can be diverted from a stream for any purpose. Ideally, flow objectives should have been adopted for a stream by a Regional Water Board or the State Water Board before water to which there are no established water rights is approved for diversion to groundwater storage, whether by temporary permit or any other means.

Our Coalition members are concerned because, in the first year of the groundwater storage program, the SWRCB granted two temporary permits to divert seasonally high and/or flood flows in two watersheds for which no flow criteria have been developed and no flow objectives adopted. In one case (Yolo) the right was granted based on a simple assertion that flood flows are not needed instream. In the other case (Scott) the applicant did not divert in excess of the Forest Service primary right to instream flows in Scott River for fish. However, only the first priority Forest Service right was used; Forest Service surplus and periodic flood flow rights were ignored. Furthermore, the Scott instream right is based on science from the 1960s and 70s; no scientifically current flow criteria for the Scott River has been completed or published and no flow objectives have been adopted by the North Coast Water Board for Scott River.

For these reasons we believe the two first year grants set unfortunate initial precedents and expectations which we hope the SWRCB will not follow or reinforce in future years.

Because of the obvious benefits to irrigation interests from diverting seasonally high and flood flows to groundwater storage, it is reasonable to expect that irrigation and water districts proposing such projects will tend to overestimate potential benefits and underestimate potential negative impacts to stream ecosystems and at risk species. For that reason, we recommend that the board enhance application, monitoring and reporting requirements for this new program. We believe that better focused application, monitoring and reporting requirements will assure that the projects permitted by the Board do not become contentious sources of additional conflict and that the Board's new program is successful, that is, achieves its potential benefits while avoiding further damaging stream ecosystems and at risk species.

Analysis of the Summary Report and the UCD Model

Based on our analysis of the Scott River Irrigation District's Project we believe that the District's claim in the Summary Report that the Project "*can be considered a successful implementation of artificial recharge on agricultural land for groundwater storage and streamflow enhancement...*" is not supported by the actual results as presented in the body of the Summary Report. In particular we believe the UCD model is too simplistic and its parameters are too untested and unverified for it to serve as anything more than a general guide. Because it is too simplistic and untested, we do not believe the UC Extension modeled benefits to streamflow enhancement could be realized in the real world without considerable damage to stream ecosystems and salmonids, including state and federal ESA listed Coho salmon. The implied claim in the Summary Report that larger and greater diversion of seasonally high flows to groundwater storage will enhance late summer and fall flows in Scott River without significant damage to stream ecosystems and at risk species has not been demonstrated. Finally, unless and until groundwater extraction is effectively regulated, any water put into the ground

in hopes of enhancing late summer and fall river flows will be subject to appropriation by groundwater irrigation interests before that water can reach the river or enhance late summer and fall flows. The water may be used to lengthen the irrigation season or on fields not previously irrigated.

On page 9 the Summary Report states:

"With exception to the Bryan-Morris ranch, where the groundwater surface elevation response could be monitored directly on site, it was not possible to quantify the rise in groundwater surface elevation related to groundwater recharge vs. natural recharge from precipitation."

In other words, in a year when precipitation was only slightly above the long term average, only one monitoring well demonstrated that winter irrigation enhanced natural groundwater levels resulting from precipitation, that is, enhanced the ability of groundwater to augment streamflow. In 8 of the 9 monitoring sites and 7 of 8 wells monitored, diversion of surface flows to groundwater storage did not raise the groundwater elevation and therefore did not enhance discharge from groundwater to the Scott River.

The Summary Report states on page 24:

"The results suggest an order of magnitude increase in recharge would be necessary to impact late-summer streamflow. The previous managed aquifer recharge simulations also indicated that maximum gains in streamflow were not recognized until after several consecutive years of treatment."

Perhaps the adjudication's instream flow requirements could be met even with an "order of magnitude" increase in winter/early spring irrigation. But this statement is a far cry from the claim in the Executive Summary. More concerning is the fact that no effort was made to determine if the amount of water the model indicates would need to be diverted to winter-spring irrigation in order to impact late summer flows was actually available without violating the Forest Service instream rights to flows in Scott River, including the right to periodic flushing flows and surplus rights.

Of even more concern is what is revealed by the Report's Figure 32. Actual streamflow at the USGS gage (where the instream right is measured) was significantly reduced during February and March, the period of time diversion pursuant to the temporary permit took place. Both modeling and actual gage measurements indicate that the small diversion to groundwater made this past year reduced flows in the Scott River at the gage by 7.5 cfs. How much would winter-spring irrigation "orders of magnitude" larger over the course of "several consecutive years" have reduced streamflow at the gage? The Report could have modeled that but did not.

Of greater concern still is the failure of SVID and UCD to monitor impacts to Scott River flows and to out-migrating salmon **at and below the point of diversion**, that is, at and below Young's Dam where the SVID diversion from Scott River takes place. The diversion to winter irrigation and thence to groundwater took place from February through April 1st. What flows remained in the stream during those times immediately below the point of diversion and were those flows sufficient to keep salmon nests under water and to not impede the downstream migration of salmonids which begins during the time the diversions were made?

According to the Summary Report's Table 2, under this permit between February 2nd and April 1st SVID diverted at a rate as high as 27.7 cfs and as low 0.5 cfs. What was the impact of such variable diversion rates on habitat and salmon nests located below the point of diversion? Were salmon nests dewatered as a highly variable amount of water was diverted? It appears that those impacts were not monitored.

In the Scott River watershed salmon fry emerge from gravels and begin their migration to the ocean during the period when SVID was diverting water from the Scott River. Were flows below the Young's Dam diversion sufficient for salmon and steelhead to migrate past that point? Why was the Department of Fish & Wildlife not enlisted to monitor the impact of the Project on salmonid migration and salmonid habitat below the Young's Dam diversion?

The SVID's temporary permit application's "Underground Storage Supplement" states on page 4 that the SVID will monitor Scott River flows during implementation of the Project at "River Mile 46 and River Mile 35" in addition to at the USGS Scott River gage (River Mile 21). However, only flows at the USGS gage are reported in the Summary Report. Why is that? Did the monitoring of flows at RN 46 and 35 occur? If not, why not; if so, why were those flows not reported in the Summary Report?

Flow in the reach below the diversion is critical information that should have been reported. The fact that the information was not reported raises serious questions which should be answered before the SWRCB considers additional projects of this nature in the Scott River Basin. Because flow and habitat monitoring in Scott River below the point of diversion was not done (or was not reported) one cannot rule out the possibility that implementation of the Project resulted in "take" of State and Federal ESA listed Coho salmon and other impacts to at risk salmonids.

Furthermore, because monitoring in Scott River below the SVID diversion was not implemented, we have no idea what impacts to Coho and other salmonids would likely occur below the diversion if winter-spring irrigation was increased by "orders of magnitude." Will SVID and UCD now request even larger diversions outside the irrigation season when they have not taken the time to investigate the impacts on stream ecosystems and salmonids of this Project's diversions?

These questions and concerns strongly suggest that in the future SWRCB should require that applicants assess the likely impacts of surface diversion to groundwater on the steams ecosystem and to species of concern. It is arguable that the SVID should have obtained Coho take permits from the CDFW and NMFS for this Project. At minimum, SVID should have consulted with CDFW and NMFS to determine if a take permit was needed. If SVID makes a future proposal to divert "orders of magnitude" more water, as suggested in the summary report, they would certainly need to consult with CDFW and NMFS to determine whether a take permit is needed and to report the results of that consultation in their application.

The above discussion strongly suggests that those applying for temporary permits under this program should be required to consult with CDFW on likely impacts to California ESA listed and candidate species and stream ecosystems and to report the results of that consultation in the application for a temporary permit. Projects which divert seasonally high flows to groundwater storage should also be required to monitor and report impacts to stream ecosystems in the stream reach immediately below points of diversion and to invite CDFW to collaborate in that monitoring.

We asked CDFW managers if they were aware of the SVID's Project and whether they had concerns. The response, which we can provide to the Board, states that DFW does have concerns but was not consulted by SVID, UCD or any other Project collaborators. In light of potential impacts of the diversion on fish and fish habitat, the failure of Project proponents and cooperators to involve CDFW is a concern we hope the Board will share.

As noted on Summary Report page 24, "a (modeled) diversion of 42 cfs for three months (total of

~7500 acre-ft) showed streamflow gains on the order of about 2.5 cfs in the late summer season." However, that simulation used the unrealistic assumption that "all diverted water was recharged to the aquifer" and therefore was available to enhance streamflow. Simulations which unrealistically assumed 100% efficiency, that is, that 100% of the water diverted to groundwater will be available to enhance streamflow, have been presented to the Scott River Basin community and have raised expectations that enhanced irrigation will effectively create more streamflow.

In contrast, for the modeling of this years' groundwater recharge activities 50% recharge efficiency was assumed. The assumption of 50% recharge efficiency recognizes that a certain amount of managed aquifer recharge will not be available to enhance streamflow. Losses include evapotranspiration but mainly groundwater extraction for irrigation.

As indicted by the Summary Report's odd number figures 7 through 23 there were sharp declines in groundwater elevation at monitoring wells beginning between mid March and early April. Those declines indicate cones of depression associated with groundwater extraction for irrigation. In other words, some of the water diverted to groundwater storage was subsequently taken for irrigation via groundwater extraction.

Raising the groundwater elevation makes extraction of groundwater for irrigation less expensive. That may motivate landowners to extract more water either to begin irrigation earlier in the year or to spread extracted water to new fields.

The Summary Report does not provide a basis for using 50% efficiency. Lacking any factual scientific basis for the assumed 50% efficiency figure, it remains possible that a greater or lesser percentage of any water diverted to groundwater storage via late winter-early spring irrigation would not be available to enhance streamflow. **Unless and until groundwater extraction is adequately regulated there is no way to guarantee that water diverted to groundwater storage during late winter and early spring will actually remain in the ground long enough to enhance Scott River flows in late summer.** Without effective groundwater regulation water diverted to groundwater storage could be taken via extraction to extend the irrigation season or to irrigate fields not previously irrigated with groundwater.

It is a cause for concern that this SVID Project to extend the irrigation season in the name of groundwater recharge and flow enhancement has apparently taken place before UCD has a sound basis for its "efficiency" percentage, that is, before there is a solid understanding of how much of any managed groundwater recharge will likely be available to augment river flows. Getting a handle on that efficiency percentage, based on monitoring and measurement, is essential and should be required before additional projects to divert surface water from Scott River or its tributaries to groundwater storage are approved by the Board. Because large amounts of groundwater are extracted for irrigation in the Scott River Valley each year, it is feasible to determine the efficiency of flow enhancement via groundwater recharge without another project which removes more water from Scott River during the salmon emergence and migration season by extending the Scott Valley Adjudication Decree's irrigation season.

We are also concerned because neither the SVID nor the UCD, nor any of the other cooperators, monitored any of the springs which are the method by which groundwater discharges to Scott River. What was the impact of the Project's late winter-early spring irrigation on those springs? How did the Project affect gaining and loosing reaches of Scott River? We will never know the answers to these questions because no baseline was established and no monitoring was conducted. When actual physical

indicators of impacts are available should not those impacts be monitored rather than relying on modeling and, in particular, modeling for which key parameters have not been experientially verified or tested?

In summary, examination of the Project Report and UCD's previously published related work indicates that late-winter and early spring irrigation has unknown but almost certainly limited potential to positively impact Scott River streamflow. Any significant increases in late summer streamflow would occur before the Chinook salmon migration season, that is, before October, would require much larger decreases in late winter and spring river flows during the period of salmon emergence and downstream migration, and could both dewater salmon nests, impede downstream migration and “take” ESA and California ESA listed Coho Salmon. Furthermore, as stated by UCD, to impact streamflow significantly, large diversions would need to take place for several successive years. That could conflict with the Forest Service adjudicated rights, including surplus rights and the right to periodic high flushing flows.

In addition, the greatest flow enhancement, if any is achieved, would occur in early summer when flows are almost always adequate to maintain stream ecosystems and salmonid habitat. Most importantly, most and perhaps all augmentation of groundwater levels via late winter and early spring irrigation could be taken for irrigation via unregulated groundwater extraction, including by some or all of the very people who would also benefit from enhanced yields resulting from late winter-early spring irrigation. This is a very different perspective from that alleged in the Executive Summary of the Project's Summary Report.

In the above discussion of Project impacts and concerns we have suggested changes in application and monitoring requirement for the SWRCB's Groundwater Recharge/Storage Program. These are:

1. SWRCB should require that applicants assess and applications report the likely impacts of surface diversion to groundwater on steam ecosystems and to species of concern. If California ESA listed or candidate species are present, applicants should be required to demonstrate that they have consulted with CDFW and that the agency either does not have concerns or that CDFW concerns have been addressed.
2. Projects which divert seasonally high flows to groundwater storage should be required to monitor and report impacts to stream ecosystems in the stream reach immediately below points of diversion and to invite CDFW and other interested parties, including federal tribes, to collaborate in that monitoring.
3. Unless and until groundwater extraction is adequately regulated, there is no way to guarantee that water diverted to groundwater storage will not be taken by unregulated groundwater extraction. Therefore, projects proposing to divert surface flows to groundwater in order to enhance streamflow should be required to discuss why that water will not be taken by unregulated groundwater extraction before it has an opportunity to discharge to a stream and thereby enhance that stream’s flow.
4. The SWRCB should require that, where feasible, actual measurements to determine project impacts are monitored and reported rather than modeling impacts. Where modeling is used to estimate impacts, applicants should be required to include a statement from the principle model developer on the robustness, uncertainty and sensitivity of the model used to estimate impacts.

As we were composing this letter, the North Coast Stream Flow Coalition reached out to Doctor Harter, overall lead on the groundwater modeling, and Doctor Danhkle, lead author of the Project Report, with our concerns about the model, the report and the expectations that the report and presentation of the model have raised among Scott River Basin irrigators. We sought answers to our questions and

comments on our interpretations. Attached to this letter is a document stating the concerns we shared with Dr. Danhkle, Dr. Harter and the other authors, cooperators and contributors. Some, but not all, of those concerns are summarized above.

We request that the SWRCB convene a meeting of interested parties to further explore what the actual impacts of the SVID groundwater storage project were and what those impacts tell us about the potential for diverting seasonally high and flood flows to groundwater storage. We believe such a meeting would be of substantial use to the SWRCB staff as they work toward programs that make use of the portion of seasonally high and flood flows which can safely be diverted from streams for groundwater storage. For those with interests in the Scott River, its water and its fish, such a meeting could serve to get us all on the same page and that, we believe, would serve all interests as we prepare for Scott River Basin groundwater planning and future challenges and opportunities for water management in the Scott River Basin going forward.

Sincerely,

Signed via Email
Felice Pace
for the North Coast Stream Flow Coalition.

November 20, 2016 email message from Felice Pace to UCD lead investigator, Thomas Harter, UCD SVID Project Summary Report author Helen E. Dahlke and their student Gus Tolley concerning the UCD Scott Valley Groundwater and Stream Depletion Model and the Summary Report for SWRCB Application T032564 and Temporary Permit 21364

Dear Dr. Harter, Dr. Dahlke and Gus Tolley,

Below is a summary of my concerns about the Scott Valley Model as a predictive tool for use in water management and about the SVID Project and the Summary Report for Temporary Water Right Permit 21364. I would be very happy to learn that some or all of these concerns are unfounded and I invite communication to that end. I am drafting a letter to the SWRCB that expresses these concerns. In that letter I suggest a meeting among SWRCB staff, UCD, SVID, the North Coast Stream Flow Coalition whom I represent and interested parties, including the Karuk and QVIR Tribes, to hash out and better understand the Project's impacts and the Summary Report's assertions and conclusions. However, if some of these concerns can be cleared up before the letter is sent I would consider that a good thing.

Before too long everyone receiving this, or the interests they represent, will be involved in groundwater planning pursuant to SGMA. The USD Groundwater model will almost certainly be used during that process. I believe it is in everyones interest to better understand the models capabilities and its limitations and to work to make sure the model does not become a political tool used by one interest to advance its agenda. I hope the UCD folks involved are also interested in making sure that a model which bears the university's name is not used as a partisan political tool. Those are my objectives here. SGMA requires and assures that all interests must be significantly involved in that planning process; if the USD model is going to be useful in that process it must not be used as a tool to advance partisan

agendas.

While my concerns are mainly related to UCD's work, publications and involvement, as a courtesy I have cc'ed Jim Morris who is a co-author of the Summary Report and an SVID member and those listed on the Summary Report's title page as having contributed to the report, that is: Preston Harris, Erich Yokel, Gary Black and Steve Orloff.

Concern 1: The Summary Report does not acknowledge significant limitations of the predictive model and the fact that calibration of parameters has been limited. Below are a few of the limitations of the model which indicate that caution should be exercised when using it to predict the results of water management actions. These are taken from Foglia et al.....:

- The soil water budget approach includes the managed components of the surface water system (diversions) and of the groundwater system (extraction), as well as groundwater recharge from managed and unmanaged land-uses. (but no subtraction for unmanaged vegetation)
- The water budget model applied only within the valley area as defined by the Land Use Map in Foglia, et al. There is a significant amount of diversion to irrigation, as well as some amount of groundwater withdrawal, in areas upslope of the Valley Area, most significantly in the East Fork that are not accounted for. There is no attempt to acknowledge this limitation or to estimate the magnitude of influences outside the model area on streamflow.
- The model does not account for annual direct recharge from the stream system to groundwater that is subsequently discharged back to the stream. Both, actual recharge from and groundwater discharge to the stream are likely larger.
- "The complex interaction of the groundwater system with streams and tributaries are not accounted for here. This includes hyporheic zone exchanges due to streambed topography and groundwater-surface water exchanges due to the larger scale streambed and water table variability" [e.g.,Wondzell et al., 2009; Boano et al., 2010].

Concern 2: The Summary Report refers to "previously modeled managed aquifer recharge scenarios assuming a diversion of 42 cfs for three months (total of ~7500 acre-ft)" and states those scenarios "showed streamflow gains on the order of about 2.5 cfs in the late summer season" which would "correspond to approximately 8-25% increase in late-summer streamflow depending on the year." The report then clarifies that "these simulations assumed that all diverted water was recharged to the aquifer." There is no citation given for the "previously modeled" simulation. Can you provide the citation?

I would like to know if that or similar simulations which do not adjust for "recharge efficiency" have been presented to agricultural interests and others in the Scott Valley. If so, it is very likely that expectations have been raised that can not be fulfilled. My concern from the outset with proposals to divert more surface flows to irrigation and subsequent groundwater storage is that the water will be "taken" via groundwater extraction before it has an opportunity to discharge into the River. This concern is based on the actual water history of the Scott River Basin rather than modeling. And it is exactly what we see indicated by the SVID Project's Summary Report odd numbered figures 7 though 23, 26 and 27.

Concern 3: The previous mentioned aquifer recharge simulations, unadjusted for "efficiency", which is, for the most part, really a euphemism for groundwater extraction, also indicated that maximum gains in streamflow were not recognized until after several consecutive years of surface flow diversion to groundwater storage. The second SVID Project model run mentioned in the Summary Report, the one

adjusted for groundwater extraction, used 50% as the portion of recharge taken by subsequent groundwater extraction. What is the basis for using 50%? Doesn't Figure 3 from Foglia et al suggest a different adjustment figure?

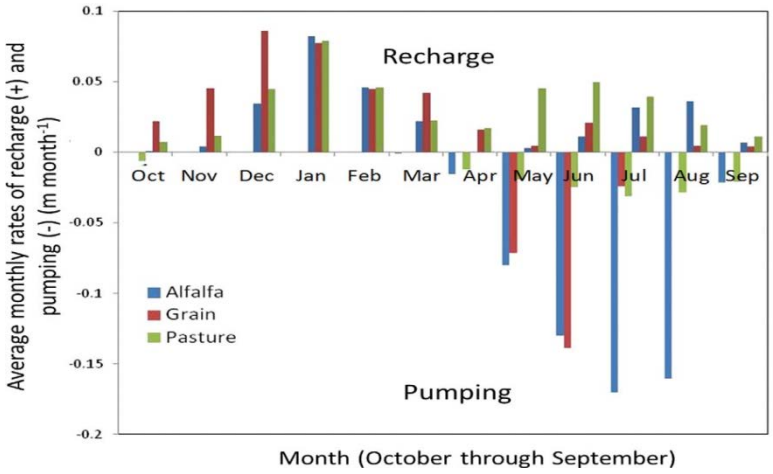


Figure 3. Simulated monthly rates of recharge and pumping (m month A1) for each of the three main landuses as calculated with the water budget model.

Concern 4: My analysis, so far, of the SVID Project's results as presented in the Summary Report and in light of Foglia, et al suggest a conclusion quite different than the conclusion Doctor Dahlke reaches in the Executive Summary of the Project's Summary Report. I believe this experiment in groundwater recharge indicates that the potential for late-winter-early-spring irrigation to significantly impact late summer and fall flows in Scott River is limited and would likely require very large amounts of water applied over many years. It is not clear that amount of water could be removed in successive years without significant negative impacts to streamflow, particularly spring and early summer streamflows which are essential to salmonid outmigration. It is concerning that neither this caution not the models limitations and need for calibration are acknowledged or noted in the Summary Report.

Concern 5: In addition, and after taking another look at Foglia, et al, I am concerned that the model may simply be too simple to, at this point, be used to guide water management. It seems to me that a lot more testing using actual data on impacts and subsequent model adjustment are needed before the model can serve as anything but a gross approximation of the results of management changes. The 50% figure cited above is a case in point. I am also concerned that significant areas of diversion, irrigation and recharge that impact streamflow are not within the geographical purview of the model. Here I think especially about the East Fork but also the South Fork and other tributaries.

Concern 6: I worry that the cumulative impact of model simplifications, model and simulation assumptions and the exclusion of significant lands and water uses that impact streamflow renders the model highly sensitive, that is, the results could be right on the money (reality) or they could be far off base (fantasy). In this regard I wonder if the model has been subjected to Sensitivity Analysis or (especially) Uncertainty Analysis. Here's what Wikipedia says about Uncertainty Analysis:

Uncertainty analysis *investigates the uncertainty of variables that are used in decision-making problems in which observations and models represent the knowledge base. In other words, uncertainty analysis aims to make a technical contribution to decision-making through the quantification of uncertainties in the relevant variables.....*

A calibrated parameter does not necessarily represent reality, as reality is much more complex. Any prediction has its own complexities of reality that cannot be represented uniquely in the calibrated model; therefore, there is a potential error. Such error must be accounted for when making management decisions on the basis of model outcomes.

Don't the parameters used in the Scott Valley model require additional calibration before the model can reliably be used to guide water management in Scott Valley and shouldn't UCD get a better idea of the models sensitivity and uncertainty before recommending it as a guide to water management? If so, shouldn't that have been acknowledged in the Summary Report and that reports Executive Summary?

Concern 7: No attempt was apparently made to measure and report Scott River flow below the Project's diversion point at Young's dam. It would have been instructive to know what percentage of the flow was removed each day the Project diverted water. More importantly no one was asked or enlisted to look at the impacts of February through March Project withdrawals on habitat (including possible salmon nests) and salmonid out migration below the point of diversion at Young's Dam. Those impacts could have been assessed by CDFW, the Karuk Tribe's fisheries biologists, or a consulting biologist. Those biologists could have also shed light on the likely impact of withdrawals at Young's Dam which would be "orders of magnitude larger" and which would be sustained for several consecutive years, i.e. the characteristics of a project that, according to the model, could significantly impact late summer Scott River flows. The failure to do any of those things or even to acknowledge them as issues that need to be examined in any future experiments is concerning.

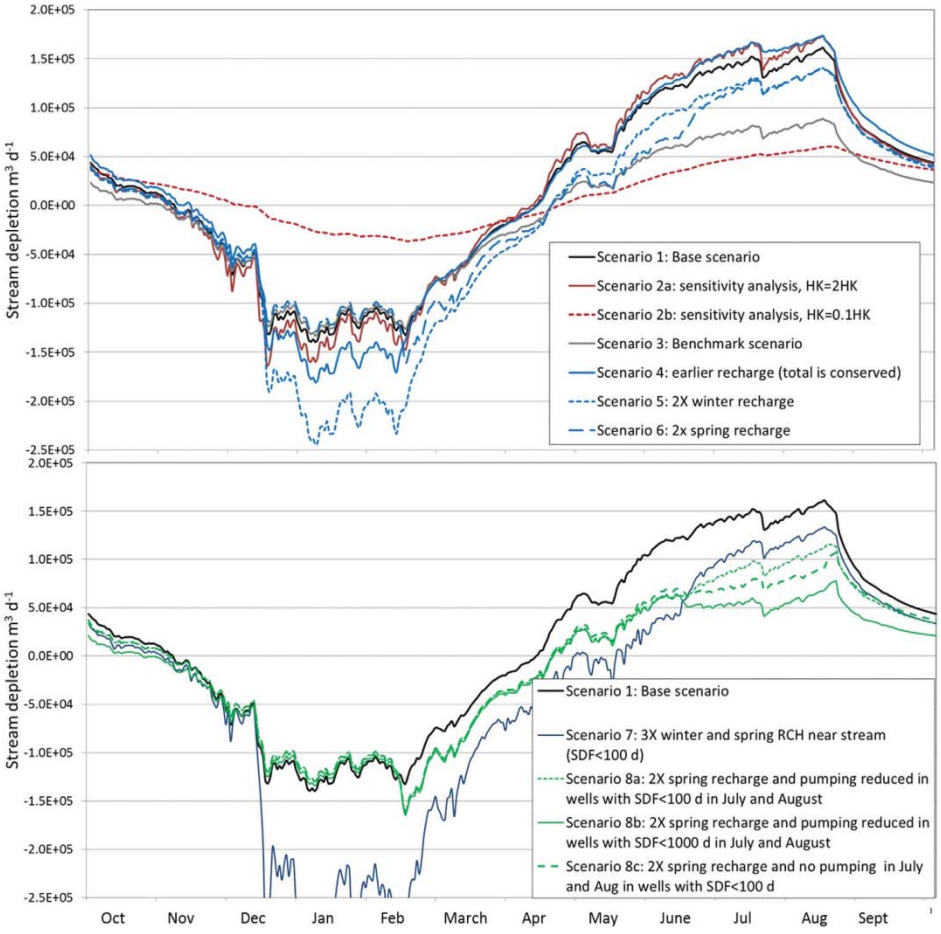
Concern 8: Unless and until groundwater extraction is effectively controlled and limited, any water diverted to raise groundwater elevations on the East Side of Scott Valley could legally be taken by any landowner wanting to extend the season of irrigation via groundwater extraction or to extend irrigation to additional fields that are not currently irrigated. By raising the water table, diversion of additional surface flows will make extending the season of irrigation or the area of irrigation significantly less expensive for landowners. In this way future SVID Projects of this nature that take place before groundwater extraction is effectively controlled and managed could result in increased groundwater extraction and decreased flows in Scott River.

Concern 9: As displayed in Foglia et al Figure 7 (reproduced below) if one only uses winter-spring increased irrigation to raise groundwater elevations one must deplete winter and spring flows orders of magnitude larger than the corresponding modest increase in late summer and fall flows. In other words, the bulk of the increased irrigation is taken by groundwater extraction and ET and never reaches Scott River. If, however, one couples winter-spring irrigation with ending pumping within 1,000 feet of Scott River in July and August one gets a much more significant reduction in late summer fall stream depletion. I interpret that as an indication that prohibiting pumping in July and August near the Scott River is much more effective at mitigating late summer and fall stream depletion as compared to extending the irrigation season into late winter and early spring.

It is unfortunate and a concern that Foglia et al did not include modeled scenarios that only ended pumping near the river and scenarios that ended pumping near the river in September and October and just in October. Future projects to "test" the model claiming as a purpose benefiting late summer and fall streamflow, should prioritize tests of the impact of eliminating groundwater pumping near Scott River, that is, they should include a test of the method the model says is most effective in reducing late summer/fall stream depletion.

UCD folks, please model the impact to stream depletion functions/streamflow of ending pumping within 1000 feet of Scott River for various time frames from August through October and share those scenarios with interested parties. And lets use Prop 50 or other funds to compensate groundwater extractors and test the impact to stream flow/stream depletion by ending extraction for irrigation within 1000 feet of the River based on those modeled scenarios. That would have a limited impact on annual agricultural yields and a likely significant impact on stream depletion.

Here's Figure 7 from Foglia, et al.:



To summarize, at heart I have four overarching concerns about the Summary Report, how the model has been and will be used, including in "education" as per the UCD's web page on the Project, and UCD's involvement in the Scott River Basin. These overarching concerns flow from my experiences living full time in the Valley from 1976 until 2002, part time until recently, and working on Scott River Basin water and natural resource issues since the early 1980s. That experience has included efforts to work with and also conflicts with the Valley's farmers, ranchers, farm advisors and politicians of many stripes. These concerns are:

- That the model has been and will be presented in a manner that does not acknowledge or downplays its limitations as a predictive and management tool and which raise expectations which cannot be realized about the efficacy of extending the irrigation season into late-winter and early spring in order to enhance flows for fish.
- That model runs and related claims will be used to justify additional temporary permits and multi-year out-of-season irrigation withdrawals from the Scott River and or tributaries before

model parameters are sufficiently calibrated, that is, adjusted based on real data, so as to reduce the models sensitivity and uncertainty significantly and before groundwater extraction is effectively controlled.

- That future out-of season irrigation projects/experiments will continue the precedent of not looking at the impact of project diversions on flows, aquatic habitat and species of concern, especially in the stream reach immediately below the point of diversion.
- That for the above reasons, the UCD's work in Scott Valley will lead to more, not less, conflict.

NORTH COAST STREAM FLOW COALITION

NCSFC
2945 ATLAS PEAK RD. NAPA, CA. 94558
707.255.7434 Fax. 707.259.1097
www.ourstreamsflow.org

Coalition Member Organizations
Community Clean Water Institute; Forest Unlimited; Friends of Del Norte; Friends of the Eel River; Friends of Green Valley Creek, Friends of the Gualala; Friends of the Navarro Watershed; Institute for Conservation Advocacy, Research and Education; Institute for Fisheries Resources; Klamath Forest Alliance; Living Rivers Council, Maacama Watershed Alliance; Pacific Coast Federation of Fishermen's Associations; Save Mark West Creek; Sonoma County Water Coalition; Sonoma Ecology Center; Willits Environmental Ctr; Willets/Outlet Creek Watershed Group

February 13, 2017

Felicia Marcos, Board Chair
Tom Howard, Executive Officer
Board Members
State Water Quality Control Board
Via Email

Subject: SCOTT VALLEY IRRIGATION DISTRICT (SVID) APPLICATION T032766 SEEKING A TEMPORARY PERMIT TO APPRORPIATE SURFACE WATER FOR GROUNDWATER STORAGE IN THE SCOTT RIVER BASIN

Chairperson Marcos, EO Howard and Board Members:

The application is nearly identical to the application filed by SVID in 2016. Therefore, virtually all of the comments we filed on that permit, which are contained in our December 1, 2016 letter to Board Members and EO Howard are incorporated herein by reference. A copy of the 12/1/16 letter is attached.

As noted on the SWRCB website, prior to issuing a temporary permit the State Water Board is required to make certain findings. We do not believe that the Board can make some of those required findings. Specifically:

1. The applicant has not demonstrated an "urgent need" for the water proposed to be diverted and used. In fact, groundwater at this time in the Scott River Valley is at or near ground level. There is, therefore, no place to put the water and no urgent need for it. The State Board can not make the required finding.
2. The claimed benefit to Fish & Wildlife is questionable and would be questionable even if there were room for water in the ground. This is the case because, even according to the UC Davis model, any benefit to streamflow would be realized during the late spring and early summer when flows in Scott River are not problematic for fish. There will be no resulting flow enhancement in late summer and fall when the US Forest Service in-stream water right has in recent decades not being met even when precipitation is average. If there were room for water in the ground there would be a benefit of the proposed project. However, that benefit would be

to the extractors of groundwater whose pumping costs would be lowered. Lowering extraction cost could lead to even more groundwater extraction which could further harm groundwater dependent ecosystems, fish and wildlife.

These and other problems with the Application are discussed below.

It is troubling that the applicants have not acknowledged their full agenda. They claim that what they are doing is solely to benefit fish & wildlife but it is clear from the record of UC Davis involvement in Scott Valley Groundwater that they have a different agenda. Knowing that SGMA Groundwater Planning will result in a requirement that the FS instream right be met, the proponents know that will require ending current levels and duration of groundwater extraction and may require moving groundwater extraction wells away from the River. The proponents agenda is to avoid any reduction in groundwater extraction or well movement. They hope to do this by extending the irrigation season into the late winter and early spring, thereby recharging groundwater so that those using groundwater for irrigation can continue current extraction seasons and levels even in dry years while claiming, based on a largely untested model, that they are not impacting Scott River flows and surface water right holders.

The SWRCB should not collude with failure of proponents to reveal their objectives and who will benefit from a Project. Failure to require that all benefits and benefactors are identified delivers the wrong message and risks turning this potentially beneficial program into a water grab at the expense of fish and aquatic ecosystems. Your approval of this misrepresentation by SVID in 2016 set a bad precedent and should not be repeated.

This situation also illustrates why there should not be a lower filing fee for applicants who claim benefit to fish & wildlife unless DFW certifies in writing that it concurs that there will be a clear and substantial benefit to fish & wildlife if the permit is granted. Likewise, streamflow criteria must have been developed before an applicant can demonstrate that their proposed project will not harm fish, and aquatic ecosystems.

The North Coast Stream Flow Coalition wants to work with the SWRCB to establish an ongoing, non-emergency program to use surface flows not needed instream, recycled water, etc. to replenish depleted groundwater. We urge the Board to develop a groundwater recharge program which:

- Requires that flow criteria are developed and used to identify flows that are clearly not needed instream and may, therefore, be safely diverted to groundwater storage.
- Requires that applicants involved local DFW personnel in development and monitoring of projects. SWRCB should also require that DFW certify claimed benefits to fish and wildlife in order for applicants to qualify for reduced fees.
- Requires that applicants identify all entities and resources that may benefit from a proposed project and invalidates applications that do not properly identify benefits and who will realize those benefits.
- Requires the proper level of CEQA review in order to assure that proposed projects will not significantly harm the natural environment and the local economy.

It is also troubling that the applicant made no effort to recontact local DFW staff even though local DFW folks expressed concerns about the impacts of SVID's prior permit. That section of the application was unchanged; last contact of applicant with DFW was in 2015 and was “preliminary”. It

is concerning that the applicant did not follow-up with DFW in 2016 and did not recontact DFW about the current application. Our attached 12/1/16 letter to the Board discusses in detail the coordination and monitoring by local DFW personnel that should take place but has not taken place. Failure to coordinate locally with DFW should be a cause for rejecting this application.

The failure of SWRCB to require close coordination with DFW at the local level reinforces fears that this program will be turned into a water grab to expand irrigation at the expense of fish & wildlife. The manner in which the SWRCB has implemented the program, including questionable findings about the need for the water and failure to require DFW local involvement, has exacerbated those concerns.

In summary, the applicant has not and can not demonstrate an “urgent need” for the water, has claimed benefits to fish that are highly questionable, has failed to disclose the benefits to groundwater extractors and has failed to coordinate locally with the Department of Fish & Wildlife. For these reasons the application should be rejected because it is incomplete and inadequate and because the water is not urgently needed.

Sincerely,

Via Email
Felice Pace
for the North Coast Stream Flow Coalition

attachment

From:	St.John, Matt@Waterboards
To:	Felice Pace; Scott, Elias@Waterboards
Cc:	Blatt, Fred@Waterboards; McFadin, Bryan@Waterboards; Curtis, Joshua R.@Waterboards
Subject:	Re: Input for consideration in renewal of Shasta and Scott TMDL implementation waiver permits
Date:	Friday, June 2, 2017 6:33:10 PM

Eli: please include these comments from Felice as part of formal record for our response.

Thanks, Matt

Sent from my iPhone

> On Jun 2, 2017, at 5:51 PM, Felice Pace <unofelice@gmail.com> wrote:
>
> Gentlemen,
>
> This is formal input into the Shasta and Scott Waiver permit renewal process. Please retain it in the record for these permit renewals.
>
> The question that I would like you to address in this process is this:
>
> In light of ten years of failing to make significant progress toward removing the impairments, how should the waiver permits implementing the Scott and Shasta TMDLs be changed in order to render them effective at removing the respective impairments?
>
> Please explicitly note this question in the record and please use your good minds and those of your staff to adequately answer it in your presentation to the Board at the workshops. In doing this please either incorporate in the waiver permit enforceable language with targets, metrics that show effectiveness, and monitoring to show trends and effectiveness or explain why those things are not included in the waiver permits you propose.
>
> If you won't include these items or address them in your presentation, I'd like to know why.
>
> Please also carefully analyse the effect of your Klamath "stewardship" approach and policy on the effectiveness of Shasta and Scott TMDL implementation. Is that "voluntary compliance" approach working and, if not, what changes in approach are needed to improve effectiveness?
>
> I believe it was Albert Einstein who defined insanity as "Doing the same thing over and over again and expecting different results."
>
> In that regard, i would like to know the status or disposition of the violation in Scott Valley when a farmer on Moffett Creek bulldozed the creek after the recent flood to straighten it so that he could irrigate right down to the break in slope in violation of the waiver shade requirement. Please let me know the status or disposition of that case.
>
> Felice
>
> Felice Pace
> Klamath, CA 95548
> 707-954-6588
>
> "There's a crack in everything; that's how the light gets in."
>
> - Leonard Cohen
>

>

From:	Felice Pace
To:	St.John, Matt@Waterboards
Cc:	Lee, Shin-Roei@Waterboards; Curtis, Joshua R.@Waterboards; Creager, Clayton@Waterboards; McFadin, Bryan@Waterboards; Scott, Elias@Waterboards; Jacobsen, Nathan@Waterboards; Crystal Robinson; Susan Corum - Karuk Tribe; Dave Hillemier; Vivian Helliwell; Alan Levine; Konrad Fisher - KRK; Craig Tucker; Fortescue, Forest@Waterboards
Subject:	Re: Concerns about Shasta and Scott River Waiver renewal and request for information
Date:	Tuesday, June 6, 2017 5:25:53 PM
Attachments:	image001.png Ltr to SWRCB_SVID G"wtr storage pict_2016_Final.docx Ltr to SWRCB_SVID G"wtr storage pict_2017.docx

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Dear Matt,

Thanks so much for taking the time to substantively respond. I find the information on progress in the Shasta Basin persuasive and encouraging. My work on these issues is 100% volunteer; therefore i am not going to comment on the draft Shasta Waiver (which i guess is an "order" rather than a "permit", although I don't really get the distinction and would like to understand that distinction).

On the Scott I disagree about what you have called "progress". For example, those folks on Moffett Creek are still ploughing right down to the bank drop-off, preventing riparian vegetation from establishing. And this year we had that fellow bulldoze the creek to maximize his ability to irrigate right down to the bank slope break. I take it from your email that there has been no enforcement action or penalty for that guy bulldozing his part of the creekbed for the second time; he did it after the 97 storm as well. Can you tell me why no enforcement action was taken in response to the bulldozing of Moffett Creek's bed?

On the two letters you sent:

I don't have access to the Heidi property but I would observe that Sniktaw Creek still does not reach the Scott River most of the year.

As for the Hammond Property (letter to Mr. Munson), I have been to that site recently (intersection of Patterson Creek and Eller Lane with confluence of Patterson and Crystal/Johnson Creeks just to the south) and I can tell you that the measures taken and which are mentioned in the letter have not been maintained. Here's the link to my photos of this site on DropBox: https://www.dropbox.com/sh/nq9tknuzgktuenp/AADwHxv6NXfz1RbJvbZo8kG0a?dl=0. Please look at the photos from after the date of the letter and the most recent ones from 2016. One of those photos showing the Hammond property is below. Note the lack of riparian vegetation, bank trampling and bovine waste deposition directly into the creekbed.

Jenners give cattle access on the other, north side. they now have an electric fence right under the bridge to keep the two herds from mixing. That indicates both Munsen/Hammond and Jenner are allowing cattle to trample the banks and deposit waste into the streambed at that location. That's a violation right; are you going to do anything about it?

The photo below was taken on 10-20-2016. It shows the confluence of Crystal-Johnson and Patterson Creeks, that is, the Munsen-Hammond property. Note that the fence (which was right on the top of the bank and thus inadequate for riparian vegetation recovery is not there; it was taken down. That typifies the situation on the Scott, that is, ineffective implementation of the waiver, continued degradation of water quality and damage to the Public Trust and

beneficial uses.

You and your staff are in receipt of numerous photo-illustrated reports documenting the fact that grazing on national forest land in the Scott River Basin is not protecting riparian areas and wetlands from trampling and shade removal and/or preventing shade from developing. That is the direct result of passive season-long grazing. Yet your staff and the NCWQCB refuse to order the modern rest rotation grazing methods that can mitigate those impacts to shade/water temperature, sedimentation and hydromodification. While the Waiver requires "site specific BMPs" none have been required and the only sufficiently detailed Annual Operating Instructions are the result of an ESA lawsuit notice to sue.

As for Dr. Harter, his groundwater model and the SVID/UCD project, I commented on them to the state water board and testified before them on it. Even the poorly tested model does not indicate that extending the irrigation season into late winter and early spring will impact late summer and fall flows (which is when we have a flow problem and water quality issues related to flow). The poorly calibrated and tested model indicates early irrigation can positively impact flows in early summer, which is one of the times of year flows are adequate right now. The final report abstract misrepresents the findings/results as being more positive. My letters to the SWRCB on the 2016 project and on the 2017 proposal, which was rejected by the State Board, for the NCSFC are attached.

Does your a staff have a different evaluation or do they concur with my analysis? If staff has a different analysis please share it. Dr Harter's work is very political. The models are fine as far as they go but he does not disclose the sensitivity and lack of calibration and testing. Like Ken Tate's work on grazing and earlier with Dan Drake on the Scott, the science is marginally OK but the conclusions drawn are biased and do not conform to what was actually found in the science part.

Please consider this message as input to help inform the workshop and Scott Waiver

development and retain it in the file for the Scott Waiver renewal.

Cheers,

Felice

Felice Pace
Klamath, CA 95548
707-954-6588

"There's a crack in everything; that's how the light gets in."

- Leonard Cohen

On Wed, May 31, 2017 at 5:04 PM, St.John, Matt@Waterboards <Matt.St.John@waterboards.ca.gov> wrote:

> Dear Felice,
>
> Thank you for your email and sorry for my slow response. It's important to me and others here at the Regional Water Board that all voices are considered in the development, public review, and Board consideration of our Orders (aka Waivers, in this case, and "permits"). As you know the public review period for both the Shasta and Scott TMDL Conditional Waivers is scheduled to begin on June 1 and end on July 7th; in case you haven't received it the public notice is attached.
>
> First, let me provide my thoughts on staff's characterization that the Shasta and Scott TMDL Waivers would be renewed in their current form, with minimal changes. The public review drafts of both Waivers generally maintain the same regulatory framework and requirements as the existing Board-approved Waivers. However, the draft Waivers (i.e. the 2017 Waivers) have been revised from the existing 2012 Waivers to strengthen the enforceability language associated with required management measures. We will look forward to your comments with regard to these revisions.
>
> Second, with regard to the information you specifically requested in your email:
>
> (1) "Enforcement actions by date and evidence that the required changes in

management have been sustained (for example subsequent visits by staff to the location to confirm that changes have been maintained)."

- To date no formal enforcement actions associated with these Waivers have been taken in these watersheds. However, we have followed up on complaints which have led to changed practices to protect water quality. In response to your request to receive copies of associated documentation to such enforcement related actions, attached are two inspection memos and letters to landowners that resulted from complaints we received. There are no other documents produced by our office in response to complaints or enforcement actions associated with these Waivers. However, I want to assure you that one of my top priorities is to ensure that throughout the North Coast the good actors are recognized and encouraged, best practices are shared with those willing to improve, while bad actors are held accountable to the law. Serving as our Chief Enforcement Officer, Assistant Executive Officer Shin-Roei Lee is doing an exemplary job in strengthening the effectiveness and efficiency of the Regional Board's enforcement program.

(2) "Evidence of improvement in water quality (especially with regard to the impairments) that is not just year-to-year variation."

- Working with various partner organizations, the Regional Board is close to completing the Shasta Stewardship Report, which is scheduled for public release soon. At the June 14th staff workshop in Yreka and the June 29th Regional Board meeting in Santa Rosa, Clayton Creager and Eli Scott of my staff will present key findings from this report. A preview:

  i. We have seen compelling improvement in DO conditions at the Montague-Grenada bridge, where there has been a significant amount of focused stewardship work, including tailwater and irrigation efficiency projects.

  ii. We have seen a statistically significant and sustained decreasing trend in temperature at Big Springs Ranch, both in early summer, and throughout the irrigation season from 2008 through 2015.

  iii. The report includes a section on flow and the progress towards achieving the 45 cfs goal. And on a related note, our staff continues to work with the State Water Board's Division of Water Rights and the Department of Fish and

Wildlife on the Shasta River Water Action Plan, a key component of the Governor's California Water Action Plan.

- In the Scott River the available monitoring data isn't as robust, and what is available (mostly temperature) isn't showing anything conclusive. Though it is early to see changes in monitoring data, progress is being made on both of these fronts.

i. Temperature changes are expected to result primarily from growth of riparian vegetation and increased cold water inputs. All of the properties we have assessed reflect a hands-off approach to riparian management, or in a few cases a reasonable approach to active riparian management that is resulting in healthy riparian areas.

ii. The UC Davis work that we are supporting has identified tangible approaches to managing water to increase surface flows. At the June 29th Regional Board meeting in Santa Rosa, Dr. Harter will present on key findings from this on-going effort. This work has resulted in applications to the Division of Water Rights for implementation of a managed recharge project. There is still more work to do to have all of the stakeholders understand the benefits of these projects, and we are pursuing that endpoint as well.

From my experience, addressing water quality impairments and making tangible improvements for water quality standards tends to be iterative. The experience the Regional Water Board has gained from implementing the previous and existing Shasta and Scott TMDL Waivers provides a body of evidence to move forward with greater intensity and urgency to realize the water quality goals that need to be accomplished in these watersheds. Regional Water Board staff believes that the approach implemented through the Waivers is one that works. Our biggest obstacle has been having the staff resources to implement the approach, not the approach itself. I look forward to working with you to realize our shared goals as quickly as possible. Please let me know if you'd like to have a follow-up conversation. Thank you.

Sincerely, Matt

Matthias St. John

Executive Officer

North Coast RWQCB

(707) 570-3762

Matt.St.John@waterboards.ca.gov

From: Felice Pace [mailto:unofelice@gmail.com]
Sent: Wednesday, May 17, 2017 2:12 PM
To: St.John, Matt@Waterboards
Cc: Alex Corum; Allie Hostler; Amber Shelton; Amy Cordalis - Yurok Tribal Attorney; Bean, Caitlin@Wildlife; Chesney, Bill@Wildlife; Bill Cross; Bill Jennings-CSPA; Bill Kier #1; Bill Tripp; Borok, Sara@Wildlife; Brock, Patrick@Wildlife; Chesney, Diana@Wildlife; Cliff Marshall; Creager, Clayton@Waterboards; Crystal Robinson; Curtis knight; Dave Hillemier; Dave Webb; Don Flickinger; Eli Asarian; Gail Louis; Garman, Gayle@Wildlife; Garwood, Justin@Wildlife; Georgiana Gensaw; Gilroy, Michelle@Wildlife; Jim Simondet; John Corbett; John Spencer; Jon Grunbaum; Josh Strange; Karuna Greenberg; Kerul Dyer; kimberly_true@fws.gov; Knechtle, Morgan@Wildlife; Konrad Fisher - KRK; Louisa McCovey_YTEP Program Director; Manji, Neil@Wildlife; Marla Bennett at QVIR; Matthew Drummond; Maven's Notebook; McFadin, Bryan@Waterboards; Micah Gibbson; Michael Hentz; Mike Belchik; Mike Orcutt; Milliron, Curtis@Wildlife; Nat Pennington; Nick Hetrick - FWS KFAT; Nick VanVleet; Noah Oppenheim_PCFFA ED; Patrick Higgins; Petey Brucker; Pomeroy, Keith@Wildlife; Fitzgerald, Rebecca@Waterboards; Regina C; Robert Franklin; Ryan Fogerty (Ryan_Fogerty@fws.gov); Sam Ziegler; Sara Aminzadeh-CalCoastkeeperA; Sarah Schaefer; Seth Naman; Suesan Saucerman; Susan Corum - Karuk Tribe; Suzanne Fluharty - Yurok E Specialist; Suzanne Marr - EPA Region 9; Tim Broadman-NMFS; Tim Hayden (thayden@yuroktribe.nsn.us); Toz Soto; Vi Orcutt; Vivian Helliwell; Will Harling; Grant Wilson, Earthlaw Ctr
Subject: Concerns about Shasta and Scott River Waiver renewal and request for information

SIERRA CLUB
FOUNDED 1892

North Group-Redwood Chapter-Sierra Club

Felice Pace, Water Chair

28 Maple Road Klamath, Ca 95548 707-954-6588 unofelice@gmail.com

May 15, 2017

Matt St. John, Executive Officer

North Coast Water Board

Via email to: Matt.St.John@waterboards.ca.gov

Dear Matt Saint John,

As Water Chair for the North Group I recently received email from your staff informing me that the Scott and Shasta Waiver Permits are now being considered by the North Coast Board for renewal. Those waiver permits are intended to implement the Scott and Shasta TMDL Implementation Plans that are part of the Basin Plan and which are the blueprint for removing the impairment of beneficial uses of water in these basins. If the waiver permits are renewed, it will be the third such renewal of permits with 5 year terms.

The May 2 email in this regard from Elias Scott of your staff included this statement: *"We anticipate that the waivers will be renewed in their current form, with minor changes that clarify existing policy and provide the Regional Board with solid foundations for stewardship of water quality and enforcement of existing laws."*

It is discouraging that, just as the permit renewal process is getting underway, NCWQCB staff has already decided "*that the waivers will be renewed in their current form, with minor changes.*" That would be appropriate if substantial progress had been made over the past eight years or so to remove the beneficial use "impairments" present in the waters of these rivers. But, so far as I can tell, that is not the case.

If you have data indicating water quality improvements attributable to these waivers please share data which supports waiver permit renewal "in their current form". If you can't point to substantial improvements over this period, why do you believe it is appropriate to renew these permits "*in their current form, with (only) minor changes"?* For example, the Shasta Implementation Plan calls for a 45 cfs increase in Shasta River flows to reduce stream water temperatures which are impairing beneficial uses. Has the 45 cfs increase been achieved? If not, how can you conclude that the Shasta Waiver should be approved in its current form? Likewise, has there been progress on getting riparian landowners and FS managers to allow natural shade to develop along streams? If not, why is it appropriate to renew the permit in its current form*?*

It is my opinion that the NCWQCB's "stewardship" policy, which amounts to voluntary compliance, has resulted in failure of NCWQCB staff to adequately enforce TMDL Implementation Plan provisions and, in the case of the Scott, even to inform riparian land owners of their obligation to allow natural shade along streams. The result has been little or no progress removing impairments to beneficial uses. That has gone on for going on nine years! Isn't nine years of little or no progress enough; is it not right to now take a new approach, one that emphasizes enforcement of the TMDL Implementation Plans as opposed to the current "stewardship" policy which simply provide cover for some agricultural

producers to continue to degrade Scott and Shasta water quality in violation of the CWA and Porter-Cologne?

As you know, the Project to Reform Public Land Grazing in Northern California has documented many instances where Forest Service managers are allowing removal of natural shade in the headwater basins of Scott River resulting in stream water temperatures that do not support beneficial uses. Please consider the Project's 21 Allotment Monitoring Reports on grazing allotments on national forest land in the Scott River Basin (available on the Project's website) as significant new information and consider that information as you draft renewed waiver permits for Scott River.

Five more years of little to no progress toward removing the impairment of beneficial uses in the Shasta and Scott River Basins is unacceptable to the North Group. Therefore, if the NCWQCB continues to sacrifice beneficial uses and the interests of downstream communities by renewing these waiver permits "*in their current form"*, the North Group will oppose adoption/renewal and will urge other entities to oppose and challenge the renewals.

There is a better way. Please prepare waiver permits for the Scott and Shasta which stress the need to:

- Formally notice riparian landowners of their obligations under the waiver permits when new permits are adopted or when permits are renewed,

- Emphasize the necessity of enforcing CWA and Porter Cologne provisions, including the waiver permits,

- Provide the staffing on-the-ground in these two watersheds which is needed to adequately enforce the CWA and Porter Cologne, including waiver permit provisions. Consider an MOU with DFW for this purpose.

- Add a requirement for development of year-around flow criteria for these basins. Year-around flow criteria are needed in order to achieve groundwater management plans that will not produce "undesirable results" on streamflow and beneficial uses. Adequate groundwater management plans that do not produce "undesirable results" are needed in order to remove current water quality impairments.

In order to prepare to meaningfully and effectively participate in development and adoption of waiver permits for the Shasta and Scott Rivers the North Group needs the following information:

- enforcement actions taken by the NCWQCB in the Shasta and Scott basins respectively since adoption of waiver permits. Please provide that information by date and provide evidence that the required changes in management have been sustained (for example subsequent visits by staff to the location to confirm that changes have been maintained).

- evidence of improvement in water quality (especially with regard to the impairments) that is not just year-to-year variation.

Since this information is needed by North Group in order to participate effectively in a regulatory process a Public Records Request should not be necessary in order to obtain the information. I fact, I urge you to put this information on your webpage so that all participating in Shasta and Scott waiver permit renewal can consider it. Nevertheless, if you require a PR Request, please consider this letter as that request. Since all related work is volunteer and North Group is an NGO, there should not be fees associated with providing the information.

When you provided the two items of information requested above, or post the information on the NCWQCB website we will evaluate the information and, if we believe that there has been **significant and effective enforcement and significant improvements in water quality**, we will support renewal of the waiver permits *"in their current form"*.

I hope you will evaluate that information as well. If, as we strongly suspect, there has not been significant progress in removing impairment of beneficial uses in the Shasta and Scott Rivers I hope you will reconsider your decision to renew the waiver permits *"in their current form"*.

Sincerely,

Signed via email

Felice Pace

Water Chair

PACIFIC COAST FEDERATION of FISHERMEN'S ASSOCIATIONS

Please Respond to:

☐ **California Office**
P.O. Box 29370
San Francisco, CA 94129-0370
Tel: (415) 561-5080
Fax: (415) 561-5464

www.pcffa.org

Reply Email: fish1ifr@aol.com

[X] **Northwest Office**
P.O. Box 11170
Eugene, OR 97440-3370
Tel: (541) 689-2000

California Regional Water Quality Control Board
North Coast Region
Attn: Eli Scott: Elias.Scott@waterBoards.ca.gov
5550 Skylane Blvd, Suite A
Santa Rosa, CA 95403

11 July 2017
Via Email and PDF attachment

RE: Scott and Shasta Conditional Waivers

Dear North Coast Water Board and Staff:

Please accept the following comments on the Scott and Shasta Agriculture Conditional Waivers from the Pacific Coast Federation of Fishermen's Associations (PCFFA), the Institute for Fisheries Resources (IFR) and Save the Klamath Trinity Salmon (SKTS). We also wish to incorporate by reference the written comments of the Karuk Tribe and Quartz Valley Tribe and our oral testimony to the Board at a hearing on these waivers the 29 June 2017 and in other venues.

The Scott and Shasta Rivers are of the Utmost Importance to Commercial Fishermen.

The Pacific Coast Federation of Fishermen's Associations (PCFFA) has a unique interest in the management of the Scott and Shasta River. PCFFA is the largest trade association of commercial fishing families on the West Coast. For more than forty years, PCFFA has led the commercial fishing industry in assuring the rights of individual fishing men and women, and in fighting for the long-term survival of commercial fishing as a productive livelihood and way of life.

PCFFA's sister organization, the Institute for Fisheries Resources (IFR), is dedicated to the protection and restoration of fish resources and the human economies that depend on them. A

critical component of both organizations' missions is robust protections for water quality in surface waters that support salmon fisheries, which includes both the Scott and Shasta Rivers.

The water quality health of the Scott and Shasta greatly impacts our fishing families, their communities and their port associations. This year commercial fishermen are facing yet another record-setting year for low Klamath Basin salmon returns, and subsequent salmon fishing closures are now in effect within the entire Klamath Management Zone in the ocean. These closures will cost our industry tens of millions of dollars in economic damages.

This ongoing economic and ecological disaster was caused primarily by poor water management on the Klamath during California's recent four-year drought, and though the Scott and Shasta salmon numbers are a little better than the mainstem Klamath they are also facing historic salmon population lows. Ironically, the Water Board actually had the tools to demand higher flows in the Scott and Shasta Rivers during the past four-year drought, actions which could have greatly benefited the salmon we depend upon and greatly reduced both strandings and the propagation of fish pathogens, *but not only did the Board opt to not use these tools, it also did not take <u>even one</u> enforcement action to halt water quality violations in the Scott and Shasta during this time, despite multiple complaints.* We urge the Board to reverse this past record of avoidance and inaction through stronger ag practices like those under consideration as this waiver is revised.

The long history of poor water management of the Klamath watershed has devastated California's commercial fishing fleet and the coastal fishing communities that depend economically on the fleet, even before the last drought, with commercial fishing season closures or reductions becoming so common that the North Coast fleet is today but a fraction of what it was several decades ago.

The Scott and Shasta Agriculture Waivers

We wish to thank the Board and Staff for your efforts to work with willing participants to improve water quality on the Scott and Shasta River through stewardship efforts. Some of these laudable efforts have improved water quality and should not be ignored. However, we have concerns with the current proposed waiver's legality, timeline, enforcement, reporting mechanisms, monitoring requirements and with its effectiveness.

The Klamath River is facing an unprecedented salmon collapse and it is of the utmost importance that the Scott and Shasta salmon be given the time and opportunity to begin to recover, or they will be driven to extinction.

Unfortunately, the agriculture waiver as currently written will not likely achieve water quality standards and is thus in violation of the State Nonpoint Source Policy, Porter-Cologne, and the Basin Plan -- and is even stands at odds with the existing Shasta and Scott TMDL goals and load allocations. The TMDLs in these watersheds include timelines and milestones, and contain

enforceable standards to demonstrate that the waiver can recover water quality and benefit salmon within a reasonable time frame. These ag waivers, however do not meet these standards.

Due to the fact that agriculture-related activities are the main pollution sources for both the Scott and Shasta, not modifying these waivers to curtail these impacts also makes the TMDL loads unachievable.

The California Water Code authorizes waivers only where they are both consistent with the applicable Basin Plan and in the public interest. *Water Code Section 13269.* The sad fact is that these ag waivers have thus far lead to little or no quantifiable water quality improvements. Progress has been too slow and implementation too piecemeal to meet this standard. This is especially true on the Scott River. The fact that the TMDL implementation has not been effective has been a contributing factor in poor salmon returns on the Klamath River.

We laid out these concerns for the Board at the hearing on June 29th and will also summarize them in this letter. We are requesting changes in the following areas:

- **Enforcement:** The voluntary efforts of some landowners have been laudable, but those efforts are still only from a very few landowners. Regretably, the vast majority of those whose agricultural practices contribute to these problems are not among those voluntarily complying. In short, voluntary efforts alone will not be enough.

  We therefore request that dischargers that will not voluntarily comply with the waiver measures and standards should instead be required to submit applications for site-specific WDRs with specific load allocations, sediment and ranch management plans, riparian and flow management plans, and water and nutrient application plans. Better and more effective enforcement for non-compliance will serve to encourage, not discourage, more and broader voluntary compliance as well. Unless there are consequences for non-compliance there is no incentive to comply.

- **Legality:** We are concerned that these waivers do not explain how they will comply with the Basin Plan, the state nonpoint policy, or even the Scott and Shasta TMDLs. Waivers that do not contribute to compliance with these already pre-existing plans and standards are not legally sufficient. We are also concerned that the waivers do not include an anti-degradation analysis or criteria for when WDRs will be needed.

- **Flow Criteria and Enhancement:** Sheer lack of instream flows has long been an exacerbating factor in water quality problems in both the Scott and Shasta, but particularly in the Scott. We request that these waivers delineate and explain what actions will be taken to achieve TMDL minimum flow targets, and that flow management and enhancement activities generally under these waivers be much further outlined and delineated. Given the intimate connections between groundwater resources and surface

water flows throughout these sub-basins, actions to enhance or conserve groundwater should also be included in these water resource enhancement actions.

We also request that the Board specifically act to stop the issuance of additional groundwater wells in areas of known groundwater overdraft or where new wells are likely to impact surface water streamflows. The Board clearly has the legal power, as well as obligation, to prevent both groundwater and surface water depletions that jeopardize beneficial uses, under the Public Trust Doctrine.

Each TMDL's implementation plan stated, when approved, that additional studies were needed to guide and justify flow conservation actions. Many of these studies have now been completed and the correlation between flow, groundwater and temperature is much better understood. Therefore this is the appropriate time to incorporate new guidelines and standards for how these flows recommendations will be achieved and what water-saving actions will be brought into the waivers.

- **Riparian Buffers:** We request that the Board also include riparian stream buffer zones of 100 to 200 feet from the high water mark, depending on stream class, in the waiver to protect water quality and salmon habitat. These buffers should also include seasonal waterways. Watershed shading and sediment capture activities can be easily rendered ineffective without riparian buffers. Roading, machinery, CAFOs, AFO, and livestock should be excluded from these riparian buffer areas. In cases where permanent and necessary roads that are used by farms or ranches are already in these areas, a removal plan should be submitted, or BMPs practices that will lead to zero discharge of sediment to waterways should be developed and required. These road maintenance BMP's should be designed to hold up even in heavy storm events.

- **Monitoring:** The waivers include no receiving water monitoring, and no field evaluation, let alone the reach-by-reach sampling and analysis required to establish compliance with the TMDLs. Because these waivers do not include monitoring sufficient to demonstrate compliance with applicable Basin Plan limits, they clearly violate Water Code Section 13269.

We therefore request that a monitoring plan be put in place that focuses on important receiving waters at key points throughout the watershed and on high impact discharges. This monitoring plan should focus on providing the information needed for systematic analysis of effectiveness of this waiver and obtainment of TMDLs. If loads are not being sufficiently reduced to the point that milestones can be met, or if there are routine exceedances of the TMDL loads, we suggest more monitoring sites be added so that the sources and reasons for these exceedances can be identified and remedied**.**

- **Stormwater Actions:** We request that this waiver address stormwater impacts and that BMP's and management plans to address storm discharges be included in this waiver.

- **Public Disclosure:** We request that all implementation reviews, effectiveness reviews, stewardship reports, monitoring information, any WDRs, ranch management plans, management actions, and studies related to the Scott and Shasta TMDL be made available online or on request. Making this information publicly available can only help improve the implementation process. We also request in the future that reviews and reports related to waivers, including monitoring reports, be made available before major public comment deadlines. We are disappointed, for instance, that this comment period occurred before an anticipated report on TMDL implementation was available.

- **Fisheries Impacts Assessment:** We also request an analysis on how this waiver and the Scott and Shasta TMDLs are impacting or expected to impact salmon fisheries contributed to by salmonid populations originating in the Scott and Shasta. Cold water spawning and rearing habitat for the salmonid species that those fisheries depend upon are the most sensitive beneficial uses in the watersheds. We believe proper implementation of the TMDLs through effective waivers and WDRs could lead to attainment of these beneficial uses through increased salmon populations and higher juvenile-to-adult survival rates. However fisheries numbers have mainly decreased since the TMDLs took effect. This may be due in part to the drought but it is also certainly exacerbated by lack of progress on the TMDLs themselves, especially in the realm of meeting TMDL minimum instream flow objectives. We think an analysis of the linkages between meeting TMDL standards and salmon survival rates could clarify what needs to occur to reverse this trend.

- **Reservoir Impacts and Management Need to Be Assessed:** Reservoirs with water quality issues that are not being addressed should be required to submit reservoir management plans. Specifically, the Dwinnell Reservoir has well documented Dissolved Oxygen (DO) and temperature impacts to the Shasta River, and is a major source of toxic algae. Dwinnell Reservoir impoundments have also been known to dewater the entire lower river in some years. This reservoir is an agricultural diversion reservoir and thus should be assigned specific loads and assigned management measures to remedy these adverse impacts.

- **Analyzing Cumulative Watershed Impacts:** A lack of coordination between agencies has been cited as a top management challenge to restoring fisheries in the Klamath Basin by the National Academy of Sciences. The Scott and Shasta Rivers are critically important as they were historically some of the best fish-producing watersheds in the basin, and due to fish-blocking dams on the mainstem Klamath they are now the highest two major tributaries in the Klamath basin that salmon can access.

Therefore we also request an analysis of the cumulative watershed impacts of all human management activities throughout the Scott and Shasta basins that determines how these actions impact the ability of the TMDLs to be met. This analysis would also

help to determine the effectiveness of this waiver. There are many different waivers, permits and safe harbor agreements occurring in tandem in these rivers. It is important for the Board and public to understand how these processes cumulatively impact water quality and fisheries generally.

- **Financial Incentives to Promote Change:** We are also very sensitive to the fact that many of the mitigation measures being asked of agricultural landowners will cost them money to implement. This additional cost can become a major psychological as well as institutional barrier to implementation and change. Therefore, we would also like to see adequate funding sources in place to help partially subsidize or cost-share any needed voluntary landowner mitigation measures as a strong financial incentive program to get these measures implemented as quickly as possible. In the long run, it is far cheaper for the State of California to pay a little money up front to prevent water quality problems in the first place than to try to clean up these problems afterwards once they have occurred. It is also good policy to help financially support voluntary landowner efforts, and much less costly than resorting to full legal enforcement as the only alternative.

Again thank you for the opportunity to comment in writing and at the Board meeting on these issues. We appreciate the opportunity to work with the Water Board to improve this waiver and to work toward healthy watersheds and fisheries in the Scott and Shasta Rivers. The survival and restoration of the once-abundant Klamath salmon depend upon your actions. We know you take this responsibility seriously and will work toward finding an equitable solution to our concerns.

Please have your Staff contact us if there are any additional questions.

Sincerely,

Glen Spain
Glen Spain
Northwest Regional Director
Pacific Coast Federation of Fishermen's Associations
and the Institute for Fisheries Resources

Regina Chichizola
Regina Chichizola
Save the Klamath-Trinity Salmon
P.O. Box 142
Orleans, CA 95556

Quartz Valley Indian Reservation

July 11, 2017

To: North Coast Regional Water Quality Control Board

5550 Skyline Blvd., Suite A

Santa Rosa, CA 95403

RE: Comments on Order No. R-1 2017-0031 Scott River TMDL Conditional Ag Waiver

North Coast Regional Water Quality Control Board,

We would first like to thank you for this opportunity to comment on the proposed Waiver of Waste Discharge requirements for the Scott River ("Waiver"). The Quartz Valley Indian Reservation (QVIR) is located in the Scott River watershed and has been working collaboratively with Regional Water Board (RWB) staff to implement Scott Total Maximum Daily Load (TMDL) actions and monitoring since the 2006 adoption. QVIR staff has been attentive to TMDL local participation and has engaged in many collaborative processes aimed at achieving improved water quality. Unfortunately, most of the efforts pursued to date, have not led to any notable water quality improvements over the past 10 years. Drought conditions have been a factor exacerbating water quality impairments making data analysis a bit more challenging to discern any improvements. Regardless, acts such as riparian plantings and/or riparian management to foster existing vegetation are still lacking in the Scott River landscape. This may be due to the waivers failure to fully incorporate the Implementation Plan into the Waiver. Another factor is that the Implementation Plan and Waiver leave many necessary actions to the discretion of the Executive Officer such as development of Riparian Management Plans and Erosion Control Plans. The drafted order states in Item #13, that 15 ranches have been identified as the largest dischargers, to our knowledge none of these ranches have been asked to complete any plans. This seems like the most appropriate place for such an action to occur, yet it hasn't. The current approach of the existing waiver has proven to be less than adequate at achieving community participation in TMDL restoration activities. It is for this reason that QVIR can not support the drafted Order No. R-1 2017-0031 Scott Ag Waiver.

The Waiver states in item #18 the future intention of the RWB to address water quality concerns through a permitting program more consistent with the rest of the state. Implementing a tiered approach with appropriate fees is something the Tribe could support and feels would have been more appropriate from the beginning. The current approach, for the past ten years, resulted in not one Scott River landowner, aside from myself, showing up to the public meeting in Yreka for the waiver renewal. There is clearly a disregard for the TMDL program from most landowners in the Scott River and without anyone being penalized for not participating, landowners simply have no reason to comply. We support

Administration: 530-468-5907 Fax: 530-468-5908

13601 Quartz Valley Road, Fort Jones, CA 96032

the approach described in Item #18 and would also support required plans for riparian vegetation and erosion control for at least the top 15 ranches identified as top polluters. The Tribe feels that would be a good start for the next five years and progress can be evaluated in 2022 as to whether that approach is more successful.

With the help of our consultants, we have compiled data associated with the Scott River water temperatures and riparian vegetation to analyze and evaluate progress with the current approach.

SUMMARY OF SCOTT RIVER WATER TEMPERATURE DATA
Data collected by a multitude of entities., compiled/graphed by Riverbend Sciences.

Klamath Tribal Water Quality Consortium has commissioned an analysis of Klamath Basin stream temperatures which is currently in progress. For that analysis, Riverbend Sciences has compiled approximately 29 million individual measurements of stream temperature collected by a multitude of entities, totaling over 4,500 site-years. In these comments on the TMDL waiver, we present some preliminary excerpts from that ongoing analysis. Unfortunately, we had a difficult time obtaining data for the private lands in the Shasta and Scott Rivers, so our ability to analyze potential changes in temperature conditions is limited to a relatively small number of sites.

Stream temperatures at a single site can vary substantially from year to year, making it difficult to determine whether locally controllable factors such as riparian conditions or streamflow are changing or if any apparent changes in stream temperatures are just year to fluctuations in climate. The upcoming Klamath Tribal Water Quality Consortium will use stream network spatial statistical models to address these questions. In the interim, for these TMDL waiver comments we utilize a simpler approach to dealing with climate. Rather than attempting to correct for year-to-year differences in climate, we calculated an index which designates years as cool vs. warm at the geographic scale of the Lower/Middle Klamath Basin, so that when an annual time series for a site is displayed it can be placed in context. Then index of cool vs. warm years is based on the MWMT relative anomaly (i.e., ratio of MWMT for individual years to the mean MWMT calculated from all years) using a method previously developed by Asarian (2016) in the South Fork Trinity River and as calculated as follows. First, using only those sites with at least five years of data, we calculated each site's mean MWMT. For each site, we then divided the MWMT for each year by the mean MWMT. The result is the relative anomaly, a unitless ratio which can then be averaged across all sites within a year, allowing relatively "apples-to-apples" comparisons of the general warmth of each year (Figure 1). The five warmest years were 1992, 2006, 2009, 2014, 2015 and the five coolest years were 1995, 2008, 1993, 1999, 2011 (Figure 2).

Figures 3 through 6 show time series of Maximum Weekly Maximum Temperature (MWMT) at several Scott River sites collected by USFS, USFWS, and QVIR. MWMT is the average daily maximum temperature during the hottest seven-day period of the year. Adjacent sites are grouped together for comparison. Recent years such as 2014 and 2015 were among the warmest on record at the Scott River sites, suggesting that temperature conditions in the Scott River have not improved since the adoption of the TMDLs. The inter-annual pattern at the Shasta River sites (Figures 7 through 9) is generally similar to the Scott River sites (i.e., not improving over time), except CDFW's site BSC 1 the mouth of Big Springs Creek on the Nature Conservancy's Big Springs Ranch where MWMT appears to have decreased since 2008 despite adverse climate conditions in 2014-2015.

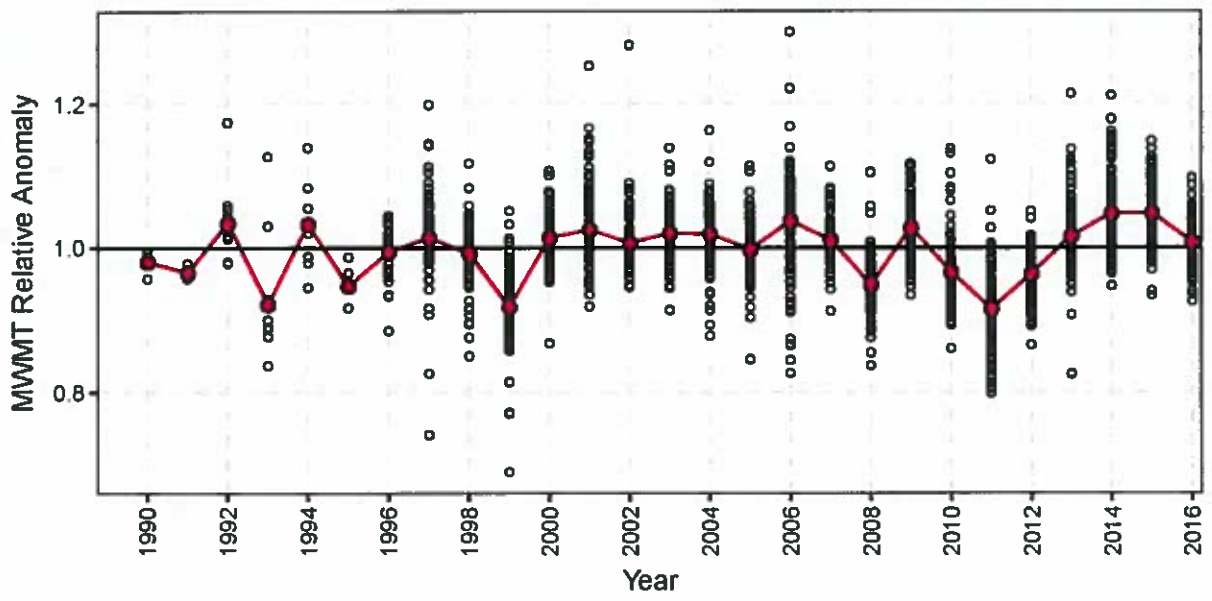


Figure 1. Annual time series of MWMT relative anomaly (i.e., ratio of a site-year's MWMT to a site's mean MWMT) for each site and year (black circles). Large red circles are the mean of all sites within a year. Warm years have relative anomalies greater than 1 while cool years have relative anomalies less than 1. The analysis includes hundreds of sites in the Lower and Middle Klamath Sub-Basins including many in the Scott sub-basin but not many in the Shasta sub-basin.

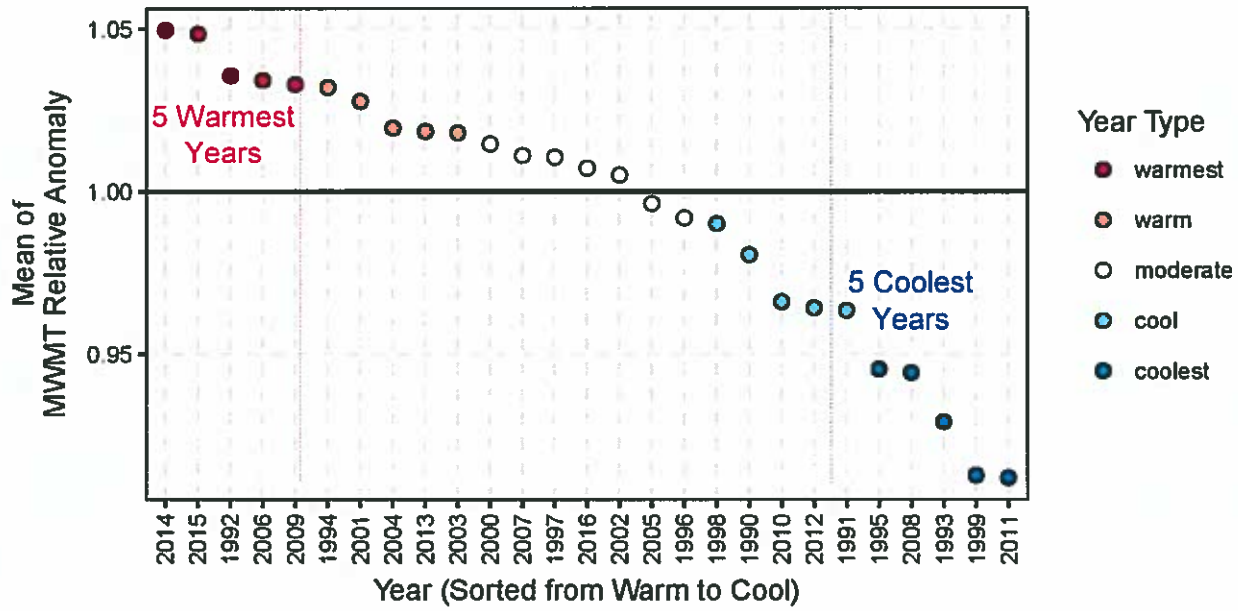


Figure 2. Mean of MWMT relative anomaly (i.e., mean ratio of a single-year MWMT to a mean MWMT) for each year 1990 to 2016, indicating generalized basin-scale cool and warm years. X-axis is sorted in same order as y-axis. Points in this graph are the same as the red circles in the previous figure. Warm years have relative anomalies greater than 1 while cool years have relative anomalies less than 1.

Scott River near Mouth (river mile 0-0.5 up to Roxbury Bridge):

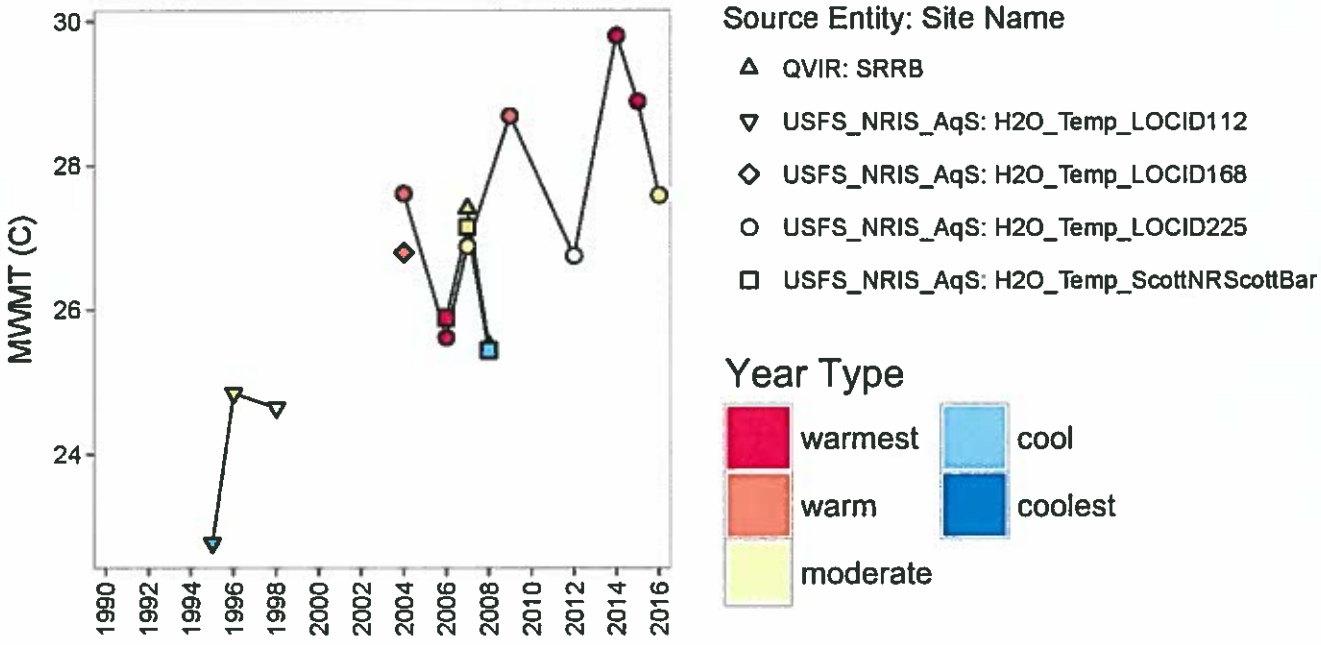


Figure 3. Time series of Maximum Weekly Maximum Temperature (MWMT) at the Scott River near its mouth. Each point is one year, site, and source entity. Each site is shown as a unique symbol shape, which is then colored by MWMT according to year type.

Scott River at second bridge (river mile 1.5):

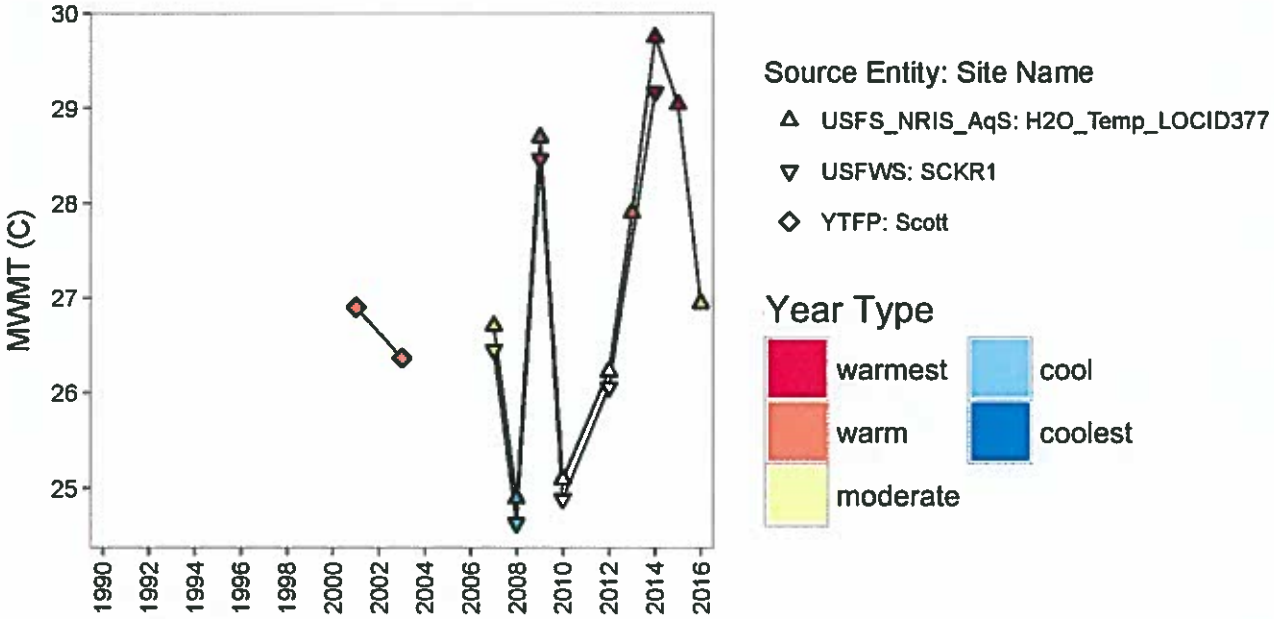


Figure 4. Time series of Maximum Weekly Maximum Temperature (MWMT) at the Scott River 1.5 miles upstream from its mouth. Each point is one year, site, and source entity. Each site is shown as a unique symbol shape, which is then colored by MWMT according to year type. Data from USFWS site in 2013, 2015-2016 are omitted from this graph because they do not match the pattern observed at adjacent sites and may be erroneous.

Scott River near USGS gage:

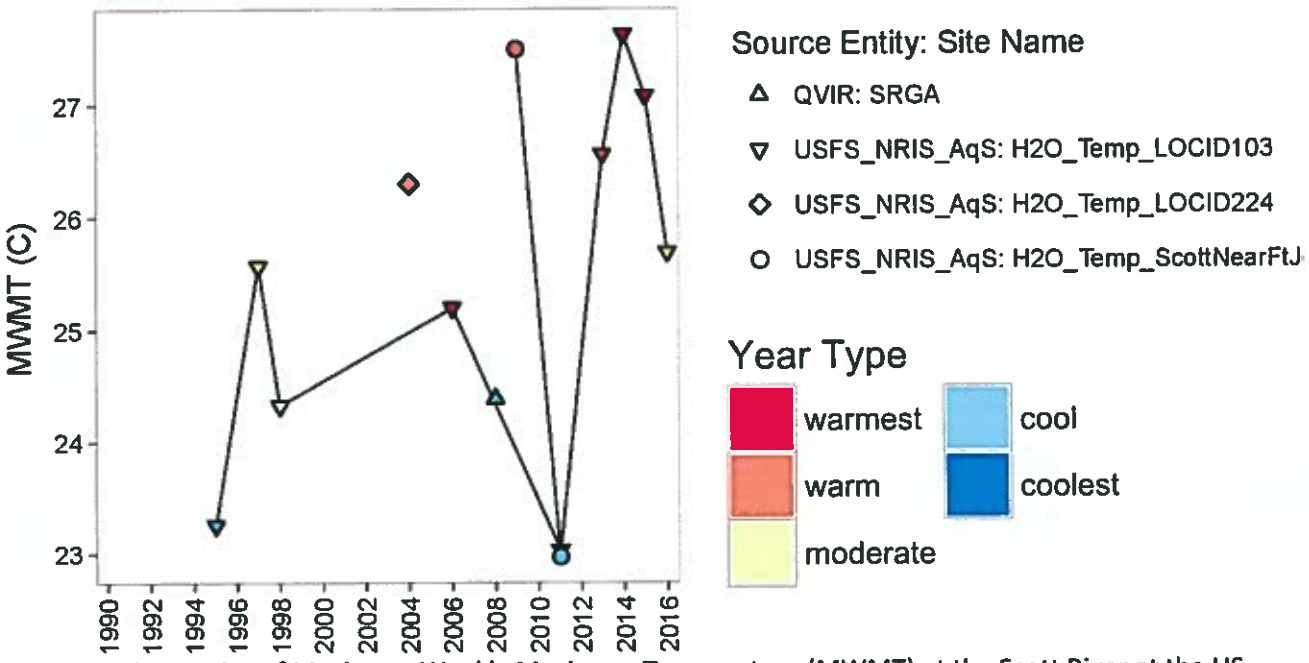


Figure 5. Time series of Maximum Weekly Maximum Temperature (MWMT) at the Scott River at the US Geological Survey streamflow gage at the outlet of Scott Valley. Each point is one year, site, and source entity. Each site is shown as a unique symbol shape, which is then colored by MWMT according to year type.

East Fork Scott River upstream of confluence with mainstem Scott River:

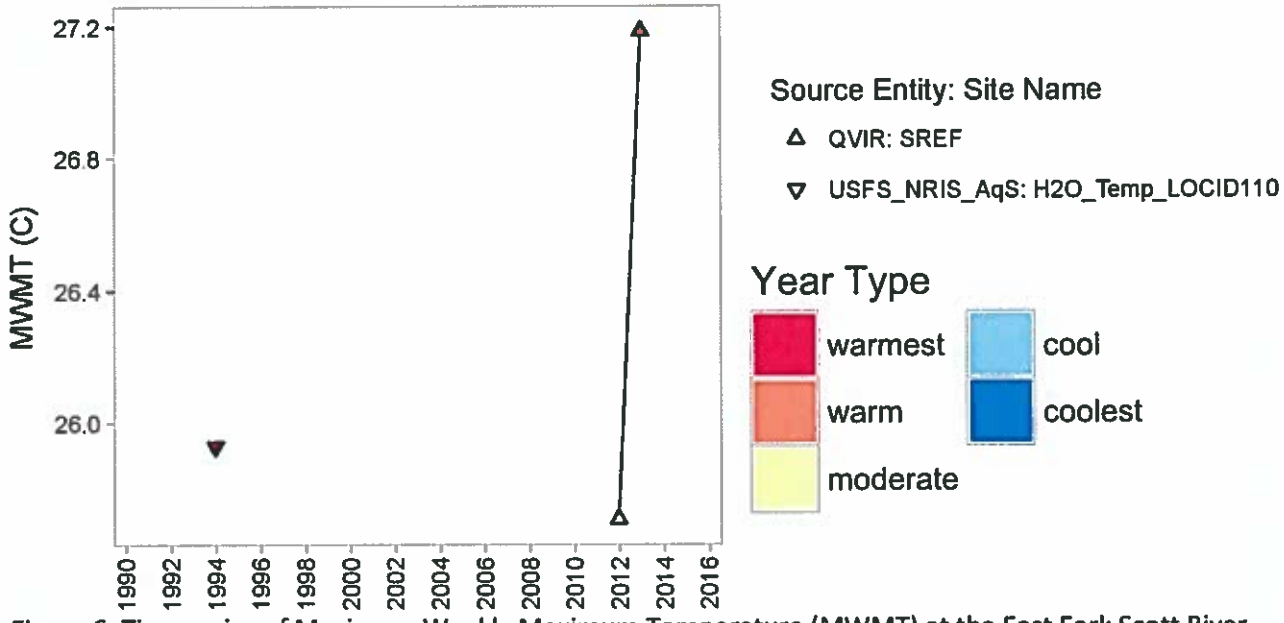


Figure 6. Time series of Maximum Weekly Maximum Temperature (MWMT) at the East Fork Scott River upstream of the confluence with the mainstem Scott River. Each point is one year, site, and source entity. Each site is shown as a unique symbol shape, which is then colored by MWMT according to year type.

REFERENCES

Asarian, J.E. 2016. Stream Temperatures in the South Fork Trinity River Watershed 1989-2015. Prepared by Riverbend Sciences for The Watershed Research and Training Center, Hayfork, CA. 61p. + appendices. Available online at: https://drive.google.com/open?id=0B2p7GuVSL4OXd2hoLWFYZnRzMUk

Assessment of Riparian Vegetation in Scott River Using Aerial Photos

Prepared by Riverbend Sciences.

Summary

As documented in the 2005 TMDL staff report, riparian conditions in the Scott Valley are substantially degraded from their historic, and potential, conditions. For example, Figures 4.14a and 4.14b from the TMDL staff report show that riparian vegetation is far shorter than site potential throughout almost the entire length of the Scott River in Scott Valley (river kilometers 35 through 80).

To evaluate the recovery of the riparian vegetation in the Scott River since the adoption of the Scott River TMDL in 2005, we conducted a brief assessment of riparian vegetation in selected locations in Scott Valley using aerial photos, primarily from Google Earth for the years 1993, 2006, and 2016. Photos from other sources are attributed in captions. Locations were selected based on perennial tributaries with potential for year-round cool water (i.e., relatively small drainage area or potential for groundwater contributions), and adjacent mainstem Scott River reaches are also included. Images are arranged three images per page when images fit, otherwise one to two images per page.

Overall, time series comparisons of riparian vegetation show mixed results from 1993 to 2016: improvement in some areas, no improvement on other areas, and even degradation in other areas. The degradation occurred in the Big Slough/Kidder Creek area, where despite the TMDL requirement that landowners allow natural riparian vegetation to grow, there is an area of Big Slough/Kidder Creek approximately 1 kilometer long area where riparian vegetation was removed to expand an alfalfa field into the riparian/wetland area.

NCRWQCB staff noted in a June 29 presentation on the Scott River Waiver that approximately 11 acres of riparian plantings have occurred since adoption of the TMDL, equating to approximately 1 acre per year. To put 11 acres into the context of the Scott River's degraded state, consider the following simplified back-of-the-envelope calculations. Multiplying the 45 kilometers of the Scott River in Scott Valley with degraded riparian vegetation (see Figures 4.14a and 4.14b) by an assumed minimal 10-meter riparian buffer on each side of the river, then perhaps riparian restoration is needed on an area of at least 0.90 km^2, or 222 acres. At the current rate of 1 acre per year, that would take over 200 years.

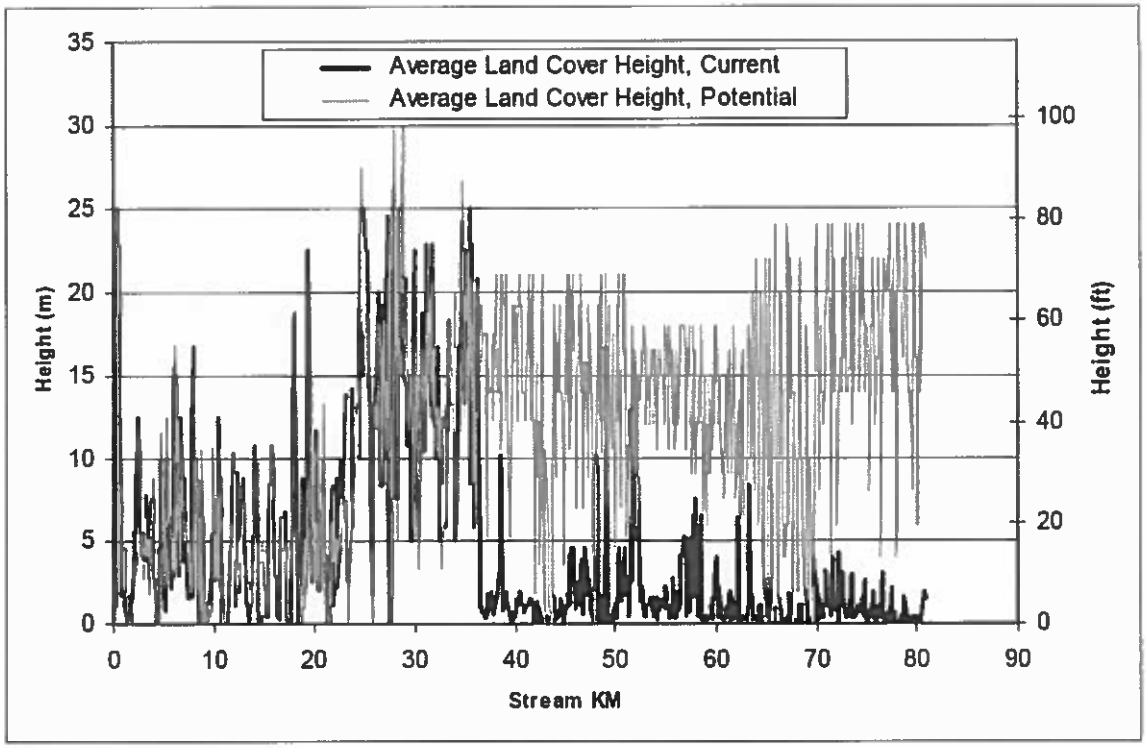


Figure 4.14A: Modeled average land cover heights, left bank, Scott River mainstem

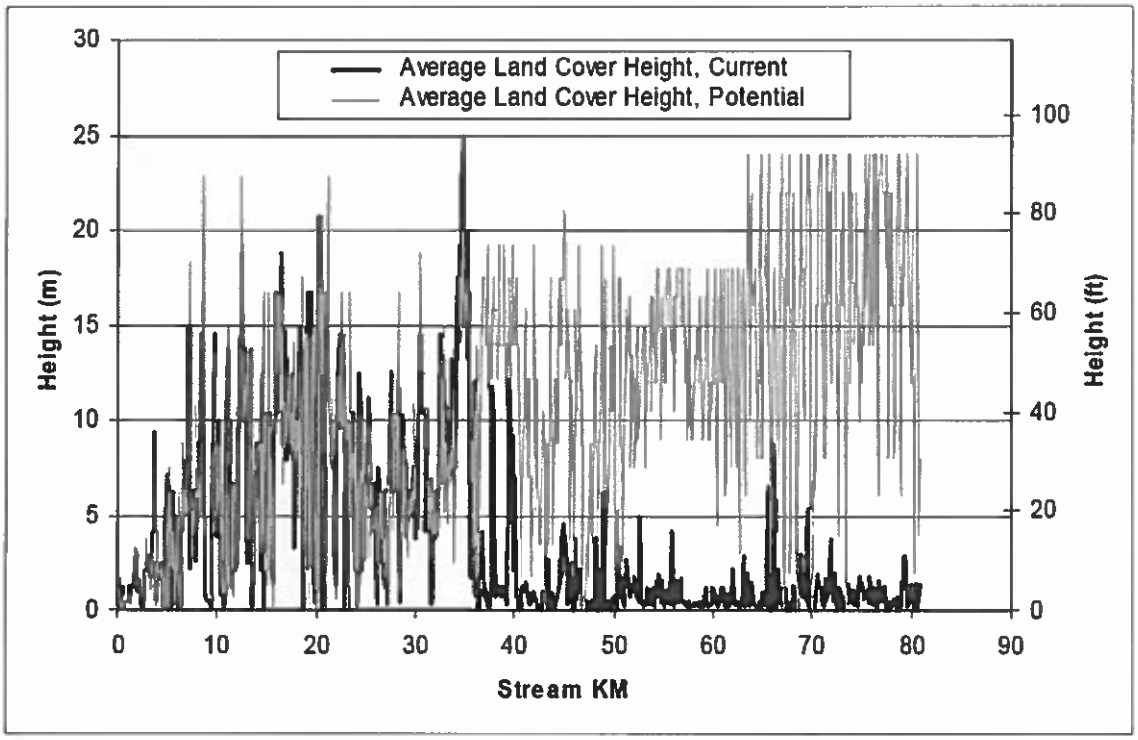


Figure 4.14B: Modeled average land cover heights, right bank, Scott River mainstem

East Fork Scott River

The Scott TMDL staff report found that most of the East Fork Scott River upstream of river kilometer 9 had levels of effective shade far below potential, as shown in Figure 4.28:

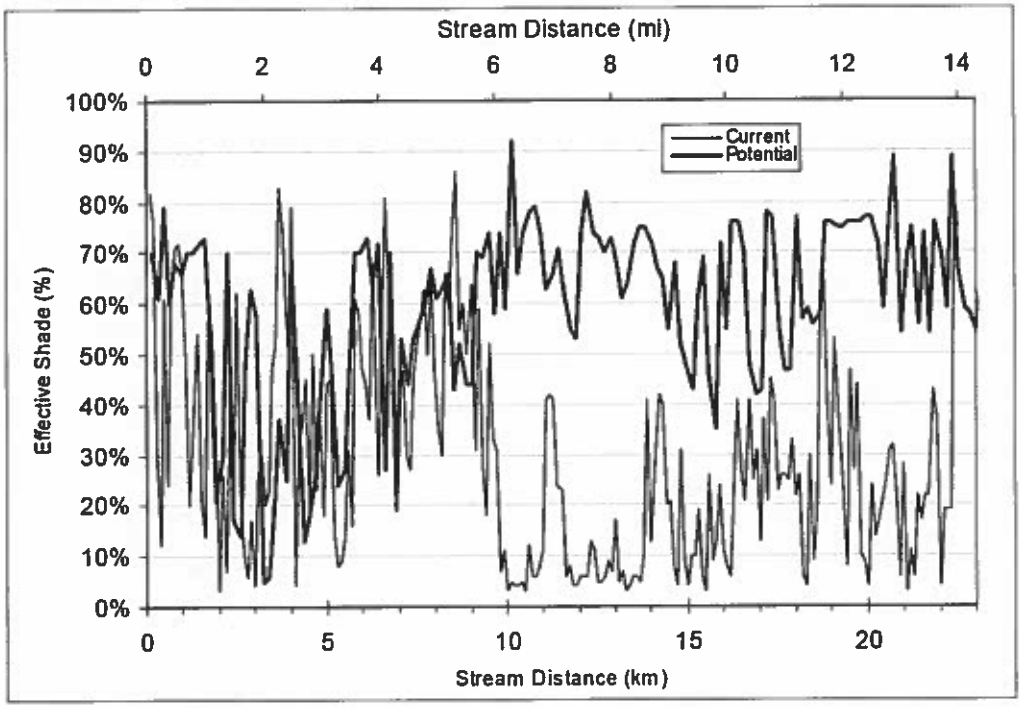


Figure 4.28: Current and potential effective stream shade, East Fork Scott River, July 25, 2003.

The TMDL staff report does not provided a key or map marking river kilometers for East Fork Scott River, so it is difficult to ascertain the shade values any particular location. A historical comparison of air photos from two reaches of the East Fork Scott River shows no improvement in one reach (Figure 1, approximately 2km long reach upstream of Kangaroo Creek, river kilometers not know but likely roughly 12-14) and some improvement in the other reach (Figure 2, approximately 2km long reach downstream of Kangaroo Creek, river kilometers not know but likely roughly 10-12).

Figure 1. Poor riparian conditions along East Fork Scott River upstream of Kangaroo Creek, with little to no improvement from 1993 to 2016.

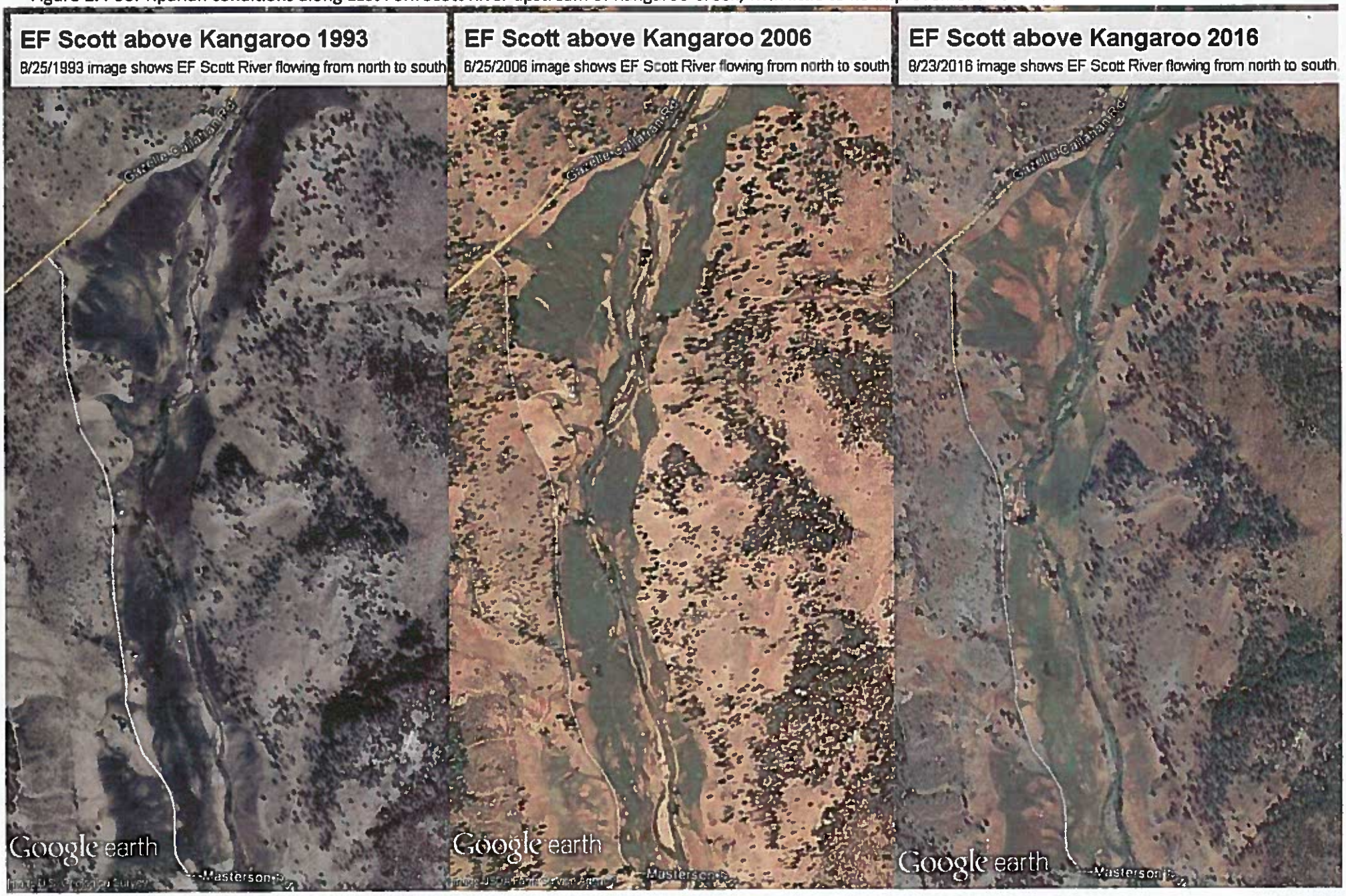
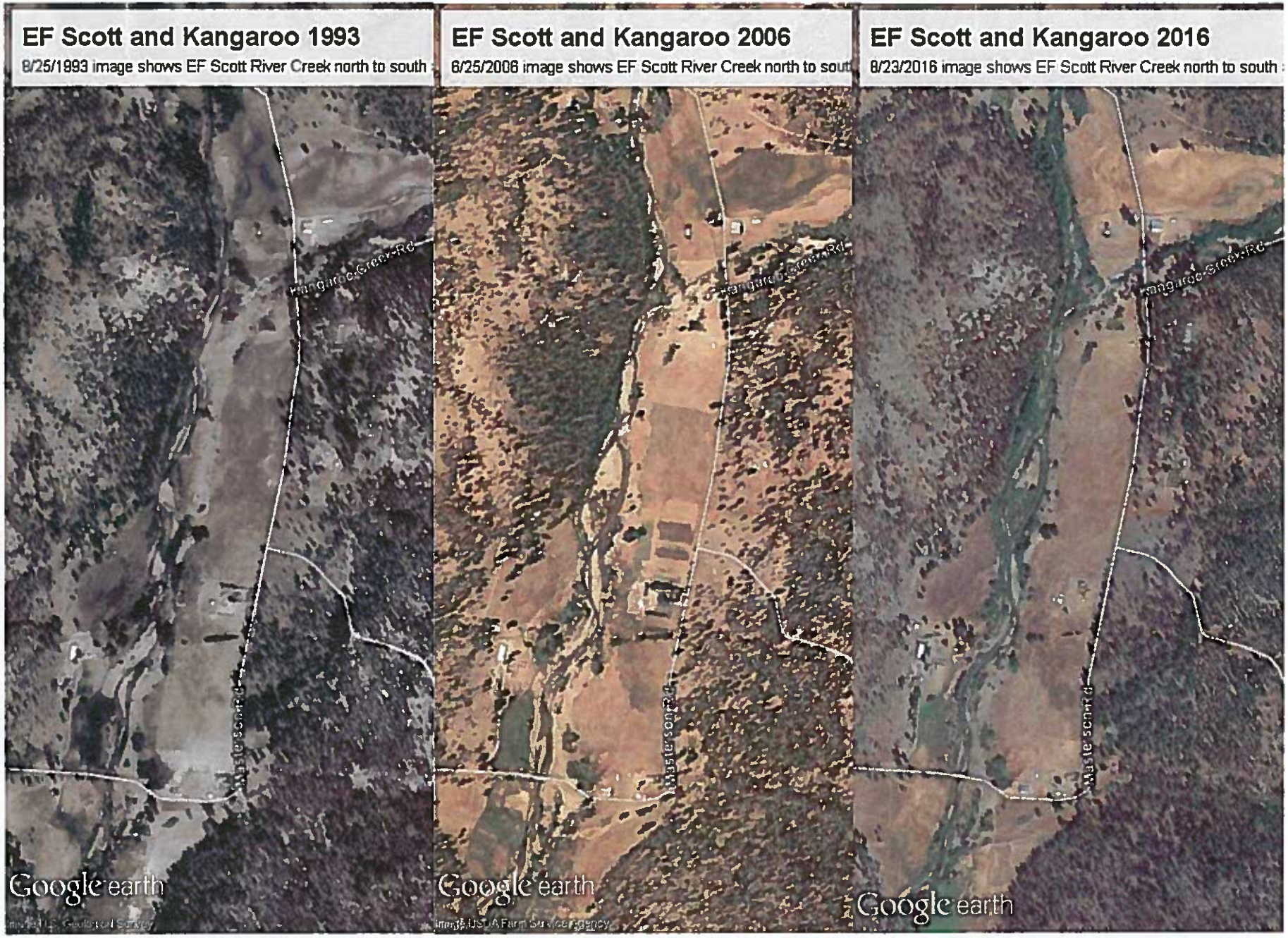


Figure 2. Poor riparian conditions along East Fork Scott River downstream of Kangaroo Creek in 1993 and 2006, with conditions improving in 2016.



Southern Portion of Quartz Valley

Riparian conditions in southern Quartz Valley mostly remain the same from 1993 to 2016 (Figures 3 and 4). An exception is a half-mile reach of Mill Creek immediately upstream of Shackleford Creek which improves substantially from 1993 to 2006 (and further improved in 2016). Very poor conditions remain on the alluvial fans of Mill Creek and Shackleford Creeks. The TMDL analysis determined that in most of Quartz Valley current vegetation height was more than 10 meters shorter than site potential (Figure 5).

Figure 3. Aerial photo of Quartz Valley/Mill Shackleford in 1993.

Figure 4. Aerial photo of Quartz Valley/Mill Shackleford in 2006 and 2016.

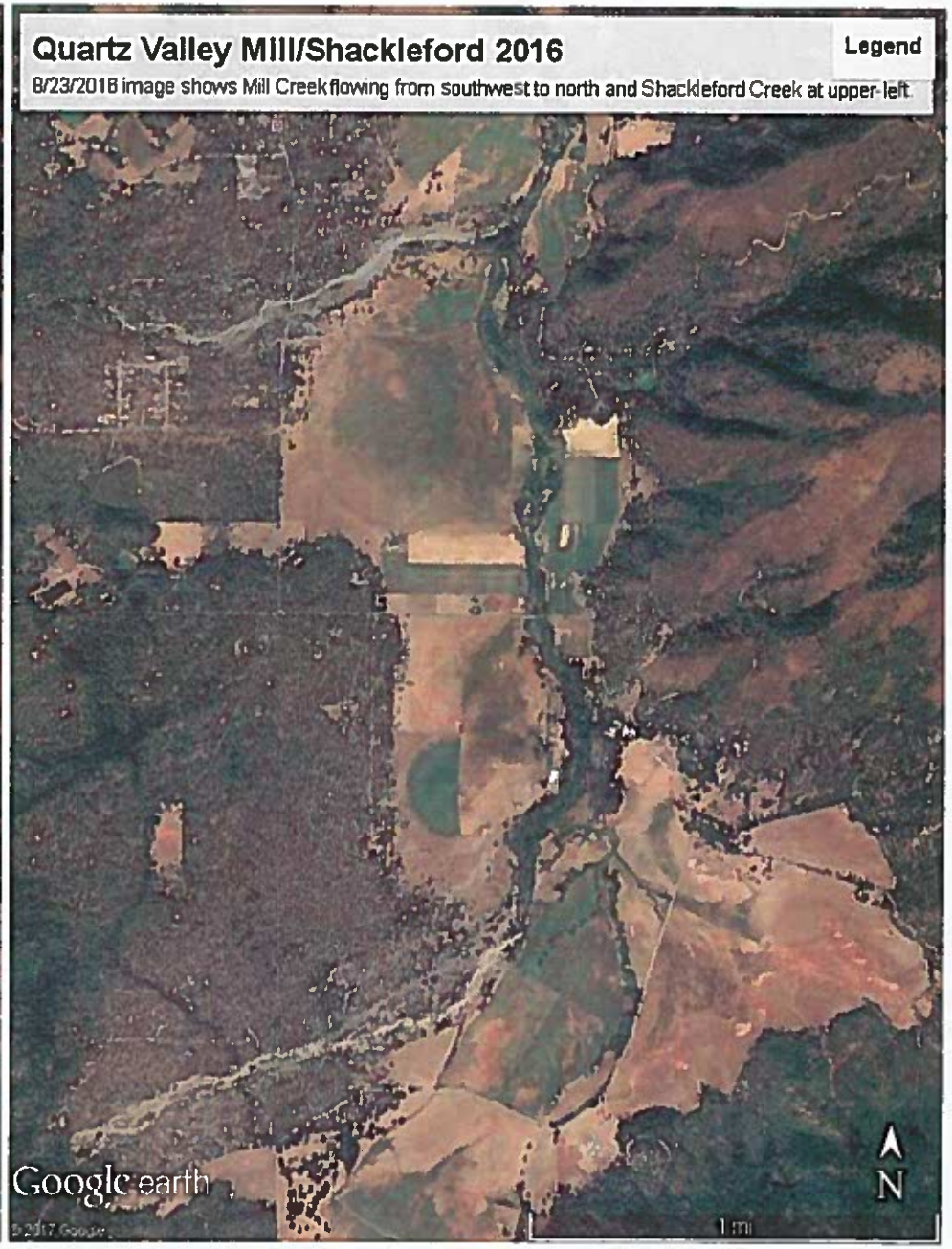
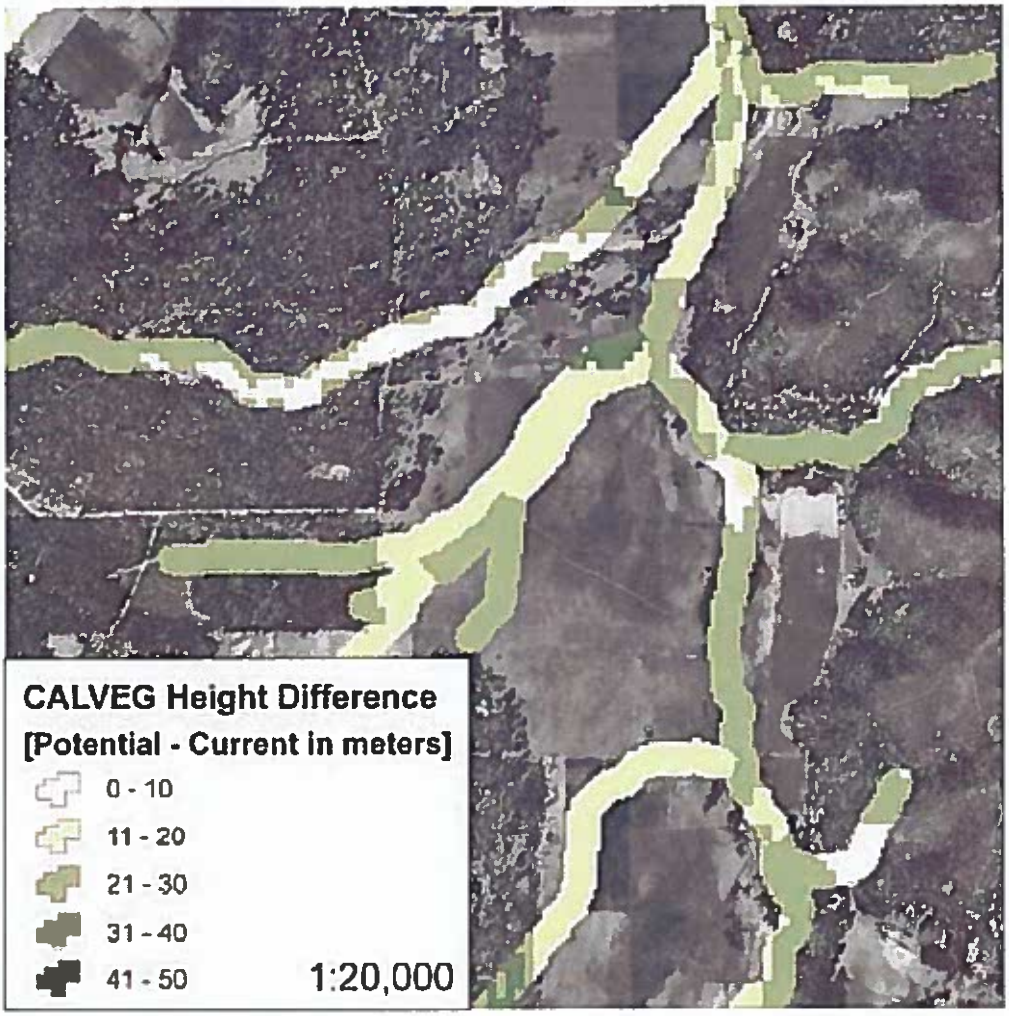


Figure 5. Difference in "current" vegetation height from CALVEG and site potential vegetation height, determined in TMDL analysis. Area shown is in Quartz Valley, same as upper left corner of Figures 3 and 4. Figure adapted from the Scott TMDL Appendix A Figure 4c.



Northern Portion of Quartz Valley (lower Shackleford and Sniktaw Creeks) and Adjacent Reaches of Scott River

Riparian conditions along lower Shackleford and Sniktaw Creeks remained sparse from 1993 through 2016 (Figure 6 and 7). Portions in southern part of Figures 6 and 7 show slight improvements, as does the mainstem Scott River. The TMDL analysis determined that current vegetation height in this reach of the Scott River (approximately river kilometers 38 and 40.5) was far shorter (range 0-20 m) than site potential (TMDL Figures 4.14A and 4.14B).

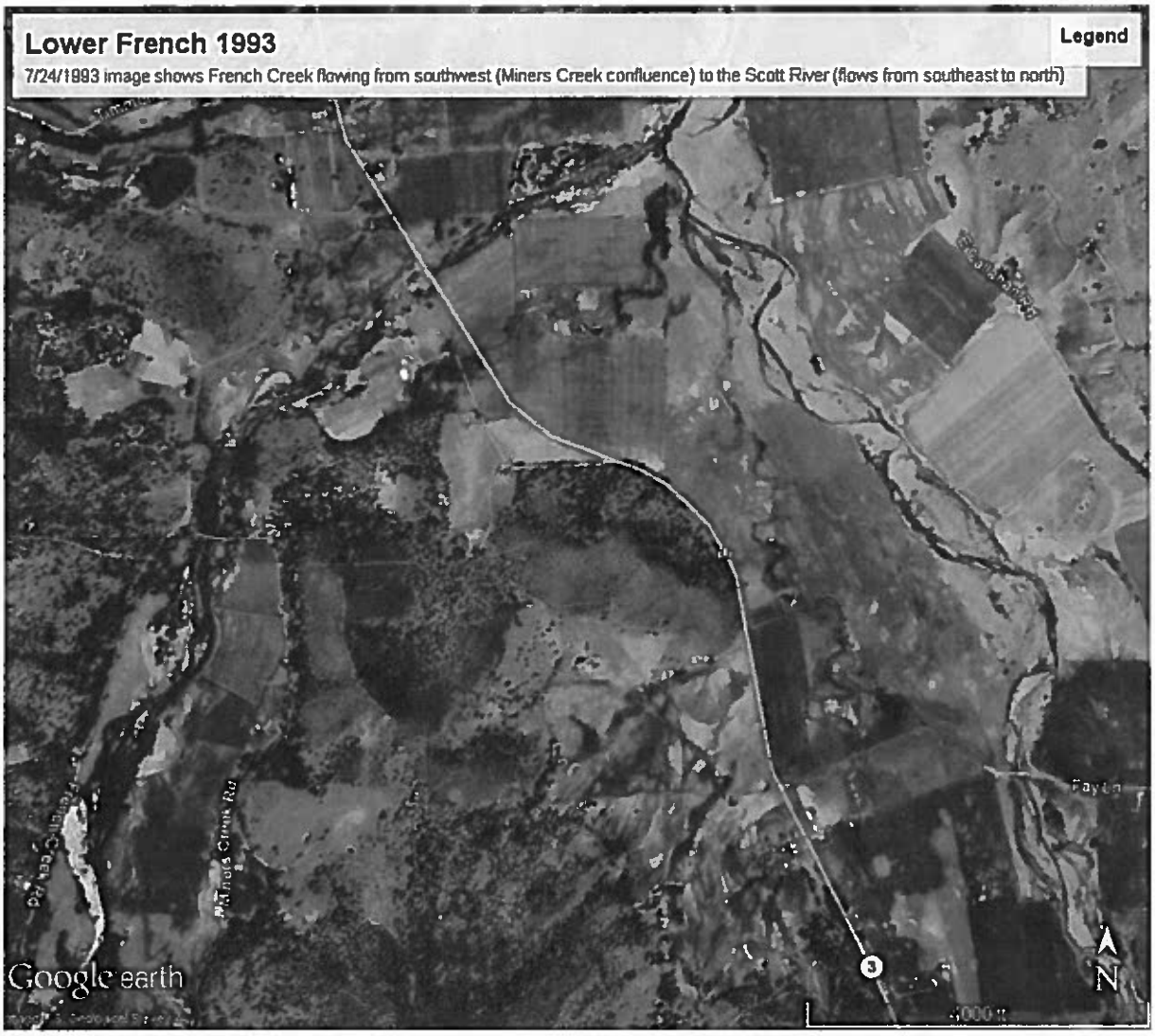
Figure 6. Air photo of riparian conditions along lower Shackleford Creek, Sniktaw Creek, and Scott River in 1993.

Figure 7. Air photo of riparian conditions along lower Shackleford Creek, Sniktaw Creek, and Scott River in 2006 and 2016.

Lower French Creek and Adjacent Reach of Scott River

Riparian conditions lower French Creek are similar in 1993 and 2006, then improve in 2016 (Figures 8 and 9). Conditions along the Scott River improve immediately upstream of French Creek confluence from 1993 to 2006, continue to improve through 2016 (Figures 8 and 9). There is less improvement along Scott River near Fay Lane (see lower-right corner of Figures 8 and 9).

Figure 8. Air photo of riparian conditions along lower French Creek and Scott River in 1993.



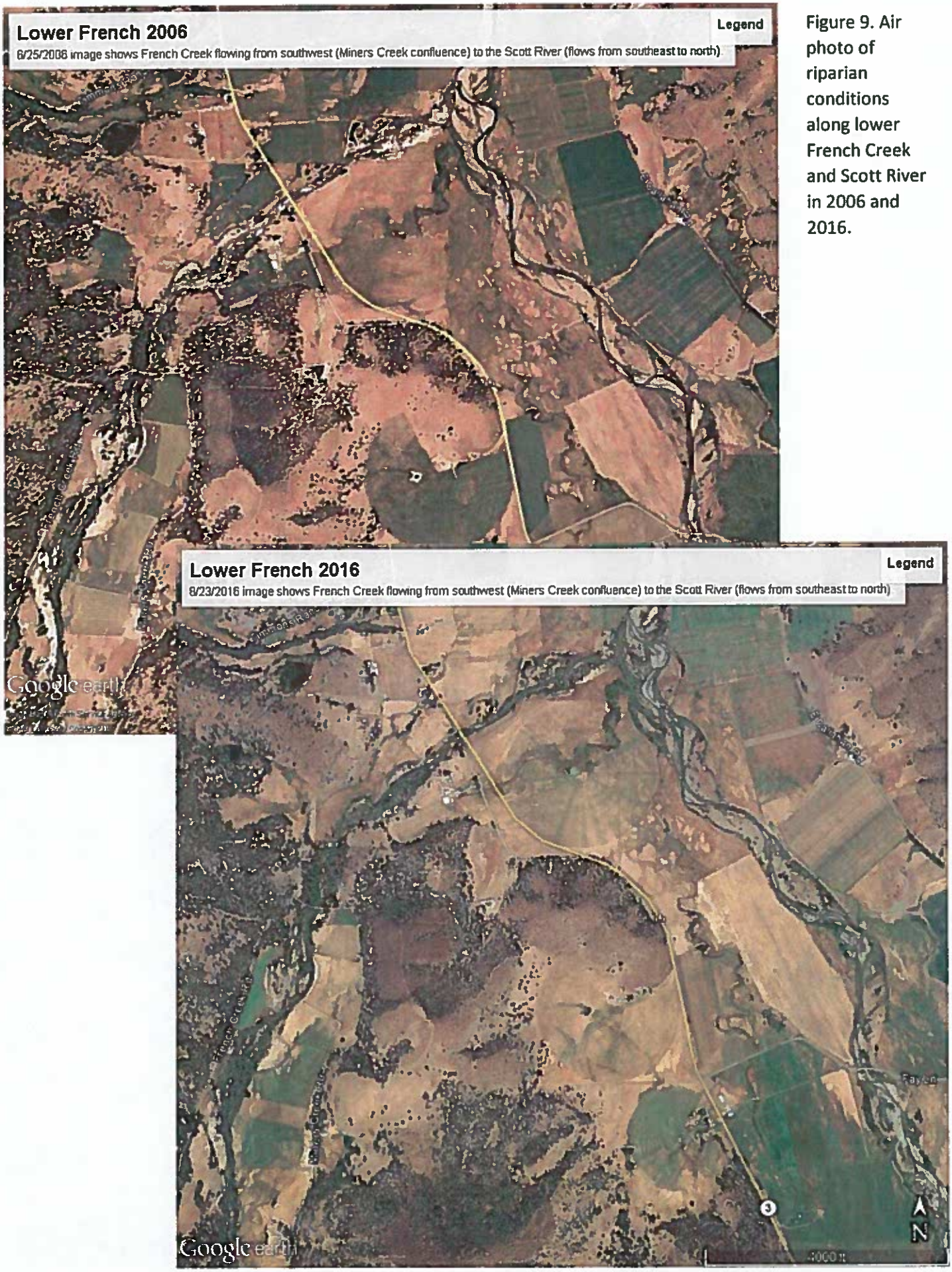


Figure 9. Air photo of riparian conditions along lower French Creek and Scott River in 2006 and 2016.

Kidder Creek/Big Slough

An 1885 topographic map (Figure 10) and a series of air photos from 1951, 1993, 2006 and 2016 show the progressive channelization and conversion of the Kidder/Creek Big Slough from a complex wetland into increasingly intensive agricultural uses, exemplifying the land use history of the rest of Scott Valley but lagged in time, perhaps because it was one of the most swampy portions of the Valley so was more difficult to convert. Big Slough is on the west side of the Scott Valley southwest of Fort Jones, receiving water from Kidder, Patterson and Crystal Creeks. The 1951 photo shows that while the Scott River is channelized, Big Slough retains impressive meanders along its entire length (Figure 11). By 1993, Kidder Creek/Big Slough has been fully channelized at its north end but it still retains some meanders and multi-threaded channels at its southern end (Figure 11). In 2006, Kidder Creek/Big Slough appears similar to its 1993 state. The 2016 photo shows that despite the TMDL requirement that landowners allow natural riparian vegetation to grow, there is an area of Big Slough/Kidder Creek approximately 1 kilometer long area where riparian vegetation was removed to expand an alfalfa field into the riparian/wetland area (see arrows in Figure 12). Based on other Google Earth photos (not shown here) this conversion likely occurred between 2009 and 2012. In the area shown in the figures, the Scott River remained channelized with little riparian vegetation from 1951 to 2016 (Figures 11 and 12).

Figure 10. Historical 1885 topographic map of Scott Valley (http://www.lib.utexas.edu/maps/topo/california/txu-pclmaps-topo-ca-shasta-1885.jpg). Note: map extent is much larger than (Figures 11 and 12).

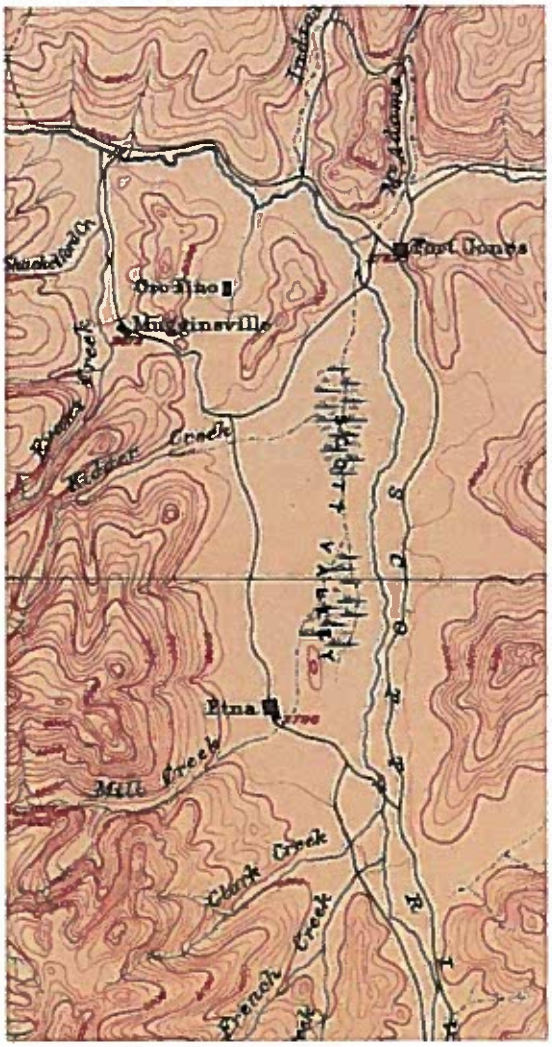


Figure 11. 1951 and 1993 aerial photos of Scott Valley just south of Fort Jones showing Big Sloug/Kidder Creek on left, and Scott River on right.The 1951 photo is from USGS EROS data archive (https://earthexplorer.usgs.gov/metadata/4660/AR1PM0000030043/).

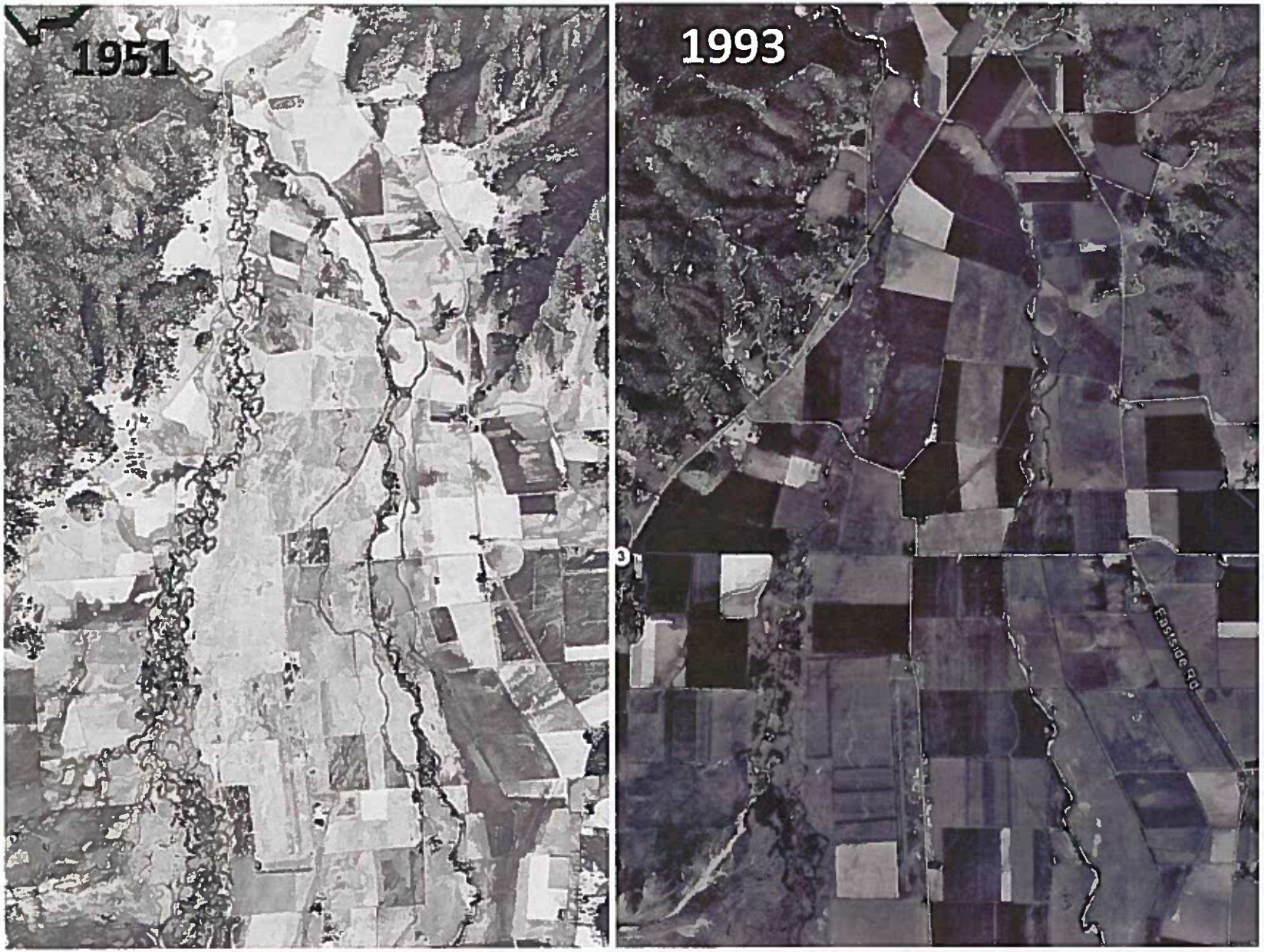
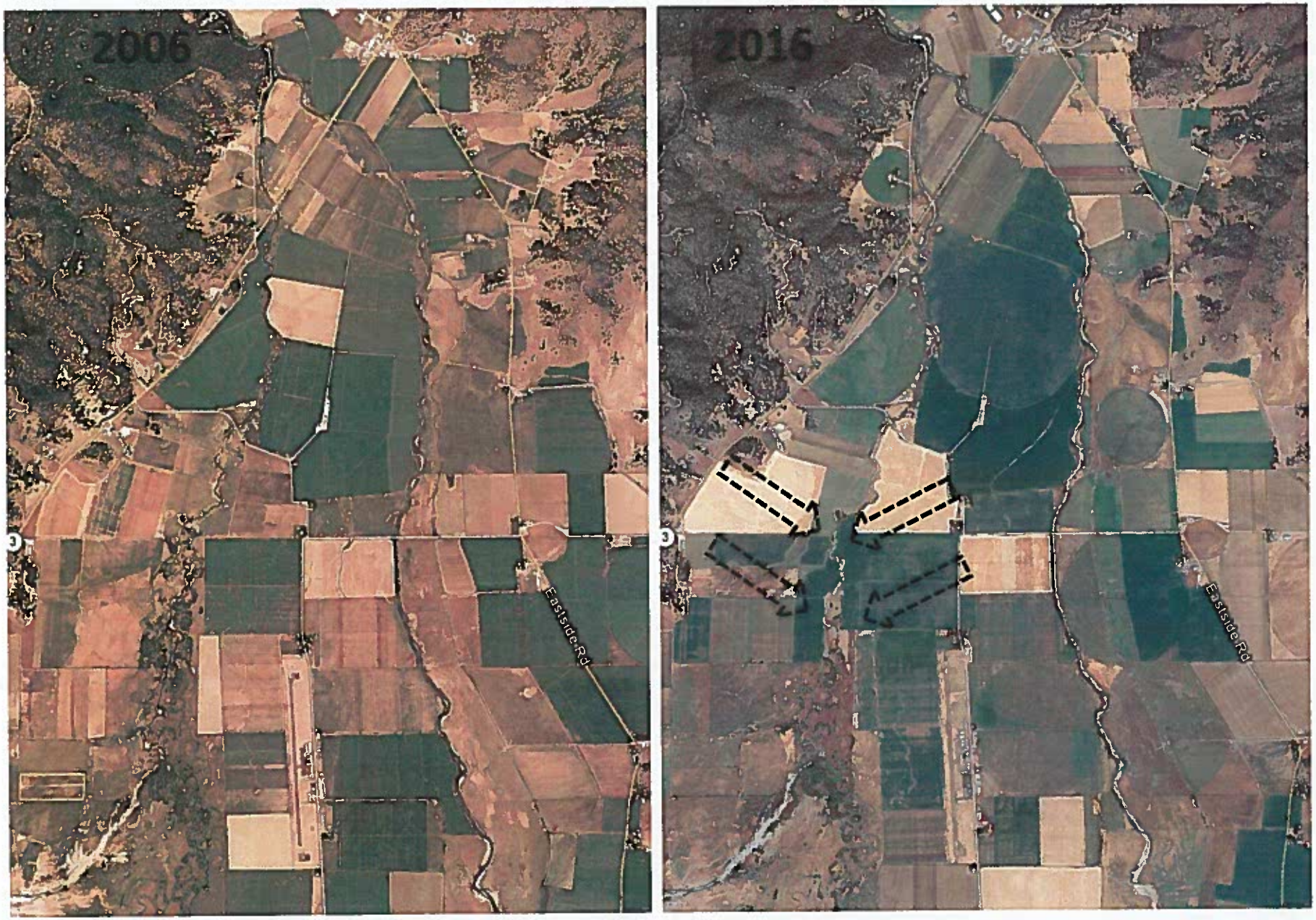


Figure 12. 2006 and 2016 aerial photos of Scott Valley just south of Fort Jones showing Big Slough/Kidder Creek on left, and Scott River on right. Arrows in 2016 photo point to areas where riparian vegetation was removed to expand an alfalfa field (based on other Google Earth photos, likely in 2009-2012).



In conclusion, we would like to see a revision of the draft Scott Waiver that incorporates all aspects of the Implementation Plan and creates a tiered structure with associated fees as described briefly in Item 18 and used currently throughout the state. We would also like to express our support and agreement with the legal review and conclusions offered in the Karuk Tribe comments for both the Scott and Shasta Waivers. We thank you again for this opportunity, we hope to continue collaborative efforts in the basin to restore water quality and enhance salmonid habitat. If there are any questions regarding these comments please contact me at 530-468-5907 ext 318 or crystal.robinson@qvir-nsn.gov.

Sincerely,

Crystal Robinson

Crystal Robinson

Environmental Director

Quartz Valley Indian Reservation

RCD
SHASTA VALLEY
RESOURCE CONSERVATION DISTRICT

215 Executive Court, Suite A, Yreka, CA 96097
(530) 572.3120
www.svrcd.org

July 5, 2017

Eli Scott
North Coast Regional Water Quality Control Board
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

Dear Mr. Scott,

Shasta Valley Resource Conservation District (SVRCD) has been involved in the TMDL process as a Responsible Party since its adoption (Table 4-14 of the Action Plan in Appendix A of the draft waiver). Our mission states that we work in voluntary cooperation with interested landowners and partners to enhance the management and sustainable use of natural resources in order to ensure the long term economic viability of the community. In pursuit of water quality improvements for the Shasta River to reduce TMDL burdens, the SVRCD has actively worked to assist the NCRWQCB, other agencies and the local agricultural community to define and create new programs to address the temperature and dissolved oxygen (DO) constituents. The SVRCD created a tailwater management strategy, using LIDAR technology and local consultants to target non-point flood irrigation run-off. We have implemented many water management and riparian projects described in the TMDL, established a trend monitoring network throughout the basin, and have been instrumental in the removal of major and minor irrigation diversion impoundments.

Our comments on the draft Shasta TMDL Waiver are as follows:

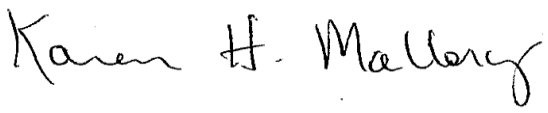
1. We support the no-fee approach that requires no registration or administrative response from the landowners unless contacted by RWB.
2. We support the intent for coordinated, cooperative methods that encourage partnerships and provide a stewardship approach towards comprehensive watershed restoration.
3. We estimate that 90 percent of the targeted properties have been interested in working with the SVRCD and have completed Water Quality Ranch Plans. However these plans were referred to as “Ranch Assessments” at the TMDL Waiver Workshop and we believe in most cases they will meet the requirement for a Ranch Management Plan and/or Tailwater Management Plan written into the Order and should be considered as such.
4. Voluntary efforts have resulted in a high degree of cooperation between local agricultural land owners, the SVRCD and agencies to implement structural and management changes. Our work on fencing and riparian planting has also been well received and has resulted in over 91% of the mainstem Shasta River currently protected from livestock impacts. Our role in education, outreach and cooperative collaboration has paid off. The 2007 TMDL Action Plan has resulted in a strong and

positive response from the local community to address the listed water quality impairments. However, even with this effort, some of the targets or interim goals have not been reached. We believe it would be worthwhile to revisit the initial hypothesis rather than infer targets were not met due to lack of effort on the part of the agricultural community.

5. The TMDL implementation process is dependent on monitoring to show results and success. Results can be demonstrated in a combination of specific project monitoring and trend monitoring over a period of time. Yet funding for monitoring has become difficult to obtain, especially for trend monitoring. Consistent monitoring at established locations is crucial and is described as part of the stewardship framework. We ask the Water Board to make funding trend monitoring a priority and encourage other agencies to do the same in order to continue to evaluate TMDL progress as a result of the work required under this waiver.

We appreciate the efforts that have gone into the waiver and the opportunity to comment. The combined wisdom gained during the first ten years of the TMDL by the Regional Water Board and SVRCD is of great value and we hope to continue to work together on water quality issues in the Shasta into the future.

Sincerely,



Karen Mallory, District Manager
On behalf of the Shasta Valley Resource Conservation District Board of Directors

cc: Matt St. John, Executive Director, North Coast Regional Water Quality Control Board
Elizabeth Nielsen, Natural Resources Policy Specialist, Siskiyou County

COUNTY OF SISKIYOU
Board of Supervisors

P.O. Box 750 ▫ 1312 Fairlane Rd
Yreka, California 96097
www.co.siskiyou.ca.us

(530) 842-8005
FAX (530) 842-8013
Toll Free: 1-888-854-2000, ext. 8005

July 11, 2017

Matthias St. John, Executive Director
North Coast Regional Water Quality Control Board
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

Subject: Siskiyou County Comments – Scott and Shasta Rivers Renewal of TMDL Conditional Waiver of Waste Discharge Requirements

Dear Mr. St. John:

The Siskiyou County Board of Supervisors would like to provide the following comments on the Total Maximum Daily Loads Conditional Waiver of Waste Discharge Requirements for the Shasta and Scott Rivers. We would also like to thank you for meeting with us in person to discuss the waivers, and for allowing us to submit this letter outside of the official comment period to accommodate our July 11th Board meeting.

We understand that the continuance of this waiver process is not guaranteed beyond the five year extension and that a more formal permitting process may be developed for the Shasta and Scott Rivers. We would like to encourage that the Water Board explore the option for continuing this waiver process as it has experienced success amongst irrigators in the Shasta and Scott Valley's, and allows irrigators to enter into a more voluntary and manageable process. We would like to see this type of interaction between the State and irrigators continue, rather than a process which puts more regulatory burden on water users that are already under constant regulatory pressure. Irrigators throughout the Shasta and Scott Valley's, and the County, have performed and completed projects that directly benefit water quantity and quality; most of these actions being performed voluntarily by irrigators. A formal permitting process may not be applicable to the Shasta and Scott Rivers, as most of the activities outlined in the draft waiver are common practices, with known and manageable results. In addition, when developing these and similar programs in the future, the Water Board should be working closely with irrigators and landowners who have the responsibility of participating or complying, rather than special interest groups who have no responsibility and are not directly impacted by the programs.

As we expressed during our meeting with you, the County is hesitant about programs that are developed to handle legal and illegal cannabis cultivation separately from how traditional agricultural activities are mandated and regulated. This is concerning to the County, as our traditional agricultural irrigators constantly carry the responsibility for improving water quality and fish habitat in the Shasta and Scott River systems. Illegal cannabis grows located throughout the County are negatively impacting our surface and groundwater by using illegal pesticides and herbicides, and not properly handling or disposing of these chemicals. The State must use the same programs that govern traditional agricultural waste discharge activities on cannabis operations to either eliminate illegal actions, or ensure that legal ones comply with law and regulation. During the June 29th Regional Water Board meeting that our Natural Resource Policy Specialist attended, several of the Water Board members stated that they would like to see the cannabis and agricultural programs combine as well so that they are all managed on an equal level.

We would also like to reiterate a comment that was provided by the Livestock Advisor with the local UC Extension Office, advising the Water Board that total exclusion of riparian grazing is not completely beneficial to creek and river conditions. Instead, active management and rotational grazing are proactive options which allows for benefits such as invasive weed control. We would like to encourage the Water Board to work with the local UC Extension office on future activities related to grazing, and offer up that the County's Range Advisory Board could be helpful in these efforts as well.

We appreciate the opportunity to comment on the draft waiver, and look forward to the opportunity to stay involved throughout its implementation. If you have any questions, or would like to discuss this further, please feel free to contact Elizabeth Nielsen, Natural Resource Policy Specialist at enielsen@co.siskiyou.ca.us or (530) 842-8012.

This letter was approved by the Siskiyou County Board of Supervisors on July 11, 2017, by the following vote:

AYES: Supervisors Criss, Haupt, Valenzuela, Nixon and Kobseff
NOES: NONE
ABSENT: NONE
ABSTAIN: NONE

Sincerely,

Michael N. Kobseff, Chair
Board of Supervisors

cc: Assembly Member Brian Dahle
cc: Congressman Doug LaMalfa
cc: Assemblyman Ted Gaines
cc: Rural County Representatives of California
cc: California State Association of Counties

COUNTY OF SISKIYOU
COUNTY ADMINISTRATIVE OFFICE

Elizabeth Nielsen, Natural Resource Policy Specialist
P.O. Box 750 • 1312 Fairlane Road, Yreka, CA 96097
Phone: (530) 842-8012, Fax Number: (530) 842-8013
Email: enielsen@co.siskiyou.ca.us

June 15, 2017

Matthias St. John
Executive Officer
North Coast Regional Water Quality Control Board
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

Subject: Comment Period Extension – Scott and Shasta Rivers Renewal of TMDL Conditional Waiver of Waste Discharge Requirements

Dear Mr. St. John:

First, thank you for taking the time to meet with myself, Chair Michael Kobseff and Vice Chair Ray Haupt, to discuss the Scott and Shasta Rivers renewal of TMDL Conditional Waiver of Waste Discharge Requirements. As discussed during this meeting, the North Coast Regional Water Quality Control Board's deadline for comments on the draft waivers does not coincide with the Siskiyou County Board of Supervisors meetings. In order to get Siskiyou County's comment letter approved by the Board of Supervisors, the only available date to do this is July 11th, 2017, two business days after the comment period closes for the draft waivers.

I am respectfully requesting that the comment period be extended for Siskiyou County in order to allow us to draft and approve a letter on July 11th. I will then be able to submit the comment letter to the Water Board no later than July 13th, 2017.

If you have any questions or would like to discuss this matter further, please feel free to call or email me.

Sincerely,

Elizabeth Nielsen

Elizabeth Nielsen
Natural Resource Policy Specialist

From:	St.John, Matt@Waterboards
To:	Scott, Elias@Waterboards
Cc:	McFadin, Bryan@Waterboards
Subject:	FW: Comment Period Extension - Scott and Shasta TMDL Waiver Renewal
Date:	Tuesday, June 27, 2017 11:45:26 AM
Attachments:	Comment Period Extension - Scott and Shasta TMDL Waiver Renewal.msg

Hi Eli:

Please keep this in your records; Siskiyou County request for extension of comment deadline and Chairman Noren's approval. Let me know if you have questions.

Thanks, Matt

Matthias St. John
Executive Officer
North Coast RWQCB
(707) 570-3762
Matt.St.John@waterboards.ca.gov

From: St.John, Matt@Waterboards
Sent: Tuesday, June 27, 2017 11:40 AM
To: 'Elizabeth Nielsen'
Cc: Barber, Terry@CDSS-Import; Ray Haupt; Michael Kobseff
Subject: RE: Comment Period Extension - Scott and Shasta TMDL Waiver Renewal

Dear Elizabeth:

Thank you for your letter and for meeting with my staff and I on June 14th. I have discussed your requested time extension with Board Chairman Noren, and we will accept your written comments on the Scott and Shasta River TMDL Waivers on or before July 13th, 2017. Thank you very much and feel free to contact me if you have any questions.

Sincerely, Matt

Matthias St. John
Executive Officer
North Coast RWQCB
(707) 570-3762
Matt.St.John@waterboards.ca.gov

From: Elizabeth Nielsen [mailto:enielsen@co.siskiyou.ca.us]
Sent: Thursday, June 15, 2017 3:13 PM
To: St.John, Matt@Waterboards

Cc: Barber, Terry@CDSS-Import; Ray Haupt; Michael Kobseff
Subject: Comment Period Extension - Scott and Shasta TMDL Waiver Renewal

Matt,

Attached is the letter requesting that the comment period be extended for Siskiyou County. Thank you again for meeting with us yesterday. If you have any questions please feel free to give me a call.

Elizabeth

Elizabeth Nielsen

Natural Resources Policy Specialist
County of Siskiyou
1312 Fairlane
Yreka, CA 96097
o: (530) 842-8012
c: (530) 598-2776

North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403
(707) 576-2220

NOTICE OF PUBLIC HEARING

of

Orders No. R1-2017-0031 and R1-2017-0032

Establishing

Conditional Waivers of Waste Discharge Requirements for Discharges Related To Specific Land Management Activities in the Shasta and Scott River Watersheds, Siskiyou County

Notice is hereby given that the California Regional Water Quality Control Board, North Coast Region (Regional Water Board) will hold a public hearing to consider adoption of proposed Order No. R1-2017-0032, "Shasta River TMDL Conditional Waiver of Waste Discharge Requirements" (Shasta River Waiver) and proposed Order No. R1-2017-0031, "Scott River TMDL Conditional Waiver of Waste Discharge Requirements" (Scott River Waiver).

When: October 19, 2017, 9:00 am

Where: Weed City Council Chambers
550 Main Street, Weed, CA

Agenda items including all supporting documents will be posted on our website at least 10 days prior to the scheduled meeting. To view or download documents, go to http://www.waterboards.ca.gov/northcoast/board_info/board_meetings/

Background The existing Shasta River Waiver (Order No. R1-2012-0083) and Scott River Waiver (Order No. R1-2012-0084) are set to expire on October 4, 2017. The Waivers waive the requirements to file a Report of Waste Discharge and obtain Waste Discharge Requirements for discharges addressed in the Shasta River TMDL Action Plan and Scott River TMDL Action Plan for dischargers who implement required conditions and the measures outlined in the Orders and Table 4-10 and Table 4-14 of the Water Quality Control Pan for the North Coast Region.

Drafts of the Shasta River and Scott River Waiver renewals were posted on the North Coast Regional Water Board website on June 1, 2017 and interested persons were provided notice of the availability of the renewals on June 1, 2017. Public workshops detailing proposed changes in the draft Scott River and Shasta River Waivers were held in Yreka, California on June 14, 2017 and in Santa Rosa, California on June 29, 2017. Public comment was accepted from June 1, 2017 to July 14, 2017.

Information on the Regional Water Board's Shasta River Watershed TMDL Program, including the existing Waiver and the Shasta TMDL Action Plan, can be found at: http://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/shasta_river/

Information on the Regional Water Board's Scott River Watershed TMDL Program, including the existing Waiver and the Scott TMDL Action Plan, can be found at: http://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/scott_river/

Accessibility - The facility is accessible to people with disabilities. **Anyone requiring reasonable accommodation to participate in the meeting should contact Patti Corsie, Executive Assistant, at (707) 576-2307 or** Patti.Corsie@waterboards.ca.gov **at least 5 working days prior to the meeting.**

Staff Contact - Questions regarding the public hearing, the proposed Shasta River Waiver, or the proposed Scott River Waiver should be directed to Eli Scott, Shasta and Scott Watershed Steward, by phone at (707) 576-2610 or email at Elias.Scott@waterboards.ca.gov.