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September 8, 2021

Via Electronic Mail Only

State Water Resources Control Board
1001 I Street
Sacramento, CA 95814
DWR-MillDeerDrought@waterboards.ca.gov

California Department of Fish and Wildlife
Attention: Jason Roberts
P.O. Box 944209
Sacramento, CA 94244-2090
Jason.Roberts@wildlife.ca.gov

National Marine Fishery Service
Attention: Howard Brown
650 Capitol Mall, 5-100
Sacramento, CA 95814
Howard.Brown@noaa.gov

Re: Emergency Regulations for Mill Creek and Deer Creek

Ladies and Gentlemen:

Stanford Vina Ranch Irrigation Company submits the following initial comments to the "Preliminary Draft Drought Emergency Regulation for Mill Creek and Deer Creek Watersheds for Public Comment". The SWRCB noticed the Draft Emergency Regulations near the close of business on Wednesday, September 1, 2021 and before Labor Day weekend, leaving affected water users 3.5 business days to submit comments. The following day, September 2, 2021, we sent letters to the State Water Board, California Department of Fish & Wildlife, and National Marine Fisheries Service requesting immediate response to pending Public Record Act and Freedom of Information Act requests dated July 8 and July 9, 2021. We have not received any public records in response to the July requests. This fact, coupled with the short turnaround time, makes it impossible for affected water users to offer comprehensive comments by the September 8, 2021 noon deadline. Stanford Vina expects full compliance with its July records requests that

are necessary for it to submit timely and complete comments on the Draft Emergency Regulations. Stanford Vina will submit further comments in advance of the State Water Board's consideration, currently scheduled for September 22, 2021.

A. Stanford Vina's Has Some of the Most Senior Water Rights in the State of California and is Using Water for Beneficial Use That Has Not Been Curtailed Due to Unavailability of Water.

On June 15, 2021 the State Water Board curtailed all post-1914 water rights. On July 23, 2021 the State Water Board issued a "Notice of Unavailability of Draft Emergency Curtailment and Reporting Regulation for the Sacramento-San Joaquin Delta (Delta) Watershed for Public Review and Comment and Notice of Water Unavailability". The Notice states that "the best information available to the Board indicates that water is not available for:

- All post-1914 appropriative water rights in the Delta watershed (inclusive of the Sacramento River and San Joaquin River watersheds);
- All pre-1914 appropriative water right claims in the San Joaquin River watershed;
- All pre-1914 appropriative water right claims in the Sacramento River watershed with a priority date of 1883 or later; and
- Some pre-1914 appropriative water right claims in specific Sacramento River tributary sub-watersheds with a priority date earlier than 1883. These claims face water unavailability either due to limited local supplies or the need to bypass natural flows so that more senior rights downstream can be met."

Significantly, Stanford Vina's senior rights were not curtailed. Unlike most other water right holders in the Delta watershed, water is available for diversion under Stanford Vina's super-senior water rights. Under the Draft Emergency Regulations, Mill and Deer Creek water users would only be "curtailed" because the State has envisioned a preferred priority for their water – instream fishery use. To amicably address the state's preference for this instream use of water, Mill and Deer Creek water users in May 2021 offered to transfer water instream for compensation (\$2.1 million). This offer, however, was refused and the State now seeks to condemn property rights without any compensation under the guise of a "curtailment".

B. The “Unprecedented” Need for Emergency Regulations in 2014 and 2015 Are Now Becoming Routine; Since 2014 and 2015, State and Federal Agencies Have Refused to Assist Stanford Vina in Solving the Root Fishery Problem on Mill and Deer Creeks – the Urgent Need for Multi-Benefit Channel Restoration.

During the last statewide drought in 2014 and 2015, at the request of CDFW and NMFS, the State Water Board adopted nearly identical emergency regulations curtailing nearly all off-stream diversions on Mill and Deer Creeks. Like 2021, the curtailments in 2014 and 2015 were not because of lack of water availability; rather, it was to implement the State and Federal Government’s policy to prefer instream fishery flows, rather than off-stream diversions for agriculture. The State Water Board determined that the 2014 and 2015 regulations were necessary “given the unprecedented nature of the current drought impacts to these fisheries.” (2014 and 2015 Emergency Regulations, § 877, subd. (c), emphasis added.) Following these “unprecedented” actions, Stanford Vina repeatedly sought the assistance of state and federal agencies to address the root fishery problem on Mill and Deer Creeks – the urgent need for multi-benefit channel restoration.

For decades your agencies have dabbled, but not completed instream fishery enhancement projects on Mill and Deer Creek.¹ Having not financed or completed these measures, your agencies resorted to “emergency regulations” in 2014 and 2015 as substitutes for the unfinished public projects. Water Board Member (now-Vice Chair) Dorene D’Adamo voted for the State Water Board’s emergency regulations which curtailed diversions on Deer Creek, Mill Creek, and Antelope Creek (State Water Board Resolution No. 2014-0023). However, Board Member D’Adamo requested that staff of CDFW, NMFS, and the State Water Board work with water users to improve fishery conditions on a long-term basis through voluntary agreements. During the meeting on March 17, 2015, Board Member D’Adamo requested a “collaborative...long-term solution” involving the fishery agencies, the Deer Creek water users, the State Water Board and its staff. These discussions never occurred. For this reason, in 2015, Board Member D’Adamo cast a lone dissenting “No” vote on the 2015 version of the emergency regulations (State Water Board Resolution No. 2015-0014).

Since the 2014 and 2015 emergency regulations, Stanford Vina has repeatedly sought a voluntary agreement-type of solution to try to solve the underlying problem. On February 26, 2018 Stanford Vina sent a letter requesting CDFW assistance in the development and implementation of the multi-benefit channel restoration project. (Copy attached as Exhibit A.) In response, CDFW declined to consider such work an “emergency” because “A seasonal decline in stream flow as well as variable annual precipitation are not generally considered to be sudden or unexpected occurrences, but rather regular hydrologic fluctuations that should be planned for

¹ For example, the State began, but didn’t complete, a flow project that paid for groundwater pumping to enhance Deer Creek and Mill Creek fish migration flows during the same periods of the regulations.

well in advance.” (Exhibit A.1) Stanford Vina agrees and has implored state and federal agencies to take this sound advice and commit to solving the underlying problem, rather than continuing to resort to “emergency regulations”.

A similar request to implement a multi-benefit channel restoration project was sent by Stanford Vina on February 21, 2020, enclosed as Exhibit B. Stanford Vina received no response.

A similar request was sent by Stanford Vina on March 11, 2021, enclosed as Exhibit C. To date, Stanford Vina has not received a response.

On April 2, 2021, Stanford Vina sent another request for assistance of your agencies in undertaking emergency channel restoration efforts to improve fish passage conditions in 2021. (Copy Enclosed as Exhibit D.) In response, on April 7, 2021, CDFW personnel stated it is “not feasible” to undertake such an emergency project and listed numerous approvals and prerequisites to implementation of such a restoration project, including the following:

- Designs
- CEQA
- NEPA
- Lake and Streambed Alteration Agreement
- Incidental Take Permit
- ACOE 404
- SWRCB 401
- Central Valley Flood Protection Board permit
- Section 7 consultation with NOAA fisheries

A copy of this email is attached as Exhibit E.

On April 19, 2021 at the request of Stanford Vina, representatives of your agencies as well as water users from Mill Creek met onsite to discuss the need for the multi-benefit channel modification project to enhance fish passage. In our view, there was consensus that this project is essential to balance the water needs of the fishery and other beneficial uses of water by Stanford Vina and other water users on Deer and Mill Creeks.

On April 21, 2021 Governor Newsom issued a drought proclamation that included directives on state agencies, including CDFW and State Water Board to “Accelerate funding of water supply enhancement, water conservation, or species conservation projects.” (Emergency Proclamation, ¶ 4(a).) CDFW is specifically directed to, “Evaluate and take actions to protect terrestrial and aquatic species and, wherever possible, work with water users and other parties on voluntary measures to protect species.” (*Id.* ¶ 9(a).)

Pursuant to these directives, Stanford Vina on May 5, 2021 requested funding and assistance pursuant to Governor Newsom's Drought Proclamation for the design and implementation of the multi-benefit channel restoration project on Deer Creek, including assistance in pursuing and securing all regulatory and other approvals necessary for timely implementation of the restoration project. (Copy attached as Exhibit F.) Stanford Vina has not yet received a meaningful response to this request.

On May 5, 2021, representatives of the State Water Board, CDFW and NMFS invited the two primary water right holders on Deer Creek, Stanford Vina and Deer Creek Irrigation District (DCID) to a discussion regarding 2021 water conditions and fish passage in Deer Creek. At this meeting, Stanford Vina and DCID were given an ultimatum: either (1) submit, in writing, and within one-week terms that Stanford Vina and DCID propose to implement to ensure fish passage in 2021 or (2) the State Water Board will adopt and impose emergency regulations curtailing (yet again) Stanford Vina's and DCID's super-senior, adjudicated water rights. In response to this ultimatum, Stanford Vina provided the term sheet attached as Exhibit G.²

In response to Stanford Vina's proposal, the State Water Board, CDFW, and NMFS pointed to the need for flows as set forth in CDFW's draft instream flow criteria for Mill Creek (CDFW 2018) and draft instream flow evaluation for Deer Creek (CDFW 2017), and that the State Water Board, CDFW and NMFS do not have authority to authorize the channel restoration measures sought by water users. Reference to CDFW's 2017 and 2018 draft instream flow evaluations is especially galling. Due to Sacramento River operations and "green tape" making it impossible to secure the necessary regulatory approvals to perform work, lower Deer Creek has filled up with sediment making adherence to the State's passage criteria an impossibility, even in a situation where no off-stream diversions occur. Even if all water right holders on Deer Creek ceased diverting and left 100% of water instream³, passage criteria would still not be satisfied. The reason is because lower Mill and Deer Creeks are filled with sediment requiring more and more flow to meet passage criteria, yet your agencies refuse to allow restoration work to occur.

This problem demands a solution, not an "emergency regulation". What may have been "unprecedented" in 2014 and 2015 is forecastable now. Adjudication of these issues through reactionary "emergency regulations" is patently unlawful and unfair to Deer Creek water users and to the fishery. Stanford Vina, thus, implores your agencies to commit to assisting in solving the root problem and committing to multi-benefit channel restoration of lower Deer Creek before the spring run period in 2022. We ask that you do not adopt emergency regulations and instead commit to solving the problem.

² On July 12, 2021, Stanford Vina again wrote the SWRCB to offer assistance in carrying out channel restoration measures and to request expedited regulatory approvals to begin implementing such measures. (Copy enclosed as Exhibit H.)

³ This is presented hypothetically. Such a draconian action would destroy thousands of acres of productive agricultural land, businesses and livelihoods in Tehama County.

C. The Draft Emergency Regulations are Unnecessary; The 2021 Spring Fish Counts Were Exceptionally Good and Such Success Was Accomplished without Emergency Regulations.

Water users on Mill and Deer have, in good faith, engaged in extensive and ongoing communications in 2021 with staff at the State Water Board, CDFW and NMFS. As noted, water users submitted proposals for implementing the multi-benefit channel restoration projects and fishery protection proposals that included compensation for water transferred to instream use. Both proposals were rejected. However, water users on Mill and Deer did coordinate with CDFW and NMFS to voluntarily implement pulse flows in the Spring of 2021 for benefit to the fishery, while minimizing impacts to agricultural beneficial uses.

Given this extensive and ongoing engagement, it is inexplicable that water users were not provided copies of NMFS's July 30, 2021 and CDFW's August 9, 2021 letters requesting 2021 emergency regulations. Made worse is that the letters leave out the incredible success of the spring run in 2021, despite very critical drought conditions. NMFS' letter bases the justification for fall 2021 emergency regulations on prior year run counts, especially 2020: "The 2020 run size for both streams was the lowest on record with just 73 adults in Mill Creek and 96 adults in Deer Creek and the extinction risk for both populations has moved from moderate to high in the last five years." Similarly, CDFW incorrectly states that emergency regulations are needed "to provide emergency minimum flow protections for adult and juvenile salmonids during the current drought emergency."

The reality is that Stanford Vina is being punished for its own success. Unlike many other areas of California, Deer Creek has always had a viable, native spring and fall run salmon populations. Over 500 returning spring run have been counted in the spring of 2021. This incredible success was achieved without emergency regulations and during the current drought emergency with low flows. Fish and water users have been coexisting and thriving on Deer Creek for over 150 continuous years. CDFW and NMFS are simply not accurate in their depiction of the "need" for emergency regulations and have failed to provide the State Water Board with the full picture, including a successful spring run in 2021.

Rather than adopting emergency regulations, water users sincerely hope the State Water Board uses this as an opportunity to create a sustainable and resilient solution that works for both the fishery and water users. However, if the State Water Board is inclined to proceed with adoption of emergency regulations, we caution you to consider that this is not 2014 or 2015 or the administrative record that the Third District Court of Appeal found supported your prior actions. The record preceding 2021 emergency regulations is far different. There is a clearly documented overreliance on "emergency" that purport to be broad-reaching and legislative. In reality, these regulations are adjudicative by singling out Stanford Vina and Los Molinos Mutual Water Company and determining facts peculiar to the individual case when applying general

principles of California water law to prohibit available water diversions for beneficial use. The targeted water right holders are exceptionally affected, and the regulations apply general standards to specific water right holders and their real property (adjudicated water rights). That the measures are labeled “quasi-legislative” or “regulations” is immaterial; their substance and function renders them adjudicative. (*20th Century Ins. Co. v. Garamendi* (1994) 8 Cal. 4th 216, 275 [Quasi-adjudicative classification contemplates “function performed”].)

We ask that the State Water Board refuse CDFW’s and NMFS’ requests for emergency regulations. Water users on Mill and Deer Creeks have stepped to the plate to help solve the problem; what we need is partnership from state and federal agencies.

Very truly yours,

MINASIAN, MEITH, SOARES,
SEXTON & COOPER, LLP

By: 
JACKSON A. MINASIAN

JAM/tw
Attachments

EXHIBIT A

**MINASIAN, MEITH,
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MICHAEL V. SEXTON,
of counsel

February 26, 2018

State Water Resources Control Board:

Felicia Marcus, Chair
Steven Moore, Vice-Chair
Doreen D'Adamo, Member
E. Joaquin Esquivel, Member
Tam M. Doduc, Member
1001 I Street
Sacramento, CA 95814

National Marine Fisheries Service
650 Capitol Mall
Suite 5-100
Sacramento, CA 95814

California Department of Fish and Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090

Re: Channel Clearing – Deer Creek, Tehama County

Ladies and Gentlemen,

As of today, February 17, 2018, dry conditions are currently prevailing across California and it appears we are entering into another drought, if not already in one. Droughts are a regular occurrence in California and history commands that they be expected and planned for with proactive competence rather than responded to with hysteria and the bumbling despotism inherent of “emergency” atmospheres. Thus, it is an appropriate time to develop a *constitutional* plan for Deer Creek in Tehama County for the spring of 2018 if dry conditions continue.

1. Low-Flow Channel.

Your agencies have expressed concerns regarding the conditions for salmon and steelhead conditions in Deer Creek during dry periods. We wish to inform you that we are eager to work with you to clear a “low-flow” channel for fish passage as occurred in the droughts of previous years before the SWRCB and California Department of Fish and Wildlife became enamored with inverse condemnation under the label of “waste and unreasonable use.” Such a clearing and removal of blockages is a physical solution to create flow and temperature conditions that enhance salmon and steelhead conditions in dry years. We will provide an excavator or angle-bladed Caterpillar tractor at our cost and will get the job done without drama or delay. We will also favorably reposition stream rocks at riffles where machinery modification is not necessary to greatly improve fish passage. The attached documents detail which riffles will be modified and confirms that the project can create favorable fish conditions with instream flows of 5-10 CFS instead of the more than 50 CFS taken from our landowners in past years.

We are happy to hear your views of which riffles are most critical to clearing of the low-flow channel. The aerial photographs attached show a fully flowing stream in July of 2011 with markers for potential areas where a backhoed low-flow channel of approximately 1-2 feet deep and 3 feet wide could be cleared and excavated. Also attached are photographs taken in 2014 showing locations taken from ground-level where FishBio determined excavation would be valuable. We estimate ten (10) potential areas where excavation would be performed and, using an estimate of 8-10 feet per area, approximately 500 cubic yards of material may be excavated to create the higher flows. The material would be deposited immediately adjacent to the channel construction and spread in a manner that attempted to preserve the narrowed channel through some high flow conditions. We are also happy to hear your reasonable preferences for the deposition of excavated material.

This physical solution is simple to implement, and we urge your cooperation to develop such a clearing and excavation process for the channel for this spring. Obviously, there will have been channel changes since the aerials and study attached, but these changes will be minor and the plan suggested will be clear.

2. Cooperation From Your Agencies.

We ask that you match our good faith offer with reasonable and feasible steps of your own. First, we ask that you exercise your lawful authority to suspend the California Environmental Quality Act’s (“CEQA”) application to the low-flow clearing and channel reinstatement. Public Resources Code Section 21080(b) of CEQA states: “This division does not apply to any of the following activities...Specific actions necessary to prevent or mitigate an emergency.” Second, we ask that you exercise your lawful authority to declare your determination with ours under Fish and Game Code section 1610 that an emergency will exist. That provision will allow work in the streambed to occur without a permit in emergency circumstances. (Fish and Game Code § 1610.) Section 1610 states, “Except as provided in subdivision (b) this chapter does not apply to any of the following: (1) immediate emergency work necessary to protect life or property.”

These emergency exceptions can be invoked immediately to allow the low-flow channel to proceed. There is no requirement that the Governor declare an emergency. The CEQA and Fish and Game Code exceptions can be invoked, regardless of whether the Governor declares an emergency. Invocation of the emergency exceptions is appropriate here. The low-flow channel is necessary to protect Deer Creek fish and the low-flow channel will not get done in a timely manner unless you invoke the emergency exceptions of CEQA and the Fish and Game Code.

3. Failure to Allow the Physical Solution Low-Flow Channel Will be an Admission.

We are not asking for money. We are only asking for you to exercise your lawful authority to allow us to get this physical solution done. If your agencies fail to facilitate the construction of the low-flow channel that would help fish with relatively little water, and instead issue regulations under the guise of “emergency” that confiscates the water of Deer Creek landowners for instream flows, it will be an admission that your true objective is to create a public instream flow project without compensating Deer Creek landowners for the taking of their water and for converting their farmland into dryland cropland.

Your apparent goal is that you do not want any fish to “drag their bellies over gravel bars” or be delayed in their upstream migration on Deer Creek – ordinary features of the natural selection process in a dry year. If this goal is accomplished by suspending water rights -- real property rights -- and prohibiting diversion that occurred uninterrupted for over 100 years, including a number of drought years, then you will be executing a public instream flow project and an evidentiary hearing and compensation are required.

Numerous courts have required physical solutions when considering competing uses of water. Some of your agencies refuse to consider any alternatives to accomplishing their fish passage project other than “more flows” and “more water”. By refusing to consider physical solution of a low-flow channel to facilitate fish passage, your agencies will create the very “emergency conditions” invoked to take the water of Deer Creek landowners. This is indefensible.

By failing to allow the physical solution of a low-flow channel, your agencies- most prominently the State Water Resources Control Board (“SWRCB”)- will be demonstrating to a Court that your true objective is to utilize sequential emergency declarations to compel a few rural landowners to pay for a public instream flow project without evidentiary hearing, compensation, or any form of due process. If the water for a few rural landowners is to be taken for what is deemed to be a public purpose of greater importance than food production and rural livelihoods, and your agencies and the SWRCB do not wish to consider the low-flow channel a physical solution, then an evidentiary hearing must be held and the basis for that determination must be made, including the landowners’ right to cross-examine any witnesses and permit evidence in opposition to the rejection of this physical solution which conserves water and the fish, and compensation must be awarded for the water and real property taken and for the farmland converted into dry land.

4. A Low-Flow Channel is Required to Help Fish.

A low-flow channel with water flows tailored to the channel capacity is the only appropriate mechanism for improving Deer Creek fishery conditions if dry conditions persist. Confiscating the water rights of Deer Creek landowners and throwing their water down the creek will not benefit salmon and steelhead. Temperature and riffle fish passage conditions perfect for predation and stress of the fish may be lethal for salmon and steelhead under even the highest instream flow levels of dry years. Without a low flow channel through extensive riffle areas, instream flows spread across the streambed resulting in hot and shallow water conditions. Maximum tolerable temperatures for adult spring run salmon is approximately 65 degrees. (CDFW 2001 Spring Run Salmon Report for Deer and Mill Creek, Collen Harvey Arrison, p. 4.) Attached are actual 2014 temperature readings for the water at the USGS gauge located above both the Deer Creek Irrigation District and Stanford Vina Ranch Irrigation Company dams. These temperature readings are taken some five (5) miles above the Sacramento River. Obviously, there is substantial additional warming that occurs in the five (5) miles between the USGS gauge and the confluence of Deer Creek and the Sacramento River. These temperature readings confirm that the water temperature rises by the May and June adult upstream migration period to levels which stress salmon and steelhead. Without a low-flow channel, water sent down Deer Creek simply spreads across the shallow channel, warms unnecessarily, and bakes the salmon and steelhead. Further, the shallow water conditions exacerbate predation problems with salmon and steelhead having little chance of avoiding predators -- a problem that low-flow channels mitigate through increased depth and variability in creekbed characteristics.

If you question these statements we can only urge you to hold the evidentiary hearing that is required under the constitution and which there is ample time and opportunity to conduct so that that truth and the facts surrounding Deer Creek hydrology, fishery conditions, and water rights can be presented through the admission of evidence and cross-examination of witnesses. Doing so will allow your agencies to make informed decisions in achieving your purported goals of helping fish while not despotically devastating the people of Deer Creek.

5. Condemnation

Although clearing the low-flow channel approach was utilized in previous drought years and is the only means of actually helping salmon and steelhead, members of your respective agencies have indicated views that no proactive action of this nature is necessary, and instead the water and water rights of Deer Creek landowners (and those of other Tehama County streams) can simply be confiscated if dry conditions persist. We remind you that Constitutional protections require an evidentiary hearing and compensation if this approach is taken, and this advance notice gives adequate time for you to schedule hearings and make deposit of funds under eminent domain statutes. And although we disapprove of this approach and reserve all rights of protest, we are willing to work cooperatively with your agencies to facilitate the issuance of condemnation notices to water right holders and to participate in an efficient and effective evidentiary hearing proceeding and system for deposit of the severance damages and value of the water rights stripped from the farmland and its owners for the periods you specify that the State requests its use for a more valuable public program.

It would be inexcusable to confiscate the water and water rights of landowners this spring without an evidentiary hearing and deposit with the Superior Court of the estimated compensation. You have several months to do so before the spring and there are only about sixteen (16) water right holders on Deer Creek. If you intend to take their water in the spring of 2018 and/or future years, then certainly you are capable of holding an evidentiary hearing before doing so and finding the monies to compensate them. It would be inappropriate to do nothing until the spring and then, with the “emergency” atmosphere and irrational hysteria typical to California drought conditions, to opportunistically confiscate the water and water rights of these sixteen (16) water right holders without compensation or evidentiary hearing.

Constitutional protections require that the water rights of Deer Creek landowners only be taken after an evidentiary hearing and compensation. As you know, the water rights of Deer Creek landowners are real property rights protected by the United States and California Constitutions. (*U.S. v. Gerlach Live Stock Co.* (1950) 339 U.S. 725, 727-30, 752-56; *Dugan v. Rank* (1963) 372 U.S. 609, 623-626.) “As such, they cannot be infringed by others or taken by government action without due process and just compensation.” (*United States v. SWRCB* (1986) 182 Cal.App.3d 82, 101.) The real property nature of California water rights endures regardless of fishery concerns or requirements. (*Casitas Mun. Water Dist. v. United States* (2008) 543 F.3d 1276, 1279-82, 1296; *Tulare Lake Basin Water Storage District v. United States* (2001) 49 Fed.Cl.313, 318-21.) Assertions of “emergency” do not excuse constitutional protections for water rights as real property rights. (*Los Osos Valley Associates v. City of San Luis Obispo* (1994) 30 Cal.App.4th 1670; *Odello Brothers v. County of Monterey* (1998) 63 Cal.App.4th 778.)

It does not require a law degree to understand that labels of “emergency”, “regulation”, “quasi-legislative”, and “unreasonable” cannot excuse the constitutional protections of an evidentiary hearing and compensation when real property rights are confiscated. If your agencies wish to decline our offer to clear a low-flow channel and instead intend to confiscate the water and water right of Deer Creek landowners, then constitutional protections must be adhered to. You have plenty of time to comply with those constitutional protections.

a. Condemnation Funds Are Available.

Condemnation funds are available if you intend to confiscate the water of Deer Creek landowner this spring. The most obvious source of condemnation monies, in addition to the budgets of your agencies, is the \$7.5 billion made available by Proposition 1 of 2014 -- most of which is available for appropriation. Please see the attached notes from a November 2016 CDFW meeting in which the use of Proposition 1 funds to purchase water from water right holders was proposed. (CDFW Meeting 10/10/16.) Little money will be required for condemnation. While the water confiscated is of tremendous importance to Deer Creek water right holders -- most of whom rely on it as their sole source of irrigation water for their crops and cows -- it is not a tremendous amount in volume or value in the context of California hydrology or your budgets and available bond monies. It would be relatively inexpensive for your agencies to compensate Deer Creek water right holders for property taken.

Another option is to purchase well capacity from the Deer Creek landowners that do have groundwater wells and to pay those landowners to utilize their wells and to forego their surface water diversions from Deer Creek. This will result in less surface water diversions and more Deer Creek water available for your use. Alternatively, you can pay private well owners to pump their well water into Deer Creek. This will result in more water available in Deer Creek for use by your agencies as you see fit. Such well pumping agreements have been developed in the past and can be organized again with some initiative by your agencies.

6. Deer Creek Water Rights Are Critical to Deer Creek Landowners.

The importance of Deer Creek water rights and water to the landowners cannot be overstated and we urge you to keep this in mind. The water is the primary source of irrigation water – and in many cases the only source of irrigation water - for the people of the Vina and Deer Creek areas. These individuals rely on the water to sustain their cattle herds, orchards, alfalfa, and other crops. Confiscating their water in the critical spring irrigation periods has devastating consequences for them: crops are stressed, herds are culled, and lands must be fallowed. Whether used for a cow or a walnut tree, a grapevine or alfalfa field, the people of Deer Creek and Vina depend on their water rights and water for their livelihoods. These people represent the diverse spectrum of individuals who live in rural America; from third generation cattlemen and cattlegirls, to the monks of the Abbey of New Clairvaux who depend on the water to sustain their grapes - a critical source of income for their monastery.

There is no meaningful substitute source of irrigation water for these people. Groundwater is not reliable in the area. Many landowners do not have wells or the funds to drill them, or the landowners that do have wells are pumping from an unreliable aquifer.

It is imperative that your agencies take proactive action now to prevent a disaster for these people. It is unacceptable to confiscate the water and water rights of a relatively small number of rural citizens so that certain agency desires for an instream flow project on Deer Creek can be realized without compensation or an evidentiary hearing, and without actually helping fish.

7. Deer Creek Individuals Should Not Be Forced to Fund a Government Project.

For decades your agencies have sought greater flows for a fishery project on Deer Creek. Your agencies have expended a great deal of energy and public monies studying the issue, and you have even engaged in half efforts to purchase well pumping capacity from landowners, to drill your own wells, and to purchase surface water rights from landowners. However, your agencies have failed to follow through with a long-term project that satisfies your desires for greater in-stream flows. It is inappropriate with potential dry conditions this spring to compel a few rural Tehama County landowners to fund and effectuate the same project your agencies never followed through with.

The attached notes from a November 2016 CDFW meeting confirm that a deliberate choice has been made to not complete a long-term instream flow project through the purchase of

water rights or the development of new supplies through groundwater recharge or ditch efficiency upgrades, and instead at least CDFW has decided to rely on the SWRCB to take water from Deer Creek water right holders because in CDFW's view the SWRCB may do so without compensation. The November 2016 notes from the CDFW meeting state:

"In light of that summary, we discussed two alternative long-term strategies for helping DCID [Deer Creek Irrigation District] meet target instream flows:

- (1) Wait for SWRCB to implement regulatory instream flow requirements, and use DWR (& NRCS?) ag efficiency funds to help DCID comply;

-or-

- (2) Use fisheries restoration funds (primarily WCB Prop 1) in the near term to reduce diversions & dedicate water to instream flows"

Advantage of #1 is that it saves restoration dollars."

(Notes-DCID Strategy Meeting 10/10/16.)

One could not imagine better evidence that your agencies have made a deliberate choice to not develop a long-term instream flow project and instead have chosen to "wait" because the SWRCB will take the water from the people of Deer Creek without compensation. Your agencies have the funds to purchase water, you are willing to buy the water, and yet your agencies have done nothing.

Examples of other past efforts to propose and develop the instream flow project on Deer Creek include but are not limited to: CDFW 1996 Steelhead Restoration and Management Plan for California; "Deer Creek Pulse Flows", Matt Johnson and Patricia Bratcher, 2013; CDFW "Chinook Salmon Population of the Upper Sacramento River Basin 2012," Matt Johnson and Douglas Killam; CDFW "Restoring Central Valley Streams: A Plan for Action", 1993; CDFW "Juvenile Spring-Run Chinook Salmon Emergency in Deer And Mill Creeks, Tehama County," Colleen Harvey Arrison, 2001; "CalFed Ecosystem Restoration Program Plan 2000, Chinook Salmon on Deer Creek," and CDFW "Status of Actions to Restore Central Valley Spring-Run Chinook Salmon," 1996.

This is by no means an exhaustive list of studies and proposals by your agencies regarding greater in stream flow on Deer Creek. We only hope it provides insight into how long your agencies have sought greater instream flows on Deer Creek without following through with a meaningful project.

Conclusion

Your agencies must take proactive measures now. A low-flow channel is the physical solution to your fish passage desires and will serve all interests while minimizing hardships if dry conditions continue. But it is not appropriate to do nothing, and then, if dry conditions continue, to opportunistically assert “emergency” to violate the constitutional protections of the rural landowners who rely on their Deer Creek water rights to sustain their crops, herds, and their livelihoods.

Very truly yours,

MINASIAN, MEITH,
SOARES, SEXTON & COOPER, LLP

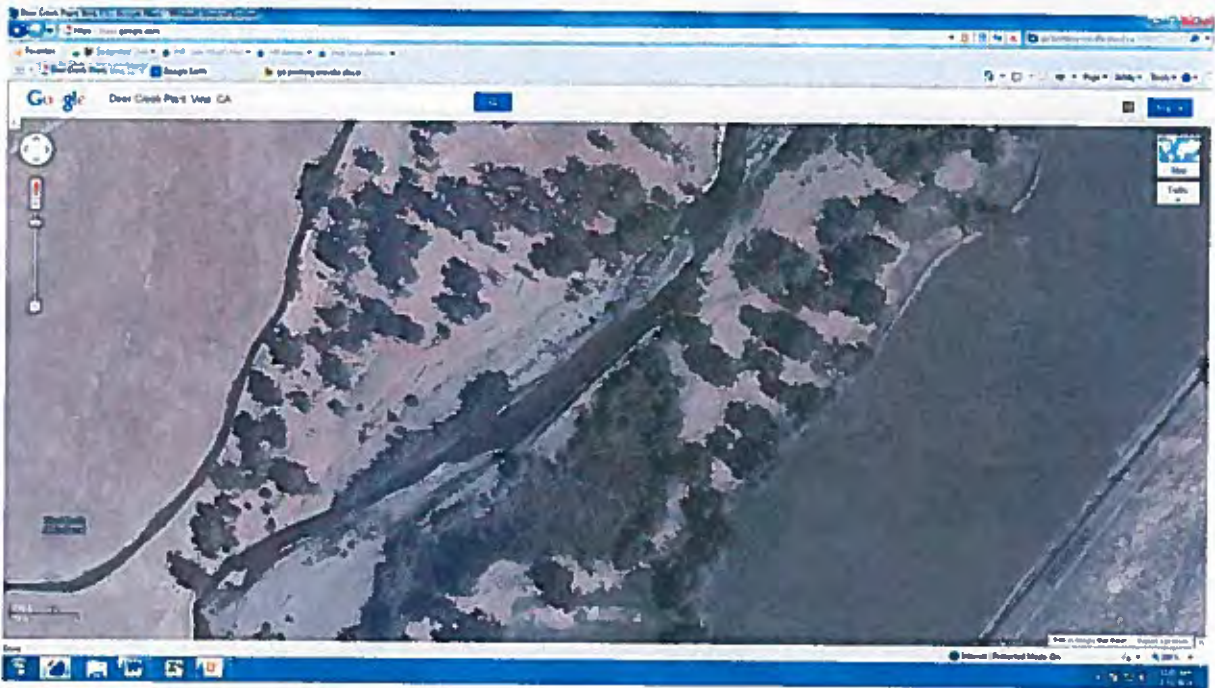
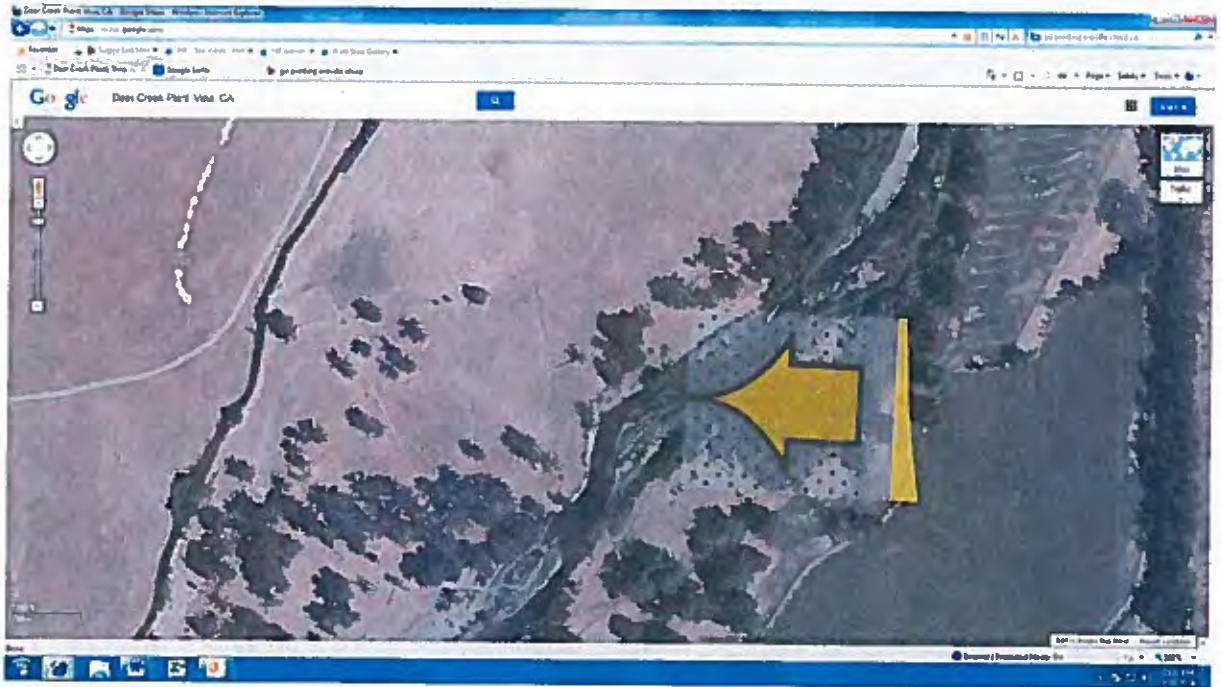
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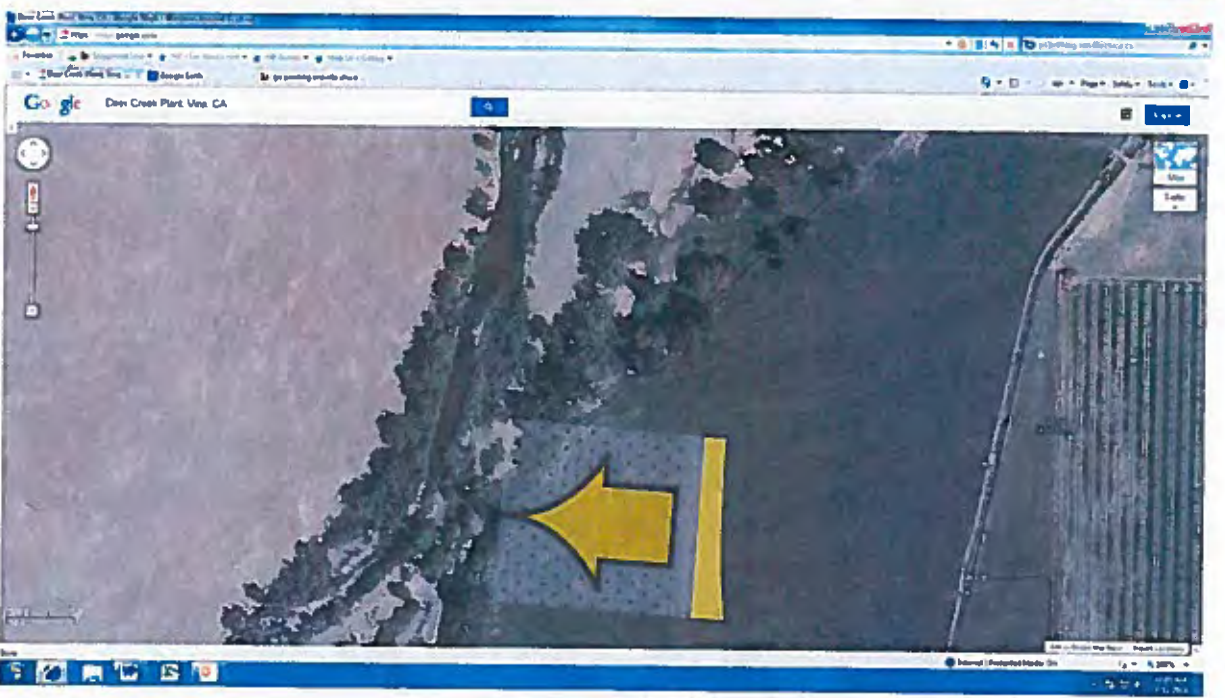
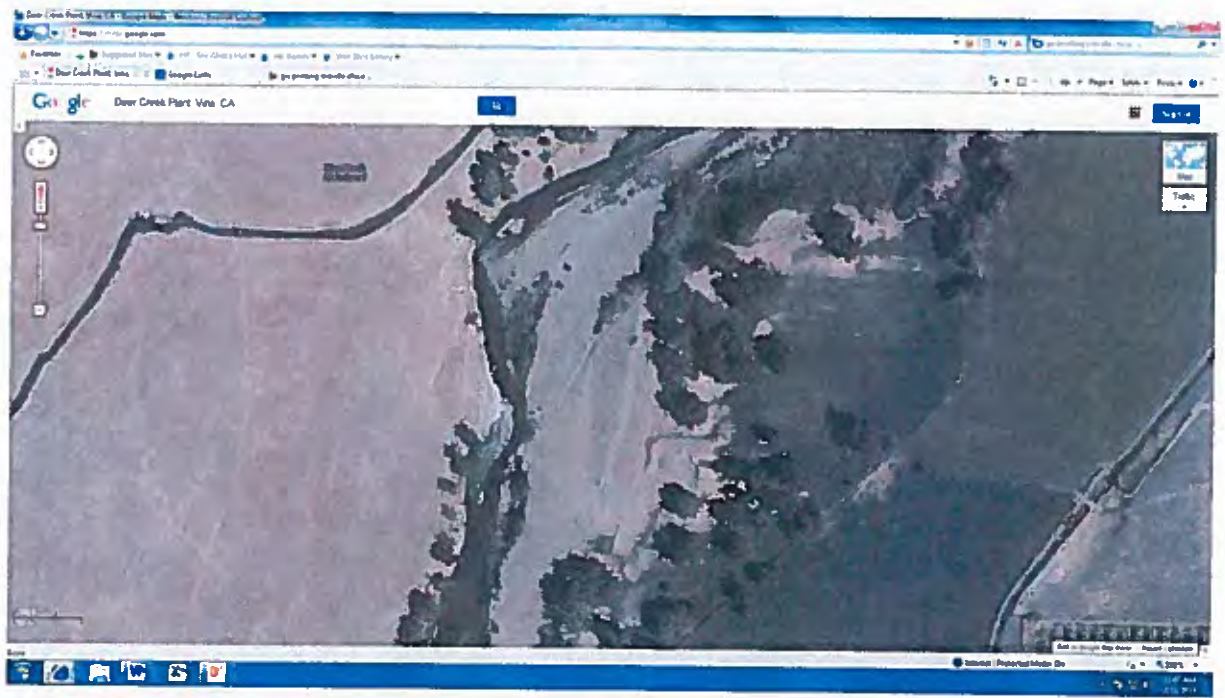
PAUL R. MINASIAN

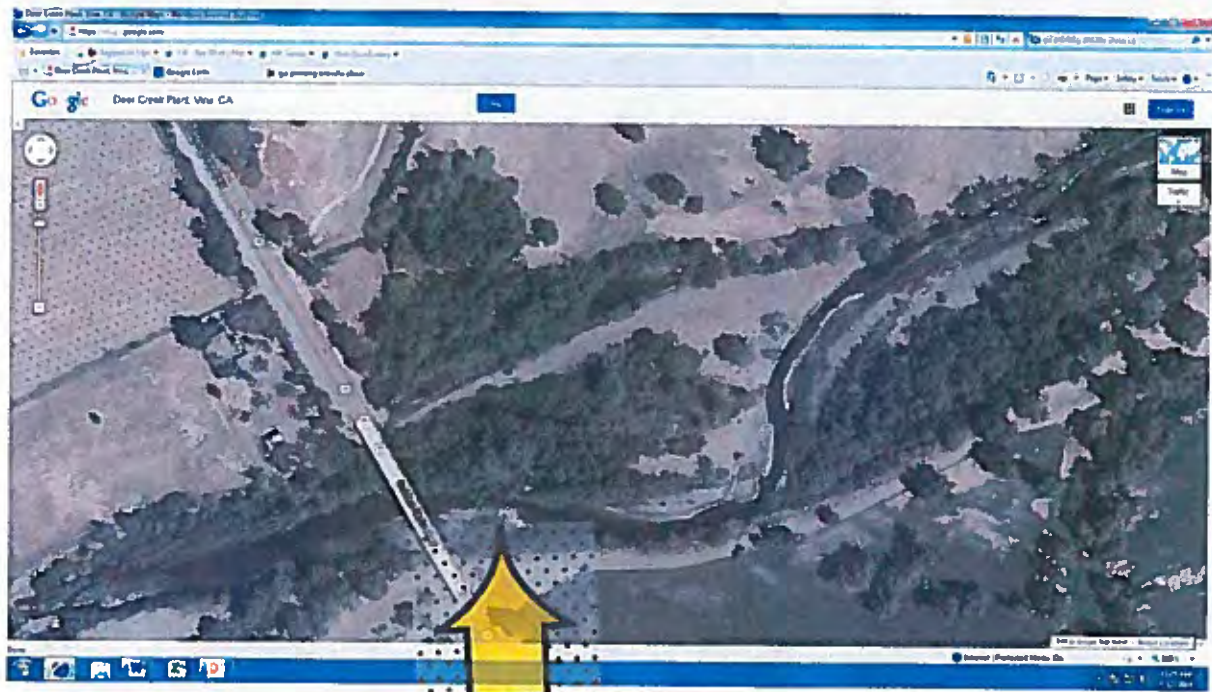
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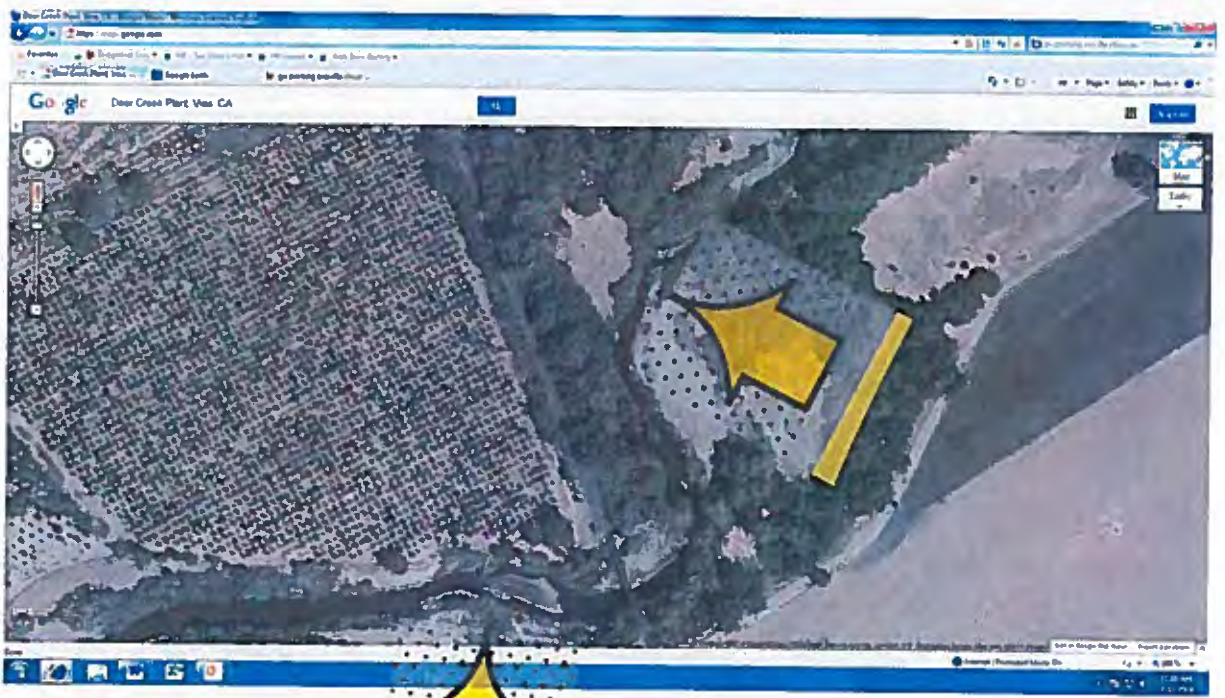
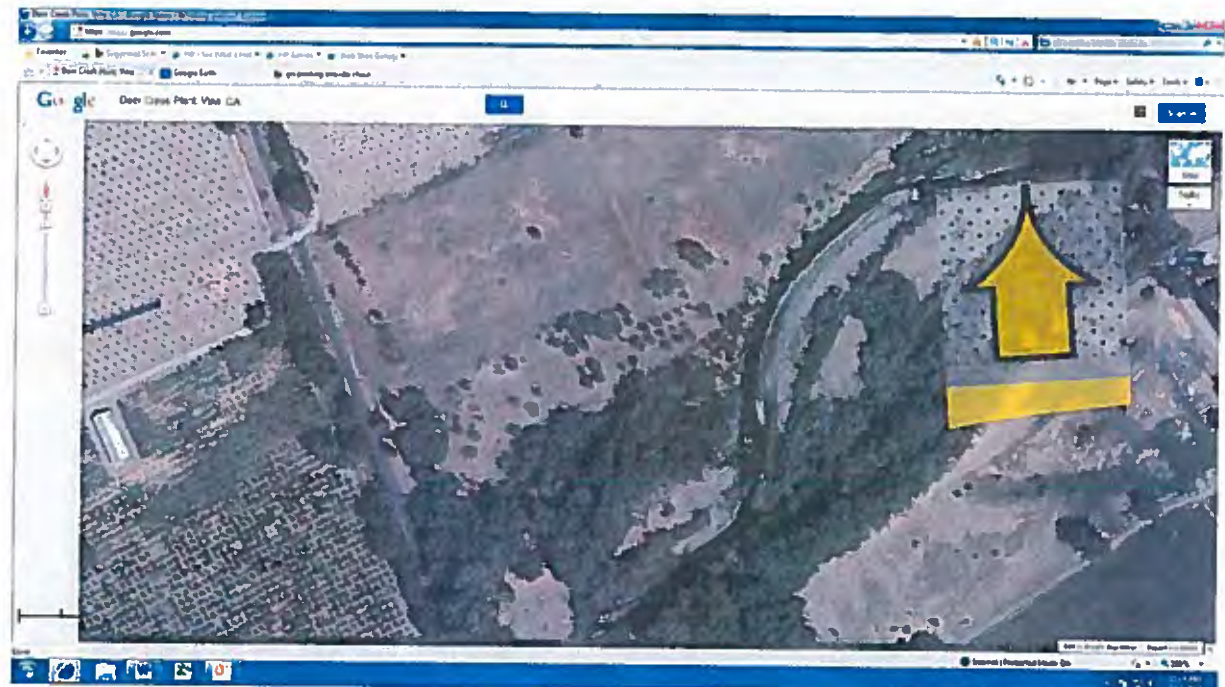
JACKSON A. MINASIAN

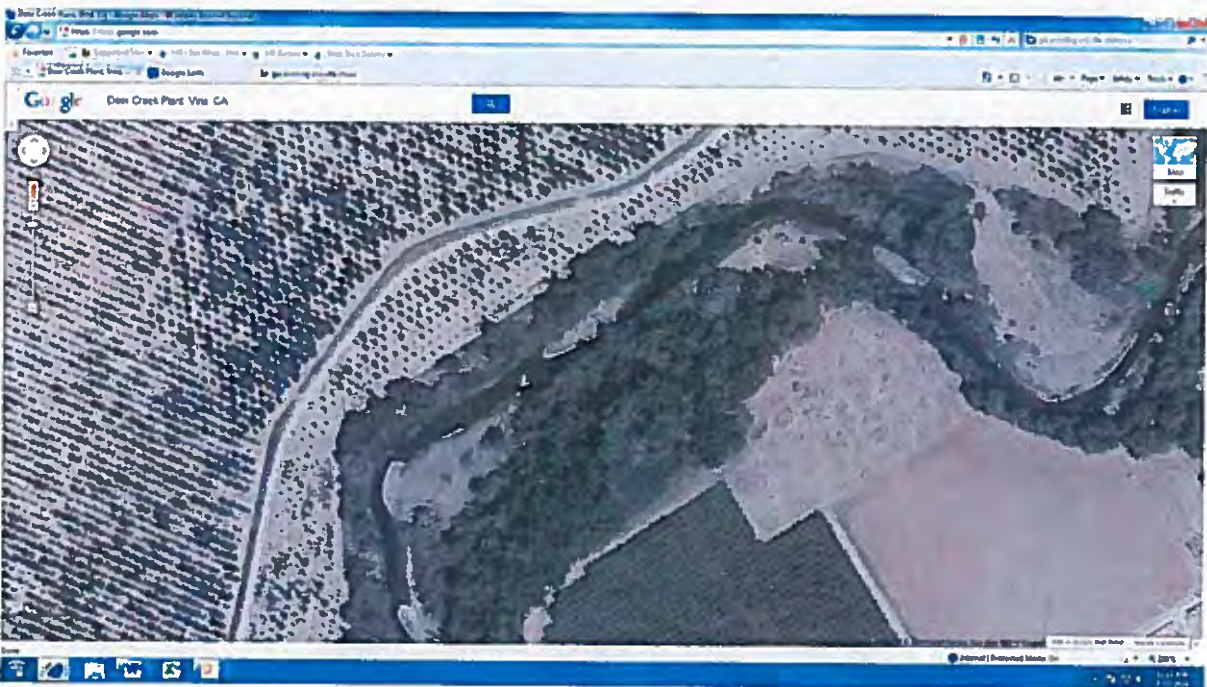


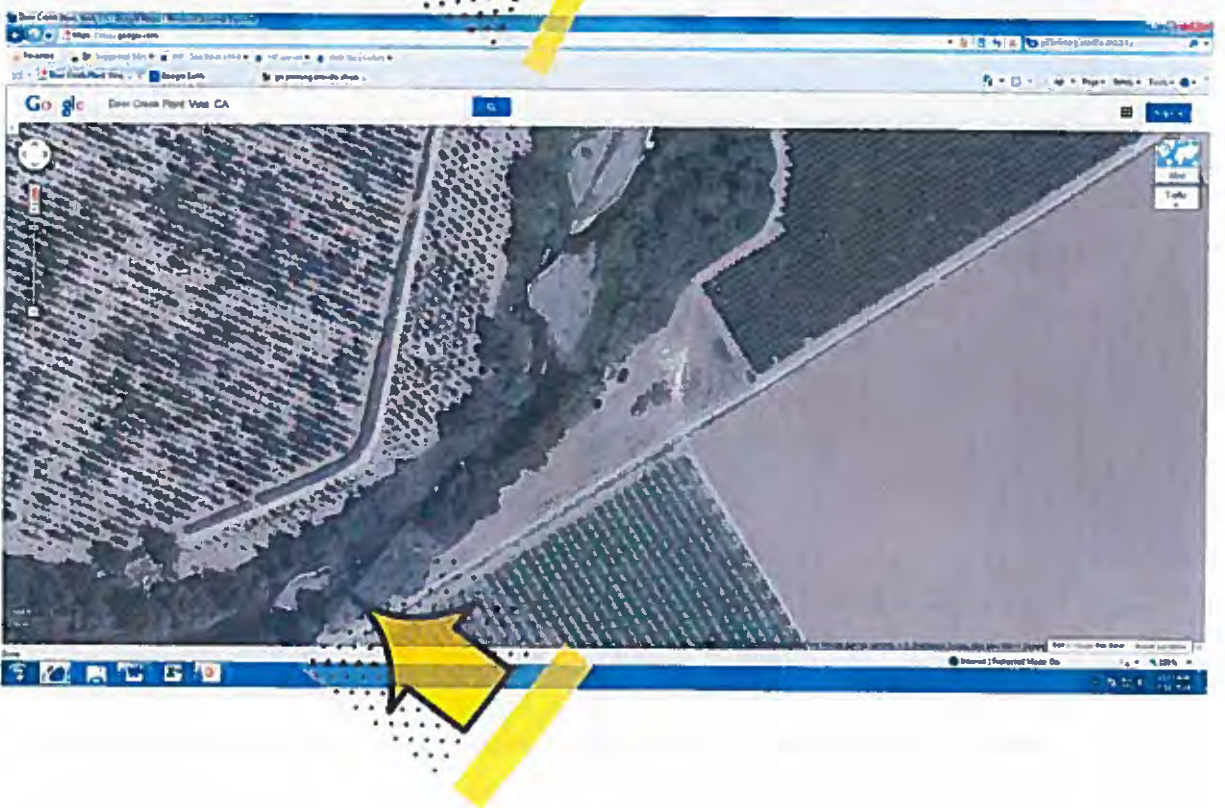
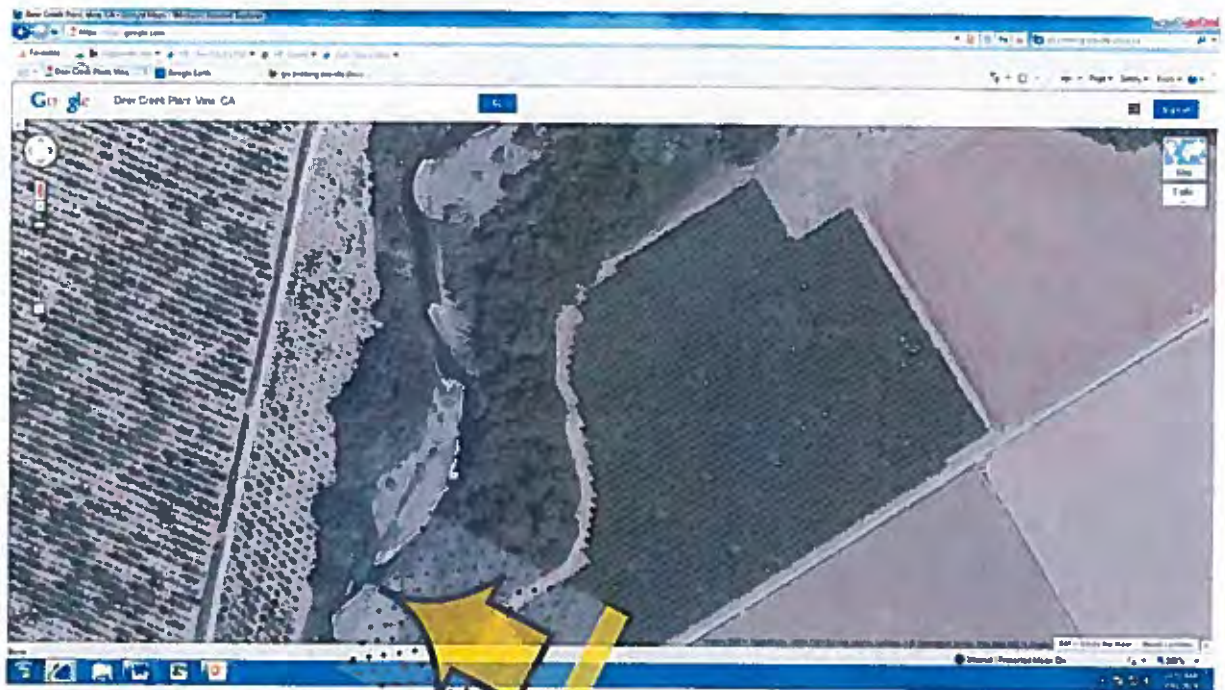


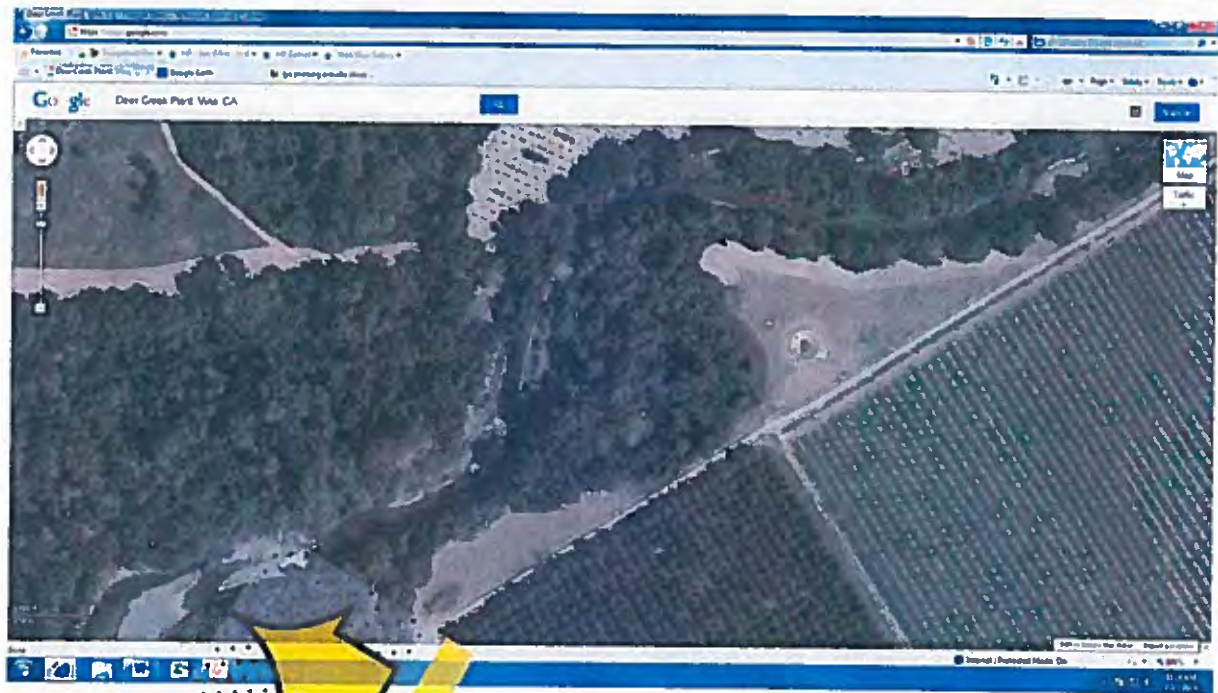
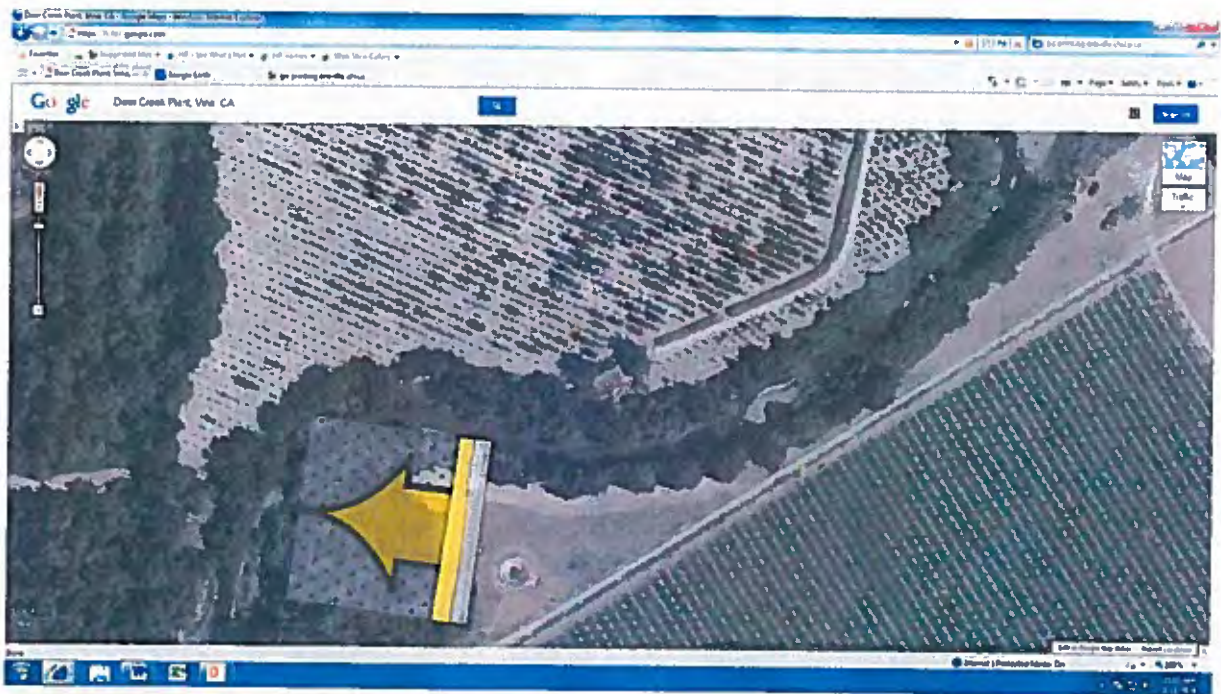


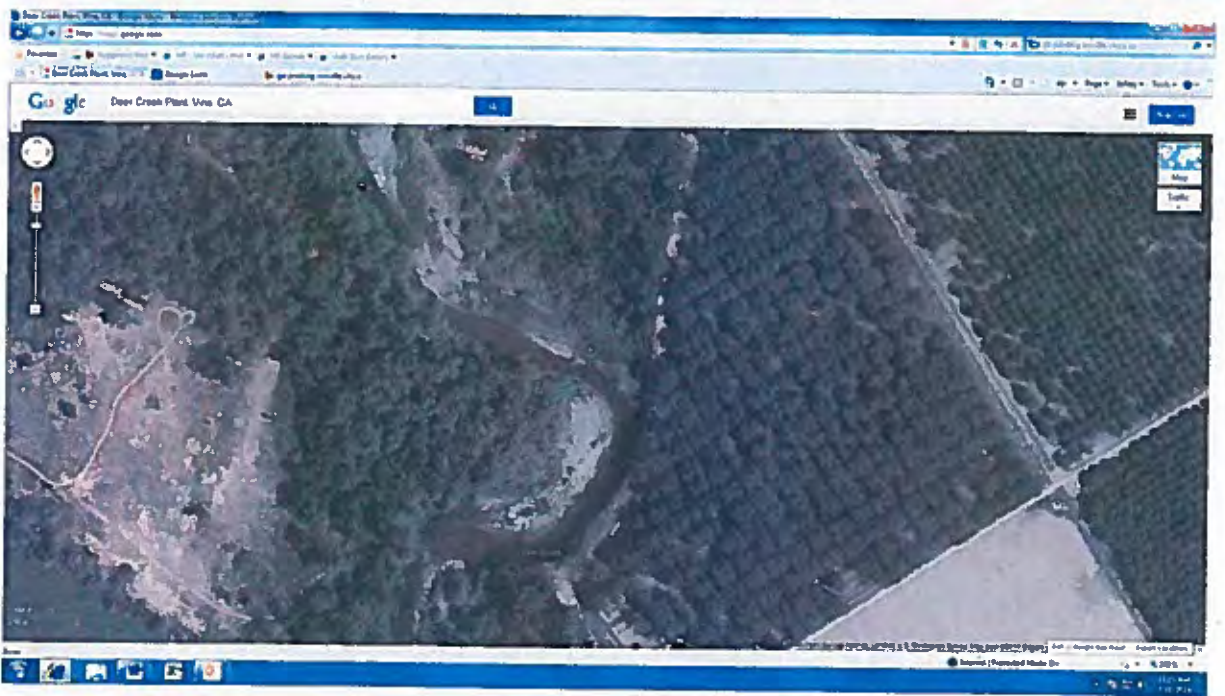
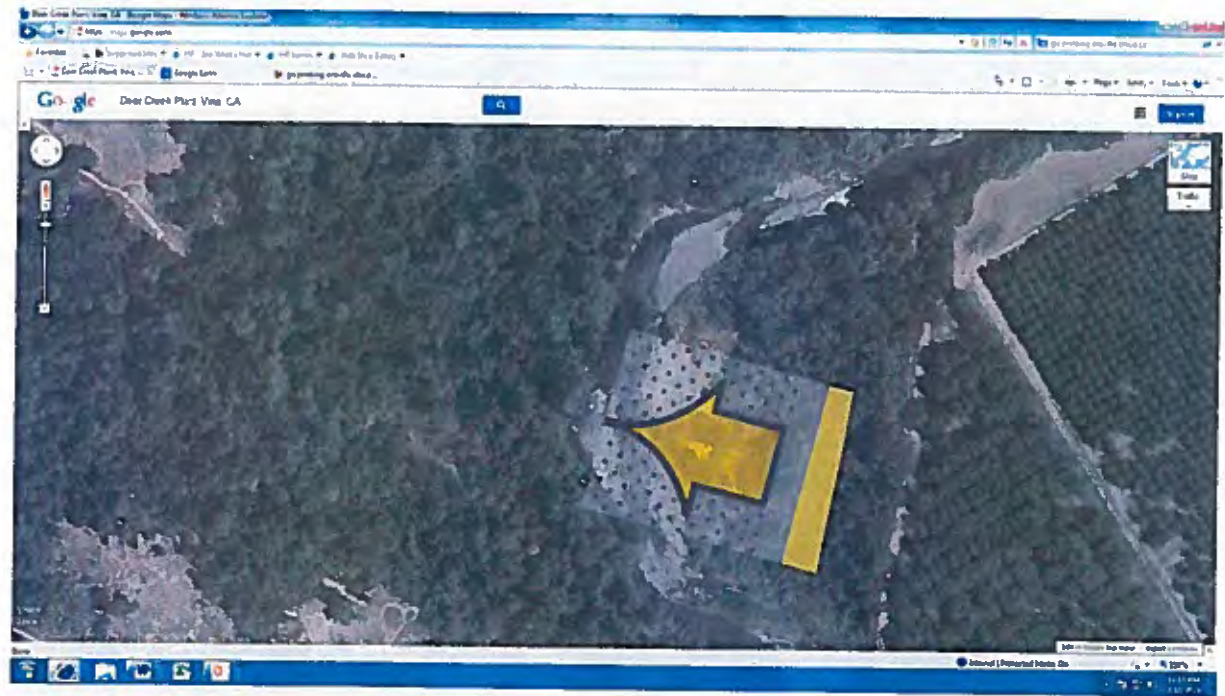


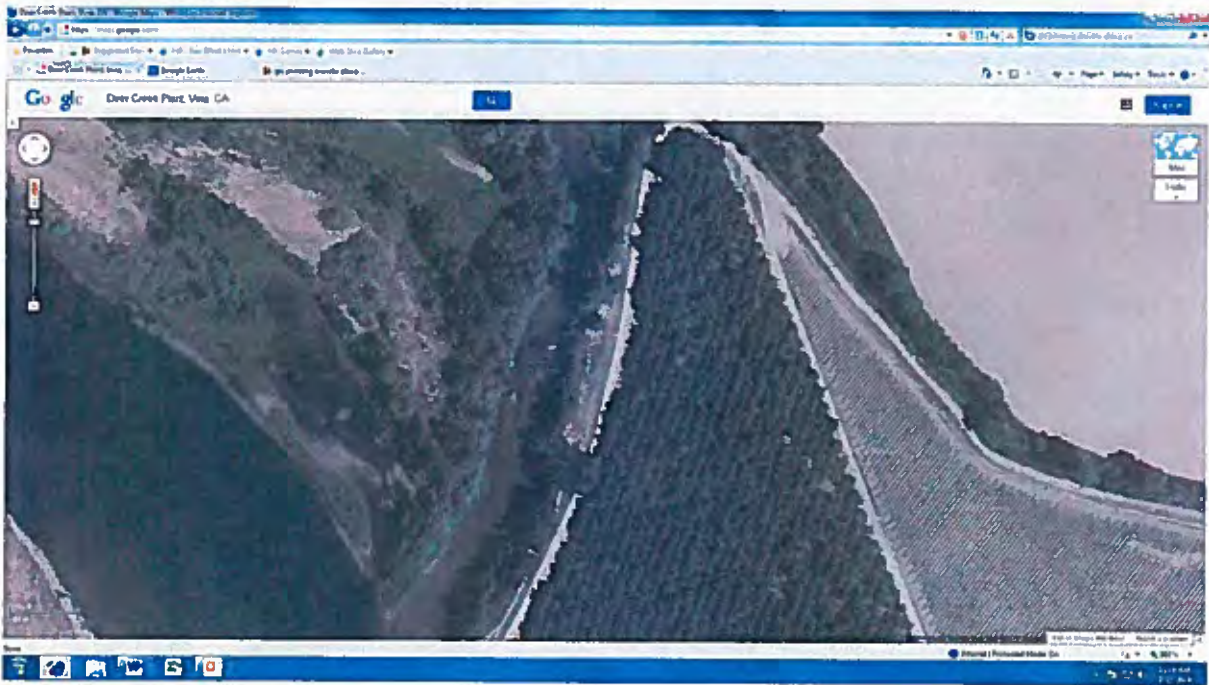
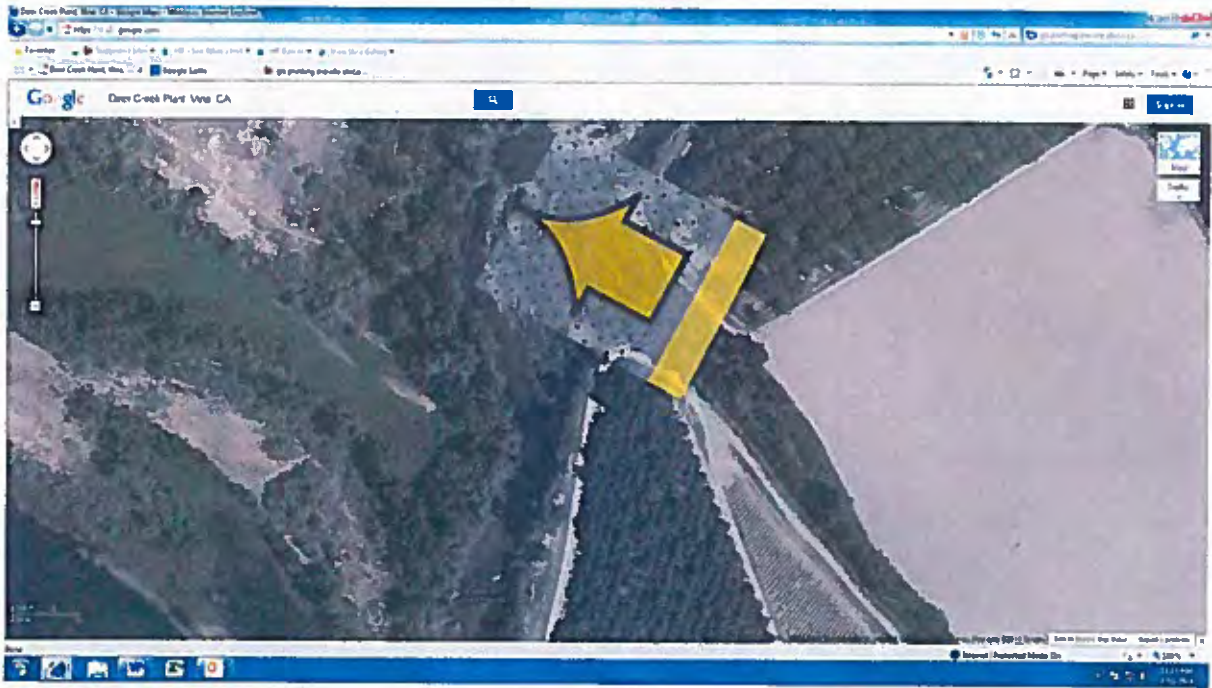






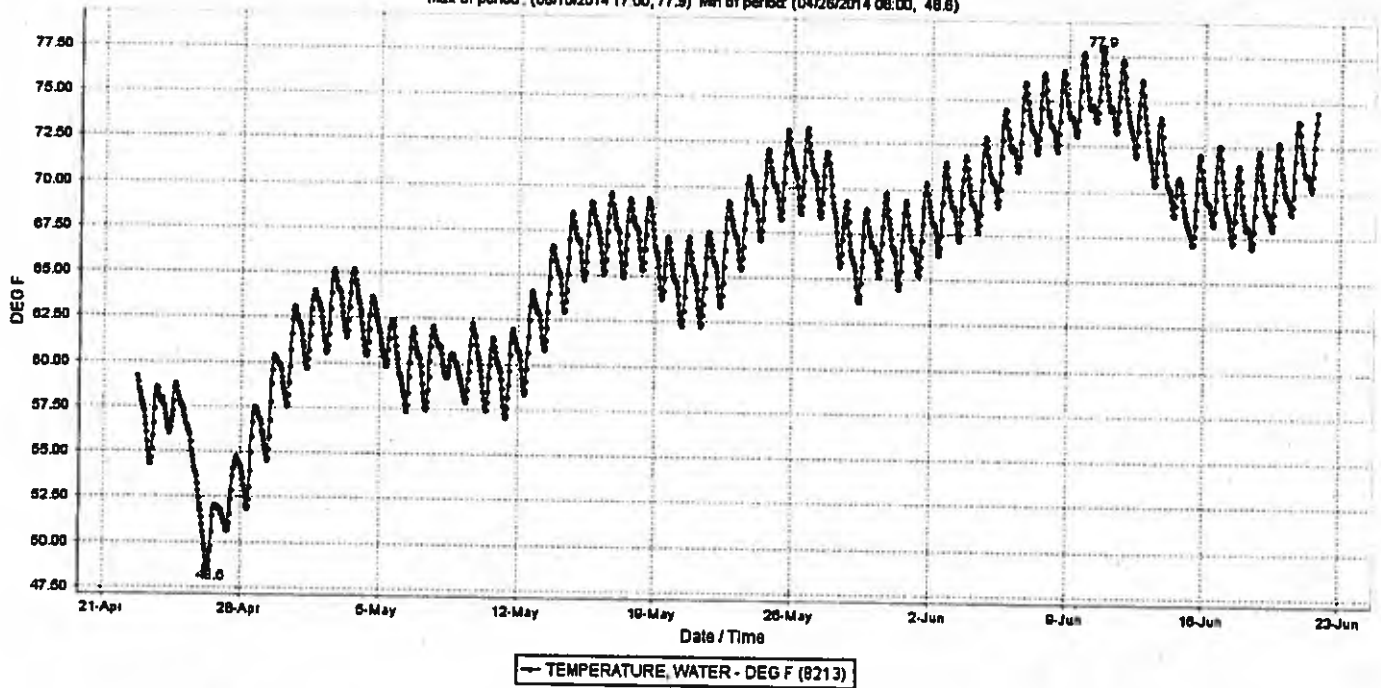






DEER CREEK NR VINA (DCV)

Date from 04/22/2014 16:57 through 06/21/2014 16:57 Duration : 60 days
Max of period : (06/10/2014 17:00, 77.9) Min of period : (04/26/2014 08:00, 48.8)



Generated on Mon Jul 14 17:00:43 PDT 2014

[Plot all DCV Sensors](#) | [Real-Time DCV Data](#) | [DCV Data](#) | [Daily DCV Data](#) | [Show DCV Map](#) | [DCV Info](#)

Plot from ending date: 06/21/2014 16:57 Span: 60 days

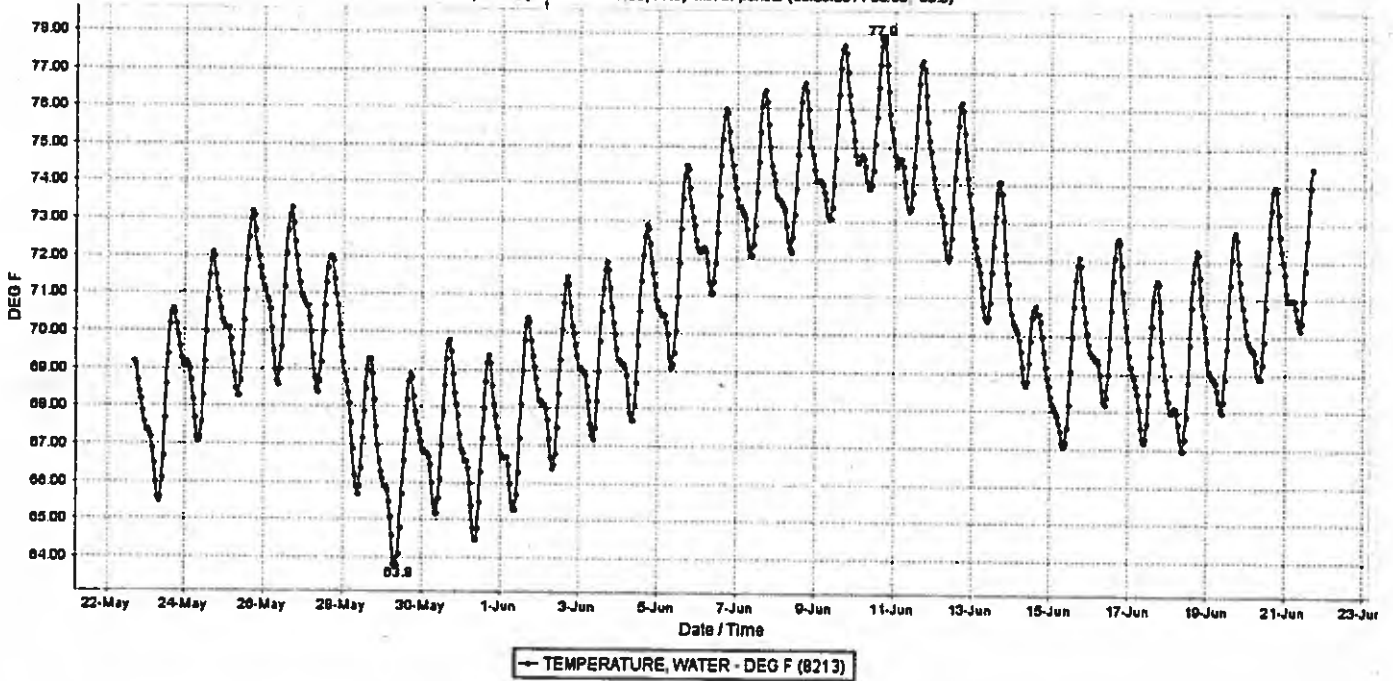
Station Comments:

03/24/2011 Latitude and longitude updated according to information downloaded from USGS web site.

2014 WATER TEMPERATURES AT USGS GAUGE ABOVE STANFORD-VINA DIVERSION

DEER CREEK NR VINA (DCV)

Date from 05/22/2014 16:57 through 06/21/2014 16:57 Duration: 30 days
Max of period: (06/10/2014 17:00, 77.9) Min of period: (05/29/2014 08:00, 63.8)



Generated on Mon Jul 14 17:04:46 PDT 2014

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Plot from ending date: 06/21/2014 16:57 Span: 30 days [Get custom plot](#)

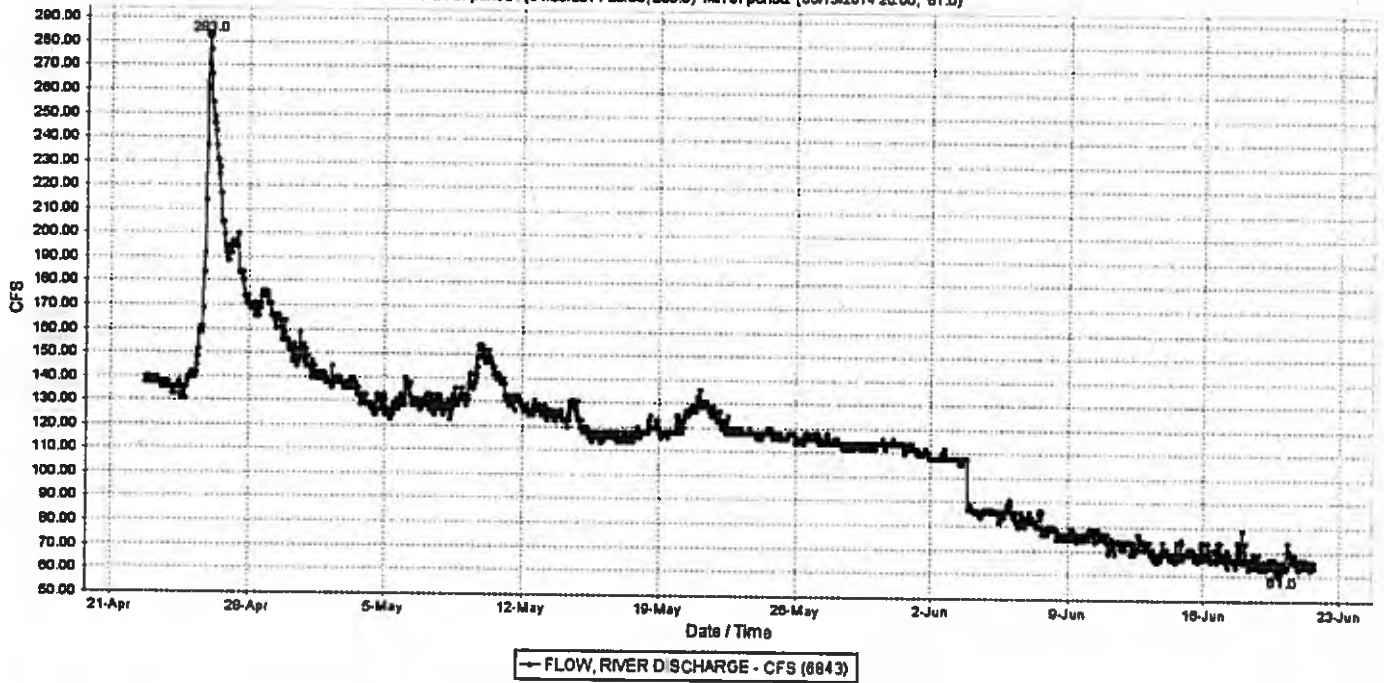
Station Comments:

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2014 WATER TEMPERATURES AT USGS GAUGE ABOVE STANFORD-VINA DIVERSION

DEER CREEK NR VINA (DCV)

Date from 04/22/2014 16:57 through 06/21/2014 16:57 Duration : 60 days
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Generated on Mon Jul 14 17:07:57 PDT 2014

[Plot all DCV Sensors](#) | [Real-Time DCV Data](#) | [DCV Data](#) | [Daily DCV Data](#) | [Show DCV Map](#) | [DCV Info](#)

Plot from ending date: 06/21/2014 16:57 Span: 60 days [Get custom plot](#)

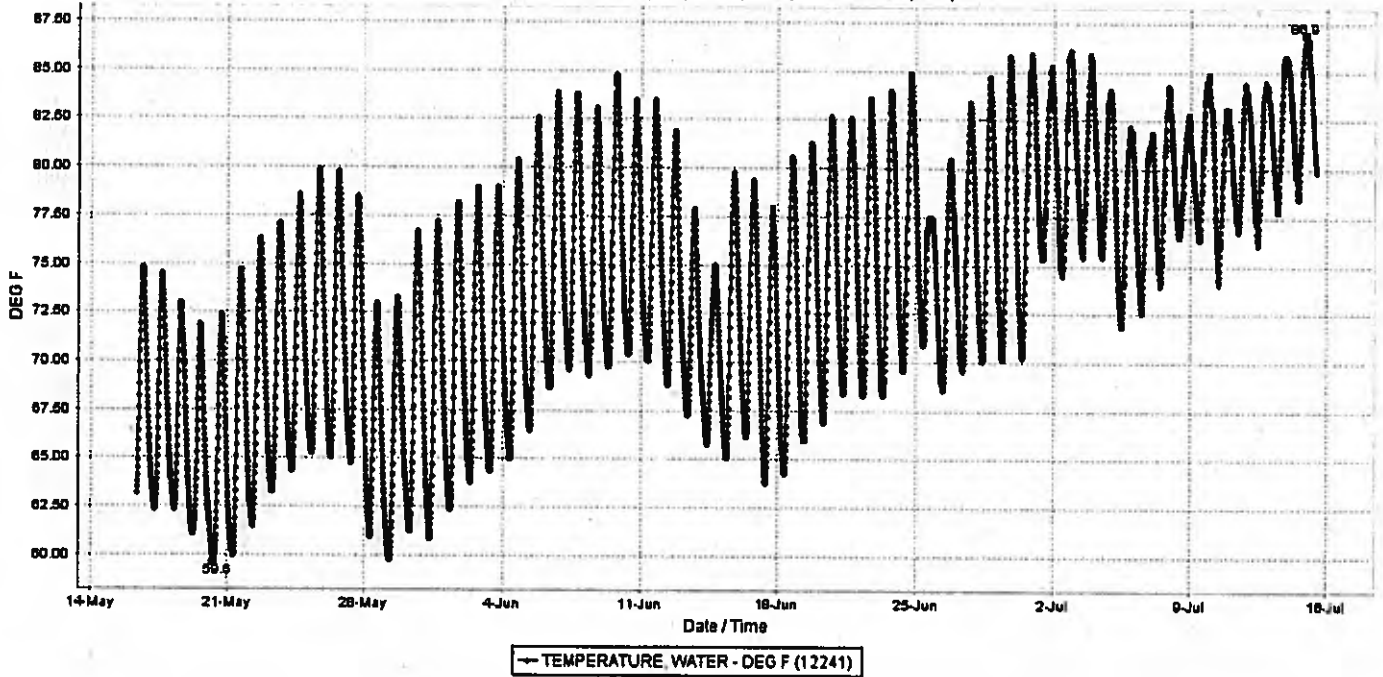
Station Comments:

03/24/2011 Latitude and longitude updated according to information downloaded from USGS web site.

2014 WATER TEMPERATURES AT USGS GAUGE ABOVE STANFORD-VINA DIVERSION

MILL CREEK BELOW HWY 99 (MCH)

Date from 05/16/2014 09:16 through 07/15/2014 09:16 Duration : 60 days
Max of period : (07/14/2014 20:00, 86.9) Min of period : (05/20/2014 07:15, 59.6)



Generated on Tue Jul 15 09:23:31 PDT 2014

[Plot all MCH Sensors](#) | [Real-Time MCH Data](#) | [MCH Data](#) | [Daily MCH Data](#) | [Show MCH Map](#) | [MCH Info](#)

Plot from ending date: 07/15/2014 09:16 Span: 60 days

Station Comments:

- 05/27/2011 Latitude and longitude were updated from Excel file provided by John Clements (DWR).
- 02/15/2011 Latitude and longitude were updated from Excel file provided by John Clements (DWR). NAD83

2014 WATER TEMPERATURES AT USGS GAUGE ABOVE STANFORD-VINA DIVERSION

State of California
The Resources Agency
DEPARTMENT OF FISH AND GAME

**JUVENILE SPRING-RUN CHINOOK SALMON EMERGENCE, REARING AND
OUTMIGRATION PATTERNS IN DEER AND MILL CREEKS, TEHAMA COUNTY,
FOR THE 1998 BROOD YEAR**

SPORT FISH RESTORATION ANNUAL PROGRESS REPORT

by

Colleen Harvey Arrison
Associate Fishery Biologist
NCNCR

December 2001



FISHERY REPORT FOR 1998 BROOD YEAR
DEER CREEK & MILL CREEK

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Calendar Date to Julian Week Conversion

| | | | | | |
|---------------------|----|---------------------|----|---------------------|----|
| Oct 04-10, 1998 | 40 | Apr 25-May 01, 1999 | 17 | Nov 14-20, 1999 | 46 |
| Oct 11-17, 1998 | 41 | May 02-08, 1999 | 18 | Nov 21-27, 1999 | 47 |
| Oct 18-24, 1998 | 42 | May 09-May 15, 1999 | 19 | Nov 28-Dec 04, 1999 | 48 |
| Oct 25-31, 1998 | 43 | May 16-22, 1999 | 20 | Dec 05-11, 1999 | 49 |
| Nov 01-07, 1998 | 44 | May 23-29, 1999 | 21 | Dec 12-18, 1999 | 50 |
| Nov 08-14, 1998 | 45 | May 30-Jun 05, 1999 | 22 | Dec 19-25, 1999 | 51 |
| Nov 15-21, 1998 | 46 | Jun 06-12, 1999 | 23 | Dec 26-Jan 01, 2000 | 52 |
| Nov 22-28, 1998 | 47 | Jun 13-19, 1999 | 24 | Jan 02-08, 2000 | 1 |
| Nov 29-Dec 05, 1998 | 48 | Jun 20-26, 1999 | 25 | Jan 09-15, 2000 | 2 |
| Dec 06-12, 1998 | 49 | Jun 27-Jul 03, 1999 | 26 | Jan 16-22, 2000 | 3 |
| Dec 13-19, 1998 | 50 | Jul 04-10, 1999 | 27 | Jan 23-29, 2000 | 4 |
| Dec 20-26, 1998 | 51 | Jul 11-17, 1999 | 28 | Jan 30-Feb 05, 2000 | 5 |
| Dec 27-Jan 02, 1999 | 52 | Jul 18-24, 1999 | 29 | Feb 06-Feb 12, 2000 | 6 |
| Jan 03-09, 1999 | 1 | Jul 25-31, 1999 | 30 | Feb 13-19, 2000 | 7 |
| Jan 10-16, 1999 | 2 | Aug 01-07, 1999 | 31 | Feb 20-26, 2000 | 8 |
| Jan 17-23, 1999 | 3 | Aug 08-14, 1999 | 32 | Feb 27-Mar 04, 2000 | 9 |
| Jan 24-30, 1999 | 4 | Aug 15-21, 1999 | 33 | Mar 05-11, 2000 | 10 |
| Jan 31-Feb 06, 1999 | 5 | Aug 22-28, 1999 | 34 | Mar 12-18, 2000 | 11 |
| Feb 07-13, 1999 | 6 | Aug 29-Sep 04, 1999 | 35 | Mar 19-25, 2000 | 12 |
| Feb 14-20, 1999 | 7 | Sep 05-11, 1999 | 36 | Mar 26-Apr 01, 2000 | 13 |
| Feb 21-27, 1999 | 8 | Sep 12-18, 1999 | 37 | Apr 02-08, 2000 | 14 |
| Feb 28-Mar 06, 1999 | 9 | Sep 19-25, 1999 | 38 | Apr 09-15, 2000 | 15 |
| Mar 07-13, 1999 | 10 | Sep 26-Oct 02, 1999 | 39 | Apr 16-22, 2000 | 16 |
| Mar 14-20, 1999 | 11 | Oct 03-09, 1999 | 40 | Apr 23-29, 2000 | 17 |
| Mar 21-27, 1999 | 12 | Oct 10-16, 1999 | 41 | Apr 30-May 06, 2000 | 18 |
| Mar 28-Apr 03, 1999 | 13 | Oct 17-23, 1999 | 42 | May 07-13, 2000 | 19 |
| Apr 04-10, 1999 | 14 | Oct 24-30, 1999 | 43 | May 14-20, 2000 | 20 |
| Apr 11-17, 1999 | 15 | Oct 31-Nov 06, 1999 | 44 | May 21-27, 2000 | 21 |
| Apr 18-24, 1999 | 16 | Nov 07-13, 1999 | 45 | May 28-31, 2000 | 22 |

v

INTRODUCTION

This annual brood year (BY) report investigates the life-history of spring-run Chinook salmon (SRCS), (*Oncorhynchus tshawtscha*), spawning in Mill and Deer creeks, Tehama County, California for 1998. This includes monitoring: holding and spawning distribution of adult SRCS returning in 1998, juvenile SRCS rearing studies in 1998 and 1999, and yearling SRCS emigration in 1999 and 2000. Also, included in this life-history investigation are the physical parameters of water flow and temperature during critical periods of adult and juvenile SRCS development.

SRCS once occupied the headwaters of most major river systems on California's Central Valley. Most of this former spring-run habitat has been eliminated by water development and dams that prevent adult salmon access to head water areas (CDFG, 1998). Present day range and distribution of spring-run salmon is restricted to a few tributaries in the Sacramento River System. Due to the declining population levels, loss of historical habitat and concerns over hybridization due to a lack of spatial separation with fall run in the Sacramento River and Feather rivers, tributary SRCS were listed as threatened under CESA and FESA in 1998. Mill, Deer and Butte creeks consistently support small numbers of spawning populations of spring-run chinook. Even prior to water development, stream conditions in these remnant streams may have been marginal when compared to stream conditions historically occurring in the headwaters of the San Joaquin, Little Sacramento, McCloud and Pit rivers. One of the purposes of this life history investigation is to monitor these stream conditions for all stages of SRCS and identify and remedy any factors limiting survival.

This research is funded through the Federal Sport Fish Restoration Act. This 98 BY report is the sixth annual "Juvenile Spring-Run Chinook Salmon Emergence, Rearing and Outmigrant Report" for Mill and Deer Creeks.¹

¹ This program received financial assistance through the Federal Aid in Sport Fish Restoration Act. The U.S. Department of the Interior prohibits discrimination on the basis of race, color, national origin, age, sex, or disability. If you believe you have been discriminated against in any program, activity, or facility, or if you desire further information, please write to:

The Office of Human Resources
U.S. Fish and Wildlife Service
4040 N. Fairfax Drive, Room 300
Arlington, CA 22203

METHODS

Adult SRCS holding distribution surveys are made by underwater snorkel count in August, prior to the onset of spawning. Spawning surveys are made by walking the creek and recording carcasses, live salmon and redds. These surveys are done in September and October. Tissues are collected from carcasses for genetic analysis with the objective of locating a distinct marker for the spring run of chinook salmon. Mill Creek again remained too turbid in 1998 to monitor the adult salmon holding distribution therefore only spawning distribution is documented. Both holding and spawning distribution of adult SRCS are documented for Deer Creek.

Areas where a high concentration of spawning is known to occur are sampled weekly at the onset of predicted fry emergence to determine relative growth of salmon fry and to predict the occurrence of a fry or yearling outmigration pattern for each brood year. A backpack electro shocking unit and a 10' x 4' x 1/2" beach seine is used to capture fish for length and weight measurements. In the fall and early winter months, 5' rotary screw traps are fished near each creeks confluence with the Sacramento River to monitor outmigration of SRCS yearlings on a real-time basis. These data are used in predicting the occurrence of SRCS yearlings in the Sacramento-San Joaquin Delta.

Water temperature records are collected by the Department of Water Resources (DWR), Northern District Office Water Quality Branch. Onset Temperature Recorders are used to collect hourly data in Mill Creek at: the mouth, Hwy-99 Bridge, USGS gauge, mouth of Little Mill Creek, Black Rock, Hole-In-the-Ground Camp, and Hwy-36 Bridge. In Deer Creek, recorders are installed at: the mouth, Hwy-99 Bridge, Upper Diversion dam, Apperson Cow Camp, Ponderosa Way, A-Line Bridge, and Upper Falls. These records are used to document adult migration, rearing, and spawning temperatures, and juvenile egg incubation, emergence, rearing and emigration temperatures.

Water flow records are taken from DWR's California Data Exchange Centers (CDEC) web site: www.cdec.water.ca.gov. All flows are recorded as daily average means for the purposes of this report. This data is preliminary and subject to change. In order to determine migration flow needs for migrating adult and juvenile salmon, flow readings are taken upstream of irrigation diversions (CDEC station MLM (Mill Los Molinos), and DCV (Deer Creek Vina)), and downstream of irrigation diversions (CDEC station DVD (Deer Creek Vina)).

All sampling locations used for these SRCS life history investigations are shown in Appendix, Figure 1 (Mill Creek) and Appendix, Figure 2 (Deer Creek).

RESULTS AND DISCUSSION

Conditions for Adult SRCS Migration

In order to assess real-time water flow and temperature needs for adult SRCS immigration, monitoring of these conditions is necessary downstream of water diversion points from March through early July. In Mill Creek, flow records for this time period in 1998 are only available at the MLM station, which is located upstream of water diversion points. (In January 1999, a flow gauge, MCH (Mill Creek Highway), will be installed downstream from all diversion points and adult salmon migration flows can be monitored on a real-time basis.) Appendix, Figure 3 shows the natural average daily flows in Mill Creek in relation to the migration timing of adult SRCS. This migration timing data came from a counting station operated at Clough Dam from 1953 thru 1964. Using this generalized migration timing, 80% of adult spring-run salmon migrate between the time periods of 6 May and 23 June in Mill Creek. Natural flows averaged 800 cfs during this time period in the spring of 1998. The minimum flow recorded was 483 cfs and the maximum flow was 1,666 cfs. Although flow records below the water diversions are not available for this time period, the maximum amount of flow that can be diverted from lower Mill Creek is 203 cfs. Assuming this maximum amount was diverted, flows still remained above 280 cfs during the peak periods of adult salmon migration. Flow does not appear to have limited adult SRCS migration into Mill Creek in the spring of 1998.

Water temperatures at the mouth of Mill Creek are also not available for the spring of 1998. Appendix, Figure 4 displays the water temperature records in Mill Creek taken at the USGS gauge, upstream of diversion points. The average daily water temperature during the peak period of adult salmon migration was 54 EF. The minimum and maximum daily average water temperature was 49EF and 58EF, respectively. In the absence of temperature records at the mouth of Mill Creek, it is unknown whether water temperatures remained within the normal tolerance range for adult salmon migrating into Mill Creek. For adult chinook salmon in the Sacramento River, the maximum temperature for successful upstream migration appears to be less than 65EF (Boles, 1988). The upstream migration of adult chinook salmon from the Delta to the San Joaquin River has been prevented by water temperatures above 70EF. Upstream migration was resumed when water temperatures cooled to 65EF (Hallock et al, 1970). SRCS may be locally adapted to brief periods of elevated water temperatures in order to reach their natal holding and spawning areas. In the Lower Klamath River system water temperatures as high as 76EF apparently have no effect on upstream migration of adult salmon (Dunhan, 1968), although sustained water temperatures in excess of 80EF are lethal for adult salmon (Cramer and Hammack 1952). Continued monitoring of flows and water temperatures during periods of adult salmon migration into Mill Creek will facilitate real-time flow and temperature requirements for adult salmon migration.

In Deer Creek, flow records for the period of adult salmon migration are available for CDEC station DCV, located upstream of water diversion points. The downstream flow gauge, DVD, did not record flows from 16 March to 17 July. To estimate attraction flows for salmon migrating into Deer Creek during periods of no record, average daily diversion rates were calculated for the dates on record from 1 March to 15 July. The average daily diversion rate was 295 cfs. Appendix, Figure 5 shows the natural average daily flow (pre-diversions) and the estimated average daily attraction flow (post-diversion) in Deer Creek in relation to peak periods of salmon migration. (In Deer Creek, real-time migration timing has not been documented; therefore average migration timing of Mill Creek spring run is used. Salmon may migrate into Deer Creek earlier than Mill Creek). During peak periods of salmon migration, natural flows in

Deer Creek averaged 813 cfs. The minimum and maximum natural flow recorded were 452 cfs and 2,056 cfs respectively. Assuming that the average amount of water diverted during this time period is 295 cfs, the estimated attraction flow into Deer Creek averaged 510 cfs. The minimum and maximum estimated attraction flow is 119 cfs and 1,761 cfs, respectively. Attraction flows did not decrease below 100 cfs until 26 June. By this time over 95% of the run is estimated to have migrated into Deer Creek. Attraction flow does not appear to have limited SRCS migration into Deer Creek in 1998.

Deer Creek water temperatures were recorded near the gauging station at the canyon mouth and at the Hwy-99 Bridge (Appendix, Figure 6). The gauging station is upstream of water diversions and the Hwy-99 Bridge is downstream of diversion points. (Water temperatures at the mouth of Deer Creek were not recorded until after 24 June, therefore Hwy-99 temperature records will be used to represent temperatures during adult salmon migration. The average temperature difference between the mouth and Hwy-99 between 27 June and 15 July 1998 was 0.8EF.) The average daily water temperatures at Hwy-99 Bridge during the peak migration periods 6 May thru 23 June was 58EF. The maximum average daily temperature was 67EF. For this same time period the average daily temperature at the gauging station was 55EF with a maximum average daily temperature of 63EF. Assuming that adult salmon migration is similar in both Mill and Deer creeks, 87% of salmon had migrated into Deer Creek prior to the daily average water temperatures reaching 65EF. Ninety-eight percent of migration occurred prior to temperatures reaching 70EF. Water temperatures remained within the range of normal tolerance limits for adult SRCS migrating into Deer Creek in 1998. Continued monitoring of flows and water temperatures during periods of adult migration into Deer Creek will facilitate real-time flow and temperature requirements for adult salmon migration. Knowing the actual timing of SRCS migration into Deer Creek would assist the Department in negotiating for additional flows during critical periods of migration.

1998 Adult SRCS Population Counts and Spawning Surveys in Mill and Deer Creeks.

_____ After the breaching of Clough Dam on Mill Creek in 1997, and subsequently investigating alternative methods of estimating adult spring-run populations, it was determined that spawner redd counts were the most feasible method of estimating the spring-run spawner escapement in Mill Creek (Harvey Arrison, 1997). Actual redd counts are expanded to a population estimate by assuming each female salmon constructs one redd and the female to male spawner ratio is 1:1. Using expanded redd counts, an estimated 424 adult SRCS spawned in Mill Creek in 1998 (Harvey Arrison, 1998a). In order to improve the accuracy of expanding redd counts to a population estimate, the actual ratio of females per redd will be investigated in future surveys. In addition to the redd counts, 26 carcasses were observed.

In Deer Creek a total of 1,879 adult SRCS salmon were counted in 1998. This count was derived from a snorkel survey of the adult SRCS holding habitat (Harvey Arrison, 1998b). A spawning census survey in the fall of 1998 counted a total of 793 redds and 137 carcasses (USFS, 1998).

Sex and Age Structure of the Population

All salmon carcasses encountered during spawning surveys in Mill and Deer creeks were sexed and measured to the nearest centimeter fork length (cm, FL). To increase the sample size, Mill and Deer creek data was combined. (This is assuming that the Mill and Deer creek populations have similar age structures.) A total of 43 carcasses were measured ranging in size from 49 cm FL to 83 cm FL (Appendix, Figure 7). Trapping records at RBDD indicate a cutoff length between adults and grilse salmon of 61 cm FL for all runs of salmon in the Sacramento River drainage. Using this RBDD criterion, 23% of the spring run were grilse and 77% were adult salmon, at least 3-years old. Given that an unknown percentage of spring run in Mill and Deer creeks exhibit a yearling life-history strategy, these fish may return at a different age and size than spring run fry which emigrate to the ocean within their first year. Therefore, a generalized cutoff length of 61 cm may not reflect the actual age structure of SRCS in Mill and

Deer Creeks. Appendix, Figure 7 suggests that the cutoff length between two and three-year-old fish may be between 50 and 55cm FL. No attempt was made to further refine the age distribution of adult spring run for 1998. Sixty-seven percent of the carcasses identified were female and 33% were male. Due to the low sample size and the tendency for male salmon (grilse and adults) to swim away from the spawning areas before dying, this carcass data set may not reflect the actual age and sex composition of the population. DNA fin clips for genetic analysis were collected to aide researchers in characterizing Central Valley spring-run salmon population genetic structure and developing a loci to discriminate spring run from other Central Valley Chinook stocks. Collections were preserved using the Tris Buffer Method and sent to the Departments Salmon Stock Tissue Collection Archive. A total of 16 samples were collected in Mill Creek and 77 samples in Deer Creek.

Population Trend and Cohort Replacement Rate

For Mill Creek, the estimated 424 SRCS adults returning to spawn in 1998 represents a cohort replacement rate (CCR) of 1.3, when compared with the 320 spawners returning in 1995. Typically a CRR greater than 1.0 represents increasing cohort abundance. (In calculating CRR's it is currently assumed adult escapement methodologies are comparable, all spawners return as 3-year-old fish, there is a 1:1 sex ratio in the population, and there is no variation in these factors between brood years. In fact, as explained in the previous paragraph, age structure and sex ratio for SRCS is only speculative at this time.) Table 1 shows the CCR's for Mill Creek SRCS for the time periods 1957-1964, and 1990-1998. The 1998 population of 424 is still a significant decline from the counts of 3,500 salmon in the 1940's. In the 1990's counts have ranged from a low of 61 salmon in 1993 to a high of 844 in 1990 (Appendix, Figure 8).

For Deer Creek, the count of 1879 represents a CRR of 1.5, when compared with the 1295 spawners in 1995. This data represents an increase in cohort abundance. Table 2 shows the CCR's for Deer Creek spring-run salmon for the time periods 1990-1998. Counts in Deer Creek have been as high as 4,000 salmon in the 1940's. More recently in the 1990's, counts have ranged from a low of 209 salmon in 1992 to this year's high of 1,879 (Appendix, Figure 9).

TABLE 1. Mill Creek spring-run chinook salmon cohort replacement rates.

| Cohort | Brood Year | Cohort Replacement Rate |
|--------|------------|-------------------------|
| 1 | 1957 | 1203/1789=0.7 |
| 2 | 1958 | 2212/2967=0.7 |
| 3 | 1959 | 1580/2233=0.7 |
| 1 | 1960 | 2368/1203=2.0 |
| 2 | 1961 | 1245/2212=0.6 |
| 3 | 1962 | 1692/1580=1.1 |
| 1 | 1963 | 1315/2368=0.6 |
| 2 | 1964 | 1628/1245=1.3 |
| 1 | 1990 | 844/89=9.5 |
| 2 | 1991 | 319/572=0.6 |
| 3 | 1992 | 237/563=0.4 |
| 1 | 1993 | 61/844=0.1 |
| 2 | 1994 | 723/319=2.3 |
| 3 | 1995 | 320/237=1.4 |
| 1 | 1996 | 252/61=4.1 |
| 2 | 1997 | 202/723=0.3 |
| 3 | 1998 | 424/320=1.3 |

TABLE 2. Deer Creek spring-run chinook salmon cohort replacement rates.

| Cohort | Brood Year | Cohort Replacement Rate |
|--------|------------|-------------------------|
| 1 | 1990 | 458/200=2.3 |
| 2 | 1991 | 448/371=1.2 |
| 3 | 1992 | 209/77=2.7 |
| 1 | 1993 | 259/458=0.6 |
| 2 | 1994 | 485/448=1.1 |
| 3 | 1995 | 1295/209=6.2 |
| 1 | 1996 | 614/259=2.4 |
| 2 | 1997 | 466/485=1.0 |
| 3 | 1998 | 1879/1295=1.5 |

Conditions for Adult SRCS Holding and Spawning

Immature adult SRCS hold in the higher elevations of Mill and Deer creeks from the time of spring migration until the onset of fall spawning—approximately May through September. Temperature records in the holding and spawning habitat are presented here for the purpose of documenting the actual temperature regimes wild salmon are holding and spawning in. According to Hinz (1959), the survival of adult fish can be reduced when holding in water temperatures warmer than 59°F. Additionally, prolonged exposure of female salmon to water temperatures between 60°F and 62°F can reduce egg viability up to 30%. In Appendix, Figures 10 and 11, average daily mean water temperatures at select locations are graphed during adult salmon holding periods in Mill and Deer creeks, respectively. The maximum average daily temperature threshold for normal egg viability is shown as 59°F.

In Mill Creek at Hwy-36, the water temperature exceeded the 59°F threshold on three days between 3 and 7 September. The maximum temperature recorded was 60.5°F. At Hole-in-the Ground, water temperature remained at or below the 59°F throughout the adult salmon holding period. At Black Rock the average daily water temperature exceeded the threshold for 25 days between 25 July and 8 September. The maximum recorded average daily temperature was 63°F on 14 August. The water temperature at Little Mill remained above 59°F after 5 July. The maximum recorded water temperature was 69.5°F on 14 August. Since the holding distribution of adult salmon in Mill Creek was not monitored in 1998, no speculations can be made about the effects of elevated water temperatures on adult salmon survival or egg viability.

In Deer Creek, 10% of the SRCS population counted in 1998 was holding in the Upper Falls and A-Line reaches (Harvey Arrison, 1998b). Average daily water temperatures at Upper Falls exceeded 59°F on only one day, 25 July. In the A-line holding area, the water temperature rose above 59°F for a total of 21 days between 21 July and 7 September. The maximum average daily water temperature during this time period was 61.9°F. Forty-nine percent of holding SRCS adults occurred between Polk Springs to Beaver Creek in 1998. The nearest temperature recording station is downstream at Ponderosa Way. Water temperatures at Ponderosa Way

remained above 59°F from 2 July to 18 September. The highest daily average temperature during this time period was 67.1°F recorded on 14 August. No temperature records are available below Ponderosa Way for these time periods. Therefore, no conclusion can be made about the maximum water temperatures for the 30% of the salmon population holding between Ponderosa Way and Dillon Cove. Eighty percent of adult SRCS holding in Deer Creek in 1998 were in areas where the daily average water temperatures were above the referenced optimal level of 59°F. No temperature studies have been made on these creeks to investigate possible thermal stratification or spring influences and whether this may affect salmon distribution. It is unknown why adult salmon were concentrated in areas with water temperatures up to 8°F warmer than holding pools at higher elevations. In 1998 less than 1% of the population held in water temperatures considered optimal for survival. It is also unknown whether these higher temperatures affected spawning success or salmon egg viability.

Current literature suggests that the upper temperature tolerance for spawning adult salmon, without destroying egg viability, is 57°F (Reiser and Bjorn, 1979). When water temperatures exceed 57.5°F, up to 80% salmon egg and fry losses can occur (Healey, 1977). In Mill Creek the average daily water temperatures dropped below the 57°F threshold first in the Hole-in-the-Ground area on 8 September (Appendix, Figure 12). In the Black Rock and Hwy-36 reaches, temperatures decreased to below the threshold on 17 September. Areas of Mill Creek near Little Mill Creeks' confluence cooled down 3 October. Spawning surveys in 1998 did not begin until 21 September. It is unknown whether spawning activities began prior to water temperatures decreasing to below the threshold level. Water temperatures were below 57°F during the spawning surveys.

In Deer Creek temperatures dropped below the 57°F threshold first at A-Line on 10 September and then on 19 September for Ponderosa Way (Appendix, Figure 13). No water temperature records are available during SRCS spawning times in 1998 for the Upper Falls and Apperson Cow Camp Areas. In 1998, weekly surveys of indexed areas to determine the onset, peak and termination of spawning were not made, and therefore it is unknown whether spawning activities began prior to a decrease in water temperatures. The spawning distribution surveys were made the week of 13 October.

Egg Incubation, Hatching and Fry Emergence

Daily water temperature records are used to estimate the length of time from spawning for the eggs to hatch and fry to emerge from the gravels. In Mill Creek, water temperature records from Hole-in-the-Ground, Black Rock and below the Little Mill confluence are usually used for emergence timing studies. In 1998, complete water temperature records are only available for the Black Rock area of Mill Creek. In Deer Creek water temperature records from Upper Falls, A-Line Bridge, Ponderosa Way and Apperson Cow Camp are usually used for the emergence studies. This year there are no complete temperature data sets to use in predicting fry emergence in Deer Creek.

To predict an estimated time of fry emergence, daily temperature units (DTU) were calculated from the water temperature records on each creek. A DTU is defined as the average daily water temperature (in Fahrenheit) minus 32. From the time of egg fertilization, a cumulative total of 1,550 DTU's is required for the egg to hatch and the fry to emerge (Armor, 1991 in CDFG, 1998). Based on the number of redds and live fish seen on each of three spawning surveys, the week of 22 September appeared to represent the peak of spawning activities in the Black Rock area of Mill Creek. Using this peak spawning date, the calculated date of peak emergence of fry in the Black Rock area was 28 January 1999 (Table 3). The time lapse between the onset and termination of spawning (generally late August through the end of October) can last up to eight weeks. This can lead to a great deal of variability in the onset and termination of fry emergence. Since weekly surveys to determine the onset and termination of

spawning were not made in 1998, the earliest and latest expected emergence of fry is not estimated for either Mill or Deer Creek.

In Mill Creek, biweekly electrofishing surveys to detect 98BY fry emergence began 17 December at Black Rock. The first emergent fry was captured on 19 February, 21 days after calculated emergence. The first group of fry (>5 fish) was captured on 16 March, 46 days after calculated emergence (Table 4). In order to minimize damage to eggs and pre-emergent fry, electrofishing surveys are made in edge water habitats away from known redd locations. This may explain the time lapse between calculated emergence from the redd and emergent fry captured in the edge water habitat.

In Deer Creek, the first survey to detect 98BY fry was on 23 December at Ponderosa Way. One emergent fry was captured. The first group of fry (>5 fish) was observed on 4 January. At the A-line Bridge, the first emergent fry was captured on 26 February, and the first group of fry (>5 fish) was captured one month later on 24 March. Since there are no complete temperature data sets in Deer Creek for the winter of 1998, observed emergence cannot be compared with calculated emergence.

TABLE 3. Mean daily water temperatures in Mill Creek at Jack Rock. Estimated time of fry emergence based on September 22 peak of spawning and calculated from daily temperature units (DTU).

| Day | SEP 98 | | | OCT 98 | | | NOV 98 | | | DEC 98 | | | JAN 99 | | |
|-----|--------|------|--------|--------|------|--------|--------|------|--------|--------|------|--------|--------|------|--------|
| | mean | TU | CUM TU | mean | TU | CUM TU | mean | TU | CUM TU | mean | TU | CUM TU | mean | TU | CUM TU |
| 1 | 60.0 | | | | | | | | | | | | | | |
| 2 | 59.9 | | | 54.2 | | | | | | | | | | | |
| 3 | 60.2 | | | 53.7 | 22.2 | 207.8 | 46.7 | 14.7 | 702.2 | 43.6 | 11.6 | 1042.2 | 40.4 | 8.4 | 1311 |
| 4 | 61.2 | | | 51.3 | 19.3 | 229.5 | 46.1 | 12.6 | 714.8 | 44.4 | 12.4 | 1054.6 | 40.4 | 8.4 | 1319 |
| 5 | 60.5 | | | 48.6 | 16.6 | 248.8 | 45.8 | 14.1 | 728.9 | 43.7 | 11.7 | 1066.3 | 40.4 | 8.4 | 1328 |
| 6 | 60.2 | | | 49.3 | 17.3 | 265.4 | 45.8 | 13.8 | 742.7 | 40.4 | 8.4 | 1074.7 | 40 | 8.0 | 1336 |
| 7 | 61.4 | | | 49.7 | 17.7 | 282.7 | 42.9 | 13.8 | 756.5 | 37.9 | 5.9 | 1080.6 | 40.1 | 8.1 | 1344 |
| 8 | 60.1 | | | 49.5 | 17.7 | 300.4 | 42.9 | 10.9 | 767.4 | 37.0 | 5.0 | 1085.6 | 40.6 | 8.6 | 1352 |
| 9 | 58.1 | | | 49.5 | 17.5 | 317.9 | 42.4 | 10.4 | 777.8 | 37.7 | 5.7 | 1091.3 | 39.8 | 7.8 | 1360 |
| 10 | 55.3 | | | 50.6 | 18.6 | 336.5 | 41.3 | 9.3 | 787.1 | 40.0 | 8.0 | 1099.3 | 39.9 | 7.9 | 1368 |
| 11 | 56.0 | | | 46.9 | 17.0 | 353.5 | 40.4 | 8.4 | 795.5 | 38.5 | 6.5 | 1105.8 | 40.5 | 8.5 | 1376 |
| 12 | 57.4 | | | 46.0 | 14.9 | 368.4 | 41.7 | 9.7 | 805.2 | 39.1 | 7.1 | 1112.9 | 40.7 | 8.7 | 1385 |
| 13 | 57.5 | | | 48.6 | 14.0 | 382.4 | 41.2 | 9.2 | 814.4 | 40.8 | 8.8 | 1121.7 | 40.4 | 8.4 | 1394 |
| 14 | 57.7 | | | 48.6 | 16.6 | 399.0 | 41.9 | 9.9 | 824.3 | 42.5 | 10.5 | 1132.2 | 40.1 | 8.1 | 1402 |
| 15 | 58.1 | | | 48.6 | 16.6 | 415.6 | 42.8 | 10.8 | 835.1 | 43.2 | 11.2 | 1143.4 | 41.6 | 9.6 | 1411 |
| 16 | 57.3 | | | 48.6 | 16.6 | 432.2 | 42.5 | 10.5 | 845.6 | 41.8 | 9.8 | 1153.2 | 42.1 | 10.1 | 1421 |
| 17 | 56.0 | | | 48.6 | 16.6 | 448.8 | 44.0 | 12.0 | 857.6 | 40.8 | 8.8 | 1162.0 | 44.2 | 12.2 | 1434 |
| 18 | 54.0 | | | 48.6 | 16.6 | 465.4 | 44.2 | 12.2 | 869.8 | 40.8 | 8.8 | 1170.8 | 44.3 | 12.3 | 1446 |
| 19 | 53.4 | | | 48.6 | 16.6 | 482.0 | 44.0 | 12.0 | 881.8 | 40.8 | 8.8 | 1179.6 | 43.5 | 11.5 | 1459 |
| 20 | 54.0 | | | 48.6 | 16.6 | 498.6 | 42.5 | 10.5 | 892.3 | 40.8 | 8.8 | 1188.4 | 43.3 | 11.3 | 1472 |
| 21 | 53.2 | | | 48.6 | 16.6 | 515.2 | 41.7 | 9.7 | 902.0 | 40.8 | 8.8 | 1197.2 | 42.7 | 10.7 | 1485 |
| 22 | 53.5 | 20.9 | 20.9 | 48.6 | 16.6 | 531.8 | 42.1 | 10.1 | 912.1 | 40.8 | 8.8 | 1206.0 | 42.3 | 10.3 | 1499 |
| 23 | 53.5 | 21.5 | 42.4 | 47.3 | 15.6 | 548.4 | 44.9 | 12.9 | 925.0 | 40.8 | 8.8 | 1214.8 | 41.6 | 9.6 | 1513 |
| 24 | 53.9 | 21.9 | 64.3 | 47.3 | 15.3 | 564.0 | 44.8 | 12.8 | 937.8 | 40.8 | 8.8 | 1223.6 | 41.8 | 9.8 | 1527 |
| 25 | 53.5 | 21.5 | 85.8 | 47.3 | 15.4 | 579.3 | 45.6 | 13.6 | 951.4 | 40.8 | 8.8 | 1232.4 | 40.1 | 8.1 | 1541 |
| 26 | 52.7 | 20.7 | 106.5 | 46.9 | 14.9 | 594.7 | 43.2 | 11.4 | 962.6 | 40.8 | 8.8 | 1241.2 | 38.7 | 6.7 | 1555 |
| 27 | 50.2 | 18.2 | 124.7 | 47.3 | 15.3 | 609.6 | 43.8 | 11.8 | 974.0 | 40.8 | 8.8 | 1250.0 | 38.9 | 6.9 | 1569 |
| 28 | 50.4 | 18.4 | 143.1 | 47.6 | 15.6 | 624.9 | 44.1 | 12.1 | 985.8 | 40.8 | 8.8 | 1258.8 | 40.8 | 8.8 | 1583 |
| 29 | 52.8 | 20.8 | 163.9 | 49.5 | 17.5 | 640.5 | 43.8 | 11.8 | 997.9 | 40.8 | 8.8 | 1267.6 | 39.5 | 7.5 | 1597 |
| 30 | 53.7 | 21.7 | 185.6 | 48.4 | 16.4 | 658.0 | 43.8 | 11.8 | 1009.7 | 40.8 | 8.8 | 1276.4 | 39.6 | 7.6 | 1611 |
| 31 | | | | 45.1 | 13.1 | 674.4 | 41.1 | 9.1 | 1018.8 | 40.8 | 8.8 | 1285.2 | 38.7 | 6.7 | 1625 |
| | | | | 44.4 | 12.4 | 687.5 | 43.8 | 11.8 | 1030.6 | 40.8 | 8.8 | 1294.0 | 38.6 | 6.6 | 1639 |
| | | | | | | | | | | | | | 39.6 | 7.6 | 1653 |

1/ No data 10/12-20/99 monthly avg used

2/ No data 2/15-31/99 monthly avg used.

TABLE 4. Actual and calculated emergence of spring-run chinook salmon fry in Mill and Deer creeks from the estimated peak of spawning based on TU's. (Table 3) a/

| | Mill Creek | | | Deer Creek | | |
|-------------------------|--------------------|------------|--------------------|--------------------|--------------------|--------------------|
| | Hole-in-Ground | Black Rock | Little Mill | A-line | Ponderosa Way | Apperson |
| 1st Observed Emergence | no surveys | 2/19/99 | no surveys | 02/26/99 | 12/23/98 | no surveys |
| 1st Group Emergence n>5 | no surveys | 3/16/99 | no surveys | 03/24/99 | 1/4/99 | no surveys |
| Calculated Emergence | incomplete records | 01/28/99 | incomplete records | incomplete records | incomplete records | incomplete records |

a/ Due to low sampling intensity and the duration of time between the onset and termination of spawning, this data may not reflect the earliest dates of actual and calculated emergence.

SRCS Juvenile Rearing

In Mill Creek headwaters, 1998BY SRCS were sampled in bimonthly electrofishing samples from 19 February, 1999 through 31 March, 2000. A total of 170 juveniles were captured ranging in size from 33 mm FL to 111 mm FL (Table 5). In Deer Creek headwaters, 1998 BY SRCS were sampled from 23 December, 1998 through 7 February, 2000. A total of 271 juveniles were captured ranging in size from 32 mm FL to 78 mm FL (Table 6.) Combining Mill and Deer Creek rearing data, SRCS emerged at approximately 32 mm FL and grew to at least 111 mm FL over a 15-month period. Recently emerged fry, (33-39mmFL), continued to be sampled through 15 April, 1999 in Mill Creek, (Appendix, Figures 14 and 15), and 15 May, 1999 in Deer Creek, (Appendix, Figures 16 and 17). This apparent "continual emergence" may be a result of the range in spawning times resulting in a constant recruitment of smaller fish into the sampling site, or reduced growth of weaker fish. Once fish reached 70-80 mm FL in both creeks they appeared to either migrate out of the sample reaches or effectively escape the sampling gear (Appendix, Figures 16-19). Due to the gear selectivity associated with electrofishing, the actual maximum obtained growth may be larger than the observed maximum growth. In future years additional sampling techniques will be employed to get a more representative sample of rearing SRCS length distribution. From this data we cannot predict what proportion of the 1998BY emigrated as fry or reared over summer and emigrated as yearlings. Also, distribution of rearing juveniles in each watershed thru time has not been researched.

Growth Rates for rearing SRCS

Growth rates are not calculated for SRCS juveniles rearing in these creeks. In order to calculate a growth rate, sufficient numbers would need to be tagged with unique marks and consistently recaptured throughout the rearing period. This was attempted in 1996. All juveniles sampled during biweekly surveys in Mill and Deer Creek were Coded-Wire-Tagged (CWT'ed). A total of 157 SRCS was CWT'ed in Mill Creek, and a total of 782 was CWT'ed in Deer Creek. None of these tagged fish were recaptured on subsequent juvenile or adult surveys. In general, too few juveniles are captured to get recoveries on tagged fish. Calculated growth rates for chinook salmon rearing in the Upper Sacramento River averaged 0.33 mm/day and ranged from 0.26 to 0.40 mm/day, (Kjelson et.al., 1982). Growth rates for chinook salmon from two different brood years in Butte Creek (including spring run and fall run) were calculated at 0.77 mm/d (range 0.45 to 1.02mm/d) and 0.2 mm/d (range 0.09 to 0.32 mm/d) respectively, (Hill, 1999). SRCS in Butte Creek are incubating and rearing at different elevations and water temperatures than Mill and Deer Creek which may influence growth rates.

TABLE 5. Bimonthly electrofishing catch summary of spring-run Chinook salmon rearing in Mill Creek at Hole-in-the-Ground and Black Rock from December 1998 through March 2000. Only 1998 brood year fish are reported.

| Capture Period | Mean FL (mm) | Standard Deviation | Range min (mm) | FL max (mm) | Total Number Captured |
|-------------------|--|--------------------|----------------|-------------|-----------------------|
| 12/16/98-12/31/98 | | | | | 0 |
| 01/01/99-01/15/99 | | | | | 0 |
| 01/16/99-01/31/99 | | | | | 0 |
| 02/01/99-02/15/99 | | | | | 0 |
| 02/16/99-02/28/99 | 35 | 0.7 | 34 | 35 | 2 |
| 03/01/99-03/15/99 | 36 | 2.6 | 34 | 40 | 6 |
| 03/16/99-03/31/99 | 38 | 2.6 | 33 | 43 | 28 |
| 04/01/99-04/15/99 | 39 | 5.8 | 34 | 53 | 16 |
| 04/16/99-04/30/99 | 42 | 5.8 | 35 | 54 | 40 |
| 05/01/99-05/15/99 | 46 | 7.1 | 38 | 62 | 29 |
| 05/16/99-05/31/99 | 52 | 6.1 | 43 | 64 | 16 |
| 06/01/99-06/15/99 | 59 | 5.6 | 47 | 69 | 10 |
| 06/16/99-06/30/99 | 70 | 6.5 | 59 | 81 | 12 |
| 07/01/99-07/15/99 | 62 | 4.6 | 57 | 70 | 7 |
| 07/16/99-07/31/99 | | | | | 0 |
| 08/01/99-08/15/99 | | | | | no surveys |
| 08/16/99-08/31/99 | | | | | no surveys |
| 09/01/99-09/15/99 | | | | | no surveys |
| 09/16/99-09/30/99 | | | | | 0 |
| 10/01/99-10/15/99 | No surveys between October 1, 1999 and December 31, 1999 | | | | |
| 10/16/99-10/31/99 | | | | | |
| 11/01/99-11/15/99 | | | | | |
| 11/16/99-11/30/99 | | | | | |
| 12/01/99-12/15/99 | | | | | |
| 12/16/99-12/31/99 | | | | | |
| 01/01/00-01/15/00 | 108 | 4.2 | 105 | 111 | 2 |
| 01/16/00-01/31/00 | | | | | 0 |
| 02/01/00-02/15/00 | 109 | | 109 | 109 | 1 |
| 02/16/00-02/29/00 | | | | | 0 |
| 03/01/00-03/15/00 | | | | | 0 |
| 03/16/00-03/31/00 | 107 | | 107 | 107 | 1 |

TABLE 6. Bimonthly electrofishing catch summary of spring-run chinook salmon rearing in Deer Creek at A-Line Bridge and Ponderosa Way from December 1998 through February 200. Only 1998 brood year fish are reported.

| Capture Period | Mean FL (mm) | Standard Deviation | Range min (mm) | FL max (mm) | Total Number Captured |
|---|--------------|--------------------|----------------|-------------|-----------------------|
| 12/16/98-12/31/98 | 35 | | 35 | 35 | 1 |
| 01/01/99-01/15/99 | 35 | 1.1 | 34 | 37 | 27 |
| 01/16/99-01/31/99 | | | | | 0 |
| 02/01/99-02/15/99 | 35 | 0.9 | 33 | 36 | 17 |
| 02/16/99-02/28/99 | 36 | 0.6 | 35 | 36 | 3 |
| 03/01/99-03/15/99 | 38 | 1 | 37 | 39 | 4 |
| 03/16/99-03/31/99 | 36 | 2.8 | 33 | 46 | 27 |
| 04/01/99-04/15/99 | 35 | 1.6 | 32 | 39 | 29 |
| 04/16/99-04/30/99 | 36 | 2 | 32 | 44 | 89 |
| 05/01/99-05/15/99 | 37 | 2.2 | 34 | 42 | 14 |
| 05/16/99-05/31/99 | 43 | 7.6 | 36 | 52 | 4 |
| 06/01/99-06/15/99 | 53 | 4.9 | 41 | 61 | 15 |
| 06/16/99-06/30/99 | 58 | 5.7 | 47 | 71 | 30 |
| 07/01/99-07/15/99 | 72 | 3.5 | 67 | 76 | 7 |
| 07/16/99-07/31/99 | 70 | 8 | 62 | 78 | 3 |
| No data collected between August 1, 1999 and December 7, 1999 | | | | | |
| 08/01/99-08/15/99 | | | | | |
| 08/16/99-08/31/99 | | | | | |
| 09/01/99-09/15/99 | | | | | |
| 09/16/99-09/30/99 | | | | | |
| 10/01/99-10/15/99 | | | | | |
| 10/16/99-10/31/99 | | | | | |
| 11/01/99-11/15/99 | | | | | |
| 11/16/99-11/30/99 | | | | | |
| 12/01/99-12/15/99 | | | | | 0 |
| 12/16/99-12/31/99 | | | | | no surveys |
| 01/01/00-01/15/00 | | | | | 0 |
| 01/16/00-01/31/00 | | | | | 0 |
| 02/01/00-02/15/00 | 73 | | 73 | 73 | 1 |

SRCS Fry and Yearling Emigration

Rotary screw traps are used to sample fry and yearling chinook salmon outmigration in each creek. The purpose of this sampling is to determine the relative size at outmigration and the timing of outmigration. Abundance estimates of SRCS emigrants are not made due to the difficulties of obtaining trap efficiency estimates during peak emigration periods (i.e., high flow events, debris, trap removal, and run separation). Also, recaptures from the small numbers of wild fish captured in the trap may not be obtainable during normal flow events.

The screw traps in each creek are placed within the fall-run chinook salmon (FRCS) spawning habitat. Although fall run spawn later in the season than spring run, FRCS fry emergence and emigration timing may be similar to SRCS due to warmer water temperatures during egg incubation in fall run spawning areas. Therefore, chinook fry captured in the rotary screw trap are not identified to run. All yearling-sized chinook salmon captured in the traps are assumed to be SRCS.

In Mill Creek, the rotary screw trap was fished from 26 October 1998 through 31 of January 1999. The trap was not fished from 1 February 1999 through 7 October 1999. Trapping resumed 8 October 1999 and continued through 30 June 2000. A total of 485, 1998 BY SRCS and FRCS fry, and 50, 1998 BY SRCS yearlings were trapped during these time periods (Table 7 and Appendix, Figures 18 and 19). Fry ranged in size from 32 to 41 mm FL and yearlings ranged in size from 68 to 140 mm FL. The first 1998 BY fry outmigrant was captured on 16 November 1998. It is unknown when fry outmigration ended since the trap was removed in January 1999. The first yearling outmigrant was trapped on 10 October 1999. Yearlings continued to be captured through 1 May 2000.

For the 1998 BY outmigration sampling period there were two periods of increased migration. These peak periods of migration were associated with increased flow and turbidity (Appendix, Figures 20 and 21). From 10 January 1999 through 23 January 1999, 94% of the total trap catch for the fall sampling period emigrated from Mill Creek. Peak average weekly flow was 599 cfs and peak average weekly turbidity was 23 ntu's. From 9 January 2000 through 12 February 2000, 81% of the total trap catch for the spring of 2000 sampling period emigrated. Peak average weekly flow was 596 cfs and peak average turbidity was 18 cfs. (Actual peak flows and turbidities may have been higher during these time periods but the trap was removed at flows exceeding 1000 cfs).

TABLE 7. Size statistics and bimonthly catch of spring-run and fall-run chinook salmon fry and spring-run chinook salmon yearlings captured in the Mill Creek rotary screw trap. Only 1998 brood year salmon are reported.

| Capture Period | Mean FL | Standard | Range FL | | Total Number |
|-------------------|---|-----------|----------|----------|--------------|
| | (mm) | Deviation | min (mm) | max (mm) | Captured |
| 11/16/98-11/30/98 | 34 | | 34 | 34 | 1 |
| 12/01/98-12/15/98 | | | | | 0 |
| 12/16/98-12/31/98 | 35 | 1.4 | 33 | 37 | 6 |
| 01/01/99-01/15/99 | 35 | 1.2 | 32 | 39 | 132 |
| 01/16/99-01/31/99 | 36 | 1.4 | 33 | 41 | 346 |
| 02/01/99-02/15/99 | no sampling February 1999 thru September 1999 | | | | |
| 02/16/99-02/28/99 | | | | | |
| 03/01/99-03/15/99 | | | | | |
| 03/16/99-03/31/99 | | | | | |
| 04/01/99-04/15/99 | | | | | |
| 04/16/99-04/30/99 | | | | | |
| 05/01/99-05/15/99 | | | | | |
| 05/16/99-05/31/99 | | | | | |
| 06/01/99-06/15/99 | | | | | |
| 06/16/99-06/30/99 | | | | | |
| 07/01/99-07/15/99 | | | | | |
| 07/16/99-07/31/99 | | | | | |
| 08/01/99-08/15/99 | | | | | |
| 08/16/99-08/31/99 | | | | | |
| 09/01/99-09/15/99 | | | | | |
| 09/16/99-09/30/99 | | | | | |
| 10/01/99-10/15/99 | 111 | 1.5 | 109 | 112 | 3 |
| 10/16/99-10/31/99 | 103 | 18.6 | 68 | 140 | 15 |
| 11/01/99-11/15/99 | | | | | 0 |
| 11/16/99-11/30/99 | | | | | 0 |
| 12/01/99-12/15/99 | 102 | 8.4 | 91 | 110 | 5 |
| 12/16/99-12/31/99 | | | | | 0 |
| 01/01/00-01/15/00 | 95 | 6.4 | 90 | 99 | 2 |
| 01/16/00-01/31/00 | 108 | 16.3 | 87 | 131 | 6 |
| 02/01/00-02/15/00 | 103 | 8.6 | 94 | 113 | 5 |
| 02/16/00-02/29/00 | 107 | 3 | 104 | 110 | 3 |
| 03/01/00-03/15/00 | 113 | 7.5 | 103 | 122 | 5 |
| 03/16/00-03/31/00 | 99 | 4.9 | 95 | 102 | 2 |
| 04/01/00-04/15/00 | 131 | 1.2 | 130 | 132 | 3 |
| 04/16/00-04/30/00 | | | | | 0 |
| 05/01/00-05/15/00 | 128 | | 128 | 128 | 1 |

In Deer Creek the rotary screw trap was fished from 26 October 1998 through 31 January 1999. The trap was not fished from 1 February 1999 through 14 October 1999. Trapping was resumed on 15 October 1999 and continued through 30 June 2000. A total of 1,052, 1998 BY SRCS and FRCS fry, and 120, 1998 BY SRCS yearlings were trapped during these time periods (Table 8 and Appendix, Figures 22 and 23). Fry ranged in size from 31 to 41 mm FL and yearlings ranged in size from 73 to 158 mm FL. The first 1998 BY fry was captured on 25 November 1998. It is unknown when fry outmigration ended since the trap was removed in January 1999. The first yearling outmigrant was trapped on 16 October 1999. Yearlings continued to be captured in the trap through 23 April 2000.

For the 1998 BY outmigration sampling period in Deer Creek there were two periods of increased migration. The first peak occurred 17 January through 30 January 1999. Eighty-seven percent of the total trap catch for the fall outmigration period emigrated from Deer Creek (Appendix, Figures 24 and 25). Peak average weekly flow was 526 cfs and peak average weekly turbidity was 8 ntu's. From 23 January through 12 February 2000, 41% of the trap catch for the spring sampling period emigrated. Peak average weekly flow and turbidity was 688 cfs and 7 ntu's, respectively. There were two other peak flow periods when no increase in emigration was recorded. This occurred the week of 29 November 1998 and the month of February 2000. Peak flows were 1,000 cfs and 1,500 cfs, respectively. Two additional peak turbidity periods occurred the weeks of 29 November 1998 and 24 October 1999. Removal of the traps restricts our ability to document emigration during these peak events.

Water Temperatures at Emigration

The upper lethal water temperature level for emigrating salmon is determined in part by acclimation temperatures. Higher acclimation temperatures produce higher tolerated temperature until an upper lethal limit is reached. For fish acclimated to 60°F the upper lethal limit is 70°F and for fish acclimated to 70°F the upper lethal limit is 76.8°F (Orsi, 1971; in Boles, 1988). For the fall 1999 yearling SRCS outmigration period in Mill Creek water temperature did not exceed 61°F at the trap site, (unpublished data). Water temperature data has not been compiled for the spring 2000 outmigration period. In Deer Creek, water temperatures at the trap site did not exceed 63.6°F during fall 1999 yearling SRCS emigration periods. Maximum water temperatures for the spring 2000 outmigration period at the trap site did not exceed 65°F.

Adult salmon are entering and juveniles are emigrating from these creeks during the early fall and late spring when water temperatures and flows are sub-optimal. Therefore, management of water temperature and flow for the less thermally tolerant and larger adults should automatically afford thermal protection and passage for juveniles.

TABLE 8. Size statistics and bimonthly catch of spring-run and fall-run chinook salmon fry and spring-run chinook salmon yearlings captured in the Deer Creek rotary screw trap. Only 1998 brood year fish are reported.

| Capture Period | Mean FL (mm) | Standard Deviation | Range FL | | Total Number Captured |
|-------------------|---|-----------------------|----------|----------|--------------------------|
| | | | min (mm) | max (mm) | |
| 11/16/98-11/30/98 | 33 | 1 | 32 | 34 | 3 |
| 12/01/98-12/15/98 | 34 | 1.3 | 30 | 37 | 77 |
| 12/16/98-12/31/98 | 35 | 2.5 | 31 | 38 | 74 |
| 01/01/99-01/15/99 | 35 | 1.1 | 33 | 39 | 241 |
| 01/16/99-01/31/99 | 36 | 1.4 | 33 | 41 | 657 |
| 02/01/99-02/15/99 | no sampling February 1, 1999 through October 15, 1999 | | | | |
| 02/16/99-02/28/99 | | | | | |
| 03/01/99-03/15/99 | | | | | |
| 03/16/99-03/31/99 | | | | | |
| 04/01/99-04/15/99 | | | | | |
| 04/16/99-04/30/99 | | | | | |
| 05/01/99-05/15/99 | | | | | |
| 05/16/99-05/31/99 | | | | | |
| 06/01/99-06/15/99 | | | | | |
| 06/16/99-06/30/99 | | | | | |
| 07/01/99-07/15/99 | | | | | |
| 07/16/99-07/31/99 | | | | | |
| 08/01/99-08/15/99 | | | | | |
| 08/16/99-08/31/99 | | | | | |
| 09/01/99-09/15/99 | | | | | |
| 09/16/99-09/30/99 | | | | | |
| 10/01/99-10/15/99 | | | | | |
| 10/16/99-10/31/99 | 112 | 18.2 | 74 | 158 | 63 |
| 11/01/99-11/15/99 | 104 | 14.6 | 80 | 124 | 13 |
| 11/16/99-11/30/99 | 99 | 14.1 | 73 | 119 | 14 |
| 12/01/99-12/15/99 | | | | | 0 |
| 12/16/99-12/31/99 | 103 | 12.3 | 91 | 114 | 2 |
| 01/01/00-01/15/00 | 99 | | 99 | 99 | 1 |
| 01/16/00-01/31/00 | 103 | 11.3 | 87 | 125 | 13 |
| 02/01/00-02/15/00 | 85 | 0 | 85 | 85 | 2 |
| 02/16/00-02/29/00 | 119 | | 119 | 119 | 1 |
| 03/01/00-03/15/00 | 104 | 10.4 | 88 | 118 | 7 |
| 03/16/00-03/31/00 | 112 | | 112 | 112 | 1 |
| 04/01/00-04/15/00 | 100 | 2.1 | 98 | 101 | 2 |
| 04/16/00-04/30/00 | 104 | | 104 | 104 | 1 |

Condition Factors

One nonlethal method of determining the onset of smoltification in the field is to record the condition factor of outmigrants. (A condition factor, (K)), is a length-weight ratio calculated as: $K=W/L^3$, where W=weight in grams and L = length in millimeters. This ratio decreases as a fish loses body fat). Smolts weigh less and exhibit a lower length to weight ratio than do parr (Wedemeyer et. al. 1980). This season the measurement of the length to weight ratio was recorded throughout the season to determine if a drop in body weight occurred. In Mill Creek, the condition factor fluctuated between .00046 and .00029 (Appendix, Figure 26). The sample size is too small (n=24) to determine if a significant drop in body weight occurred during emigration. In Deer Creek the condition factor fluctuated between .00042 and .00037 (Appendix, Figure 27) with no apparent decrease in through time. The size selectivity of the screw trap may not represent the actual population of SRCS outmigrants. For example if the larger outmigrants or those fish in earlier stages of smoltification are able to avoid the trap, a drop in condition factors may not be apparent.

Real-time Delta Monitoring

Real-time monitoring of yearling SRCS emigration in Mill and Deer creeks is used in evaluating the distribution and movement of SRCS outmigrants through the Sacramento River and Sacramento-San Joaquin Delta. With the designation of SRCS as a candidate species under CESA in 1997, the Department and CALFED agencies established a SRCS Protection Plan (Spring-run Plan). The Spring-run Plan utilizes daily rotary screw trap data and measurement of environmental parameters (flow, turbidity), to identify when juvenile spring-run are likely entering the Delta. Once yearling salmon are detected in Mill, Deer and Butte creeks, operational responses are made to avoid or minimize the effects of the State Water Project and Central Valley Project facilities operations on juvenile salmon survival through the Delta.

RECOMMENDATIONS

Real-time monitoring of adult migration, water temperatures and water attraction flows in Mill and Deer creeks is needed for coordination between instream flows for fish and water management during periods of adult migration. The real-time monitoring of yearling spring-run chinook emigration should continue in order to provide data in evaluating salmon occurrence, distribution and movement through the Sacramento River and Sacramento-San Joaquin estuary. Emigration monitoring should be expanded to include the months of February through June when spring- and fall-run fry are migrating from each creek. Sacramento-San Joaquin flow standards and water project facilities operational criteria should be evaluated for these spring periods of SRCS fry outmigration.

Currently, the ability to identify the impacts of harvest on listed salmon, the potential of hybridization in habitats accessible to multiple runs of salmon, and impacts of water management on juvenile salmon is confounded by the inability to separate runs of chinook salmon based solely on phenotypical characteristics, life history differences and size criteria. Funding and staffing for genetic tissue and otolith collection and analysis on spring-run stocks has not been adequately coordinated. A comprehensive assessment of genetic population structure is needed in order to define a genetic baseline for stock identification.

There are no established minimum flow standards in Mill or Deer creeks to ensure adequate attraction and transport flow and temperatures from the Sacramento River upstream past diversions points in the valley floor. Currently there are no systematic surveys scheduled during the months of April thru June to monitor and document migration timing, fish passage, critical riffles, adult stranding or thermal barriers. There is a need to conduct systematic monitoring of the above listed parameters as a basis for establishing real-time minimum flow releases in each creek during the months of April-June. If it is determined that the instream flow requirements for migrating salmon exceeds available bypass flows below diversion points, alternate means of meeting irrigation demands will need to be identified.

The only spring-run population within the Central Valley being Coded Wire Tagged (CWT'ed) is Butte Creek. CWT returns are used in monitoring juvenile movement through the Sacramento San-Joaquin Delta, ocean movement and harvest, straying of adults and age structure of adult populations. A pilot CWT study was made in Mill and Deer creeks in 1995, but after extensive sampling effort, less than 1,000 fish were tagged. When population levels increase and at least 50,000 juveniles can be tagged in each creek, this project should resume a CWT'ing program.

In the Sacramento-San Joaquin River system the accepted method to separate captured juvenile chinook salmon into their respective runs is based on length criteria. This length criteria assumes that since the four runs of salmon spawn at different times, respective juveniles can be identified based on length, and length thru time can be estimated using a calculated growth curve (Fisher, 1992). This growth curve and length criteria were developed prior to our current knowledge on spring run life history and prior to current juvenile monitoring in spring run tributaries. As a result, the growth curve currently in use assumes an earlier than actual spawning time and an increased hatching and growth rate. Therefore, fish being trapped in rotary screw traps throughout the Central Valley are misidentified as true spring-run and true spring-run are being misidentified as winter- and late-fall run. In future brood year reports, Mill and Deer creek spring run will be compared to the current growth chart being used in the Central Valley. A new growth curve and length criteria should be developed for stream-type tributary SRCS.

ACKNOWLEDGMENTS

This project was assisted by: Lassen National Forests Almanor District Fisheries Crew in conducting salmon counts and spawner surveys, Department of Water Resources Northern District Water Quality Branch in collecting water temperature data, and Mill and Deer Creek Conservancies in obtaining access permission for field crews on private land. This investigation is funded through the Federal Sport Fish Restoration Act, Department of Fish and Game Preservation Fund and Proposition 99 Funding.

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Notes – DCID Strategy Meeting 10/10/16

DFW Region 1 office – Redding

Attendees:

Trout Unlimited: Matt Clifford

DFW: Curtis Milliron, Jason Roberts, Matt Johnson, Tricia Bratcher, Curt Babcock, Paige Uttley

Status report on the development of instream flow criteria/ objectives:

- DFW will release a technical report on instream flows any day now (currently undergoing final internal review). The report will discuss a range of possible flow criteria based on different widths of the stream meeting depth criteria for passage
- Approximately a month later, DFW will issue a flow recommendation based on the technical report. This will be issued below the Director level
- Early next year, the Director will issue a formal flow recommendation to the WB
- The WB will then begin process of adopting flow objective that balances the recommendation against other uses.
- WB process could be lengthy
- It is uncertain what implementation will look like, but expectation is that instream flow criteria will ultimately be incorporated into DCID & SVRIC water rights

In light of that summary, we discussed two alternative long-term strategies for helping DCID meet target instream flows:

(1) Wait for SWRCB to implement regulatory instream flow requirements, and use DWR (& NRCS?) ag efficiency funds to help DCID comply;

-or-

(2) Use fisheries restoration funds (primarily WCB Prop 1) in the near term to reduce diversions & dedicate water to instream flow

Advantage of #1 is that it saves restoration dollars. Disadvantages are that streamflow objectives may take many years to take effect (particularly if litigated), and we do not know exactly what they will look like.

Advantages of #2 are that WCB is under pressure to fund implementation projects that result in actual water instream. Disadvantages include that it would divert restoration dollars from other priorities, and that infrastructure fixes for DCID are looking very pricey (up to ~\$2 million/ cfs).

Consensus is that in the near term there is little harm in moving ahead with pilot projects under Option #1 above. Any water saved via projects will ultimately be credited to DCID in furtherance of meeting the streamflow requirements. TU is exploring a pilot ditch-to-pipe project on the section of the South Ditch just below the cemetery with John Edson and his son, and expect to have a rough cost estimate shortly.

Options for Instream Flow Augmentation Using Public Restoration Funds

We then discussed four basic alternatives for augmenting instream flow under Option #1:

- (1) Pursue ditch system upgrades and dedicate conserved water under §1707**
- (2) Replace surface diversion with groundwater, either permanently or via a seasonal GW exchange program**
- (3) Aquifer storage – divert surface water in the winter, store in GW, and use during irrigation season**
- (4) Purchase DCID water right and let DCID figure out what to do (e.g., switch to GW on its own, or fallow land, or both)**

Pros/ cons/ uncertainties of each option:

Option 1 – Ditch Efficiency Upgrades

Pros:

- Easy sell with DCID
- Low operational costs (no GW pumping)

Cons:

- Expensive – infrastructure costs are very high per cfs conserved
- Max. instream flow benefit 6-10 cfs

Uncertainties:

- Will Army Corps require mitigation for loss of “riparian” values lost by piping sections of ditch?

- Is any diverted water currently making it back to Deer Creek as return flow? (Need to know this for §1707)
- Will DCID agree to permanent dedication of saved water?
- Cost of infrastructure is high per cfs saved
- Appraisal of conserved water necessary to show cost effectiveness?
- Sunk costs – probably doesn't make sense to invest in infrastructure if the ultimate solution ends up being to get rid of diversion entirely –via water right purchase and/ or switch to GW

Option 2 – Groundwater conversion/ seasonal exchange

Pros:

- Significantly lower cost per cfs than ditch upgrades
- Higher potential flow benefits (up to ~ 30 cfs if replace all SW diversion)
- Flexible – could be implemented in conjunction w/ partial ditch upgrades; could be implemented for all or part of spring/summer/fall

Cons:

- Pumping costs may be sticking point with DCID
- Seasonal exchange would not address summer flow depletion

Uncertainties:

- SGMA issues – 2011 MND for the DWR exchange program addressed sustainability, but not assuming pumping would be all year/ every year
- Does DWR have sufficient info – how deep are aquifers? How fast is recharge?
- Need to drill additional wells?
- Pumping costs – is DCID willing to bear?
- What will DCID do with rate structure? Switching to per af would incentivize switch to GW

Option 3 – Seasonally Divert and Store Surface Water in Groundwater

Pros:

- Relatively low cost (similar to GW conversion, above)
- High potential benefits for spring/ summer/ fall instream flows

Cons:

- Feasibility uncertain (depends on finding suitable aquifer)

- Pumping costs

Uncertainties:

- Need to identify and characterize an aquifer with the necessary characteristics
- SGMA issues?
- Water right issues? (pre-'14 right status should help)

Option 4 - Purchase Water Right

Pros:

- Permanent
- Effective, particularly if acquire entire right
- Probably cost effective compared to infrastructure options

Cons:

- DCID politics – may be a non-starter

Uncertainties:

- Is DCID willing?
- Price – \$14 million(?) (cost of ditch/ pipe)
- Appraised value
- Can/ should water be sold downstream?

Uncertainties Common to All Alternatives:

All the above alternatives will require some form of §1707 transaction, and therefore involve the following uncertainties:

- Return flows – need to characterize how much (if any) water returns to Deer Creek under existing operations, where, and when
- Consumptive use (ET) – Have decent estimates from Davids & P&P reports
- Will need to handle SVRIC protests – possibly including litigation
- Will need to negotiate permanent arrangement w/ DCID through some combination of (1) mandatory §1707 dedication; (2) permissive §1707 coupled w/ long-term forbearance agreement; (3) binding instream flow regulations

Next Steps

- **DFW will reach out to the appropriate ACE staff to inquire about the riparian mitigation issue (WOTUS)**
- **TU will continue to develop pilot ditch-to-pipe project w/ DCID**
- **TU will follow up with TNC about any riparian easement issues**
- **TU will meet with Bill Ehorn of DWR to go over what is known about the groundwater hydrology & related issues (long-term sustainability of pumping, potential for aquifer storage, nature of existing return flows)**
- **TU will explore additional funding sources (NRCS, BOR, private, etc.)**



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TO: Paul Minasian
FROM: Gabriel Kopp and Doug Demko
DATE: July 28, 2014
SUBJECT: Review of Passage and Stream Conditions in lower Deer Creek

Unprecedented dry conditions over the course of multiple years have led to a challenging environment for water management in 2014. Conservation and prioritization efforts have resulted in difficult decisions to balance necessary environmental flows and integral water diversion for agriculture and livestock. Numerous streams have come under the scrutiny of the California Department of Fish and Wildlife (CDFW) and the State Water Resource Control Board (SWRCB). Deer Creek represents one of these streams. Deer Creek is a relatively smaller Central Valley stream with no water storage facilities, but three significant diversions. These diversions represent the only nodes of management by removing or allowing water to remain in the stream. Deer Creek supports Central Valley Steelhead and Spring Run Chinook salmon. All three diversion points lie in a migratory corridor, below the spawning reach for these species. Therefore, water kept in the stream primarily serves as a means of passage, but does not improve rearing conditions.

Current emergency regulations imposed by the SWRCB require that from October 1 to March 31, if adult steelhead are present, base flows of 50 cfs be maintained. In addition, from November 1 to June 30, if juvenile spring-run Chinook salmon or juvenile *O. mykiss* are present and adult salmon are *not* present, base flows of 20 cfs must be maintained. These regulations suggest that 20 cfs is considered a minimum passage flow by juvenile salmonids and 50 cfs for adults.

During the fall and early winter months, irrigators require diverted flows until seasonal precipitation begins. Regular precipitation may not occur until mid to late October. This makes minimum flow requirements in October and November especially critical. Current natural base flow (as of July 24, 2014) within Deer Creek is close to 60 cfs. Assuming the river would be of similar or slightly lower flow in October, regulations would allow only 10 cfs of diversion. Therefore, it is critical to determine what minimum flow in is biologically necessary for upstream and downstream passage and what measures or actions could possibly allow for lower base flows.

As a foundation for future negotiations for alternative flow and channel modifications to provide upstream and downstream passage, we addressed three questions:

- 1) Based on our May 17, 2014 field survey, how many potential passage impediments are there at flows under 50 cfs and where are they located?

- 2) Based on our field survey and aerial photographs, can we determine the base flow necessary for juvenile and adult passage at these locations?
- 3) What, if anything, can be done at these locations to modify the channel to improve passage at flows less than 50 cfs?

These questions are individually addressed below based on a recent field survey, available existing information, and professional judgment.

Based on our May 17, 2014 field survey, how many potential passage impediments are there at flows under 50 cfs and where are they located?

We surveyed lower Deer Creek from Stanford Vina Diversion (river mile or RM 4.5) to the confluence of the Sacramento River (RM 0.0) on May 17, 2014 to evaluate potential passage impediments at the existing flow (46-49 cfs). This surveyed reach represents what water remains in the channel between the lowest downstream diversion and the confluence of the Sacramento River and is the most critical reach for passage. The survey consisted of walking the reach and measuring wetted width, average depth, maximum depth, presence of a leaping pool, and overall water velocity (visually assessed not measured).

Multiple surveys at different low flows were not performed due to the current water conditions, time constraints, and challenges associated with controlling flow in Deer Creek (i.e. no dam control release). Although the flow ranged between 46-49 cfs at the time of our survey, we thoroughly reviewed areas that were suggestive of becoming passage issue points at even significantly lower flows. Broad and wide channels that evenly distribute flow and lack a leaping pool were areas of interest. These channel characteristics usually result in being the first areas to create passage challenges relative to other habitat in the river.

We identified six locations with characteristics (i.e. lack of depth/flow) that could impede upstream/downstream passage for salmonids, all between RM 2.7 and RM 4.5 (Stanford Vina Diversion; Figure 1). Additional detail for each site is presented in a summary table included as Appendix 1. All but two of the sites appeared to be readily passable at current and potentially lower flows near 20 cfs. Areas at RM 4.0 and 3.5 were considered to pose the greatest challenge and likely become the first areas to create passage issues during lower flow releases, while RM 2.7 would likely be the last site to become impassable.

Figure 1. Overview map of identified potential passage issue areas.



Based on our field survey and aerial photographs, can we determine the base flow necessary for juvenile and adult passage?

Assessing river conditions at lower flows than when surveyed required investigating other data sources. Aerial imagery collected over several years was obtained from Google Earth and allowed for us to evaluate whether the channel remained wetted at flows much lower than existed on our survey date. Dates on the aerial imagery collection were paired with historical flow monitoring data (California Data Exchange) to find numerous low flow examples. Discharge was represented from 6 to 49 cfs over four different years: 7-8 cfs (2010), 6-7 cfs (2012), 16-20 cfs (2013), and 46-49 cfs (2014). These aerial images were then compared with the two most challenging passage areas (RM 4.0 and 3.5) and the least challenging area (RM 2.7) based our May 17, 2014 survey data.

Shallow water and exposed rock reflect in aerial imagery, allowing for indications of passage conditions. Based on the reconnaissance-level of our survey, and the lack of depth and velocity data provided by the aerial photographs, we cannot precisely estimate the base level of flow required for successful upstream and downstream migration. However, we were surprised that the aerial photographs clearly show the entire river downstream of Stanford Vina Diversion (RM 0- RM 4.5) remains wetted at flows as low as 6 cfs. We were unable to assess flows lower than this to determine when the river no longer is wetted, but were able to confirm its state at 6 cfs.

The estimated potential for fish passage varied between sites based on the aerial imagery. Passage at RM 4.0 appears potentially feasible for adult and juvenile salmonids, even at lower flows approaching 10 cfs (Appendix 2, Table 1). The channel shape is narrower and constricted. Passage appeared to be restrictive for adult salmonids at RM 3.5 flow stages less than 46-49 cfs and likely juveniles below 20 cfs (Appendix 2, Table 2). The channel fans over a gravel bar, which spreads the flow evenly across a relatively broad width. At RM 2.7, aerial imagery remained dark with minimal shallow water reflection down to 7-8 cfs, suggesting passage may be possible below 10 cfs for adult and juvenile salmonids (Appendix 2, Table 3). The area began to show shallow water light reflections at 6-7 cfs. Passage determinations were based on professional judgment and could not be definitively determined without additional on-the-ground field measurements at different flows.

Overall, it appeared all sites but RM 3.5 would be passable for adult and juvenile salmonids at flows less than 50 cfs.

What, if anything, can be done at these locations to modify the channel to improve passage at flows less than 50 cfs?

The channel characteristics during low flows in Deer Creek offer the potential to make channel modifications in a timely manner with reasonable effort. All of the six identified areas posing potential fish passage issues at lower flows could potentially be modified to allow for passage of adult and juvenile salmon potentially at flows approaching 20 cfs. To conduct these modifications two approaches are suggested for consideration.

The first approach is simplistic, commonly used, and can be readily implemented with minimal impact. Each channel location suffers from flow being broadly spread over a wide even channel. The broad flow reduces depth and negates passage. Constricting the flow without significantly modifying the channel may increase the depth and provide sufficient flow for passage. Locally available moderate sized rock (i.e. stream cobble) can be taken from the channel or shoreline and stacked by hand in a downstream v-shape to channel lower flows at critical locations. These modifications are also referred to as simplified rock weirs. Examples of streams utilizing these modifications are presented in Figure 2. Constricting the channel down to 3 to 4 feet of width may result in 1 to 2 feet of depth. These stacks of rock will sustain lower flows and possibly provide suitable passage conditions at very low flows. Rock structures would then likely be displaced during seasonal winter flow events, allowing for the river to assume a more natural shape and appearance. This approach is cost effective, minimally disruptive, and effective during very low flows. Generally this resolution would need to be repeated if similar conditions were presented in the following year.

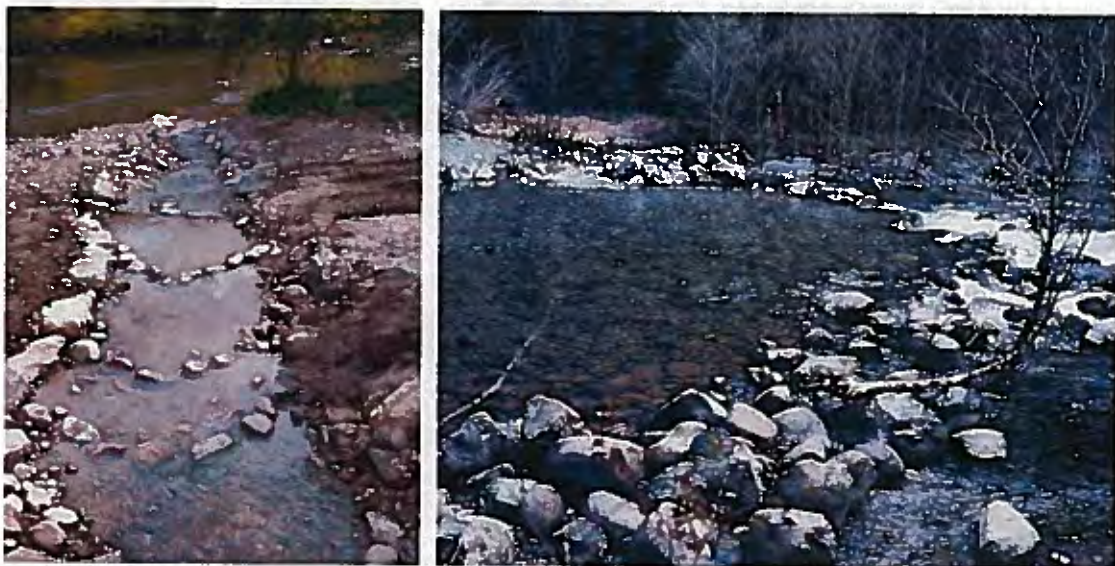





Figure 2. Examples of local cobble used to constrict flow and provide improved fish passage conditions in both small and moderate sized streams. Left picture: Spruce Brook, Connecticut, Department of Energy and Environmental Protection. Right picture: Hurdygurdy Creek, California, USDA.




The second approach would require heavy machinery to excavate a low flow channel at the identified critical passage points in the river. The low flow channel would similarly focus all flow in the stream into a narrower channel and provide passage at substantially lower base flows. The six identified areas occur in readily accessible locations that would feasibly be accessed by heavy equipment. Some locations, such as RM 3.5 may not be as conducive to the first approach and possibly better suited for channel modification or a blending of both approaches. Each location would need to be addressed on a case-by-case basis. Given the small size and scope of the project, the excavation activity duration would be brief and the effect of the activity likely minimal. Possible short-term effects would include increased turbidity and noise. Unlike the first approach, this effort would likely result in a longer-term solution that would either require minimal or no additional effort if another dry water year were to occur.

The overall conclusion from this review is that there is the possibility to provide suitable passage for all lifestages at flows significantly less than 50 cfs. Minimal activity at select locations could greatly improve passage conditions and allow for juvenile and adult salmonids to move freely at flows possibly as low as 15 to 20 cfs. Implementing these channel revisions and following up with additional monitoring would provide an adaptive pathway forward. This adaptive approach would allow for lower base flows, but also ensure that sufficient flow for adult and juvenile salmonid passage would be present. Considering and readily implementing these activities appears reasonable and merited, given the overall challenging conditions, difficult water management decisions, and need for maximized water usage.

Appendix 1

Summary of Areas on Deer Creek from the Sacramento River Confluence to Stanford Vina Dam That May Create Passage Issues at Low Flows

| Location (River Miles) | Channel Features at 49 cfs | Field Researcher Notes | Image |
|---------------------------|---|---|--|
| RM 2.7 | Channel width is less than 20 yards across with a depth ranging up to 1 foot in pockets. The location appeared passable at current flow by adult or juvenile salmonids. | Location is proximally below the Highway 99 bridge crossing. Not a critical location, but may become an area to monitor at very low base flows. |  |
| RM 2.9 | Channel width is less than 14 yards at the narrowest point. Water depth increased near the far shoreline to nearly 1 foot. The location appeared passable at current flow by adult or juvenile salmonids. | Location is proximally above the Highway 99 bridge crossing. Likely not an issue at most flows, but may become a challenging area at very low flow. |  |
| RM 3.1 | Channel width is less than 15 yards on average and maintains a water depth of 0.5 to 0.8 feet throughout. The location appeared passable at current flow by adult or juvenile salmonids. | Area is moderately susceptible to lower flows and would likely require modification at moderate to very low flows. |  |

| Location (River Miles) | Channel Features at 49 cfs | Field Researcher Notes | Image |
|---------------------------|--|---|--|
| RM 3.4 | Channel width is less than 10 yards across. Water depth ranged from 0.5 to 0.75 feet. The location appeared passable at current flow by adult or juvenile salmonids. | Area is moderately susceptible to lower flows and would likely require modification at very low flows. There is a slot at the right of the image that provides the greatest depth and could be readily deepened to improve passage conditions. |  |
| RM 3.5 | Channel width was greater than 30 yards. Depth was less than 0.5 feet overall. Gravel bar width extends for several yards. The location appeared minimally passable at current flow for adult salmonids and reasonably passable for juveniles. | Critical area likely susceptible to passage issues more readily than other sites. Flow could be readily focused to immediately improve passage by mild channel excavation. The broad gravel bar width and length appears to be the primary issue. |  |
| RM 4.0 | Channel width was less than 10 to 15 yards. Depth was generally 0.5 feet across the channel. The location appeared passable at current flow by adult or juvenile salmonids. | Area is moderately susceptible to lower flows and would likely require modification at moderate to very low flows. |  |

Appendix 2

Historic Aerial Imagery Assessment at Passage Issue Areas During Low Flow Conditions

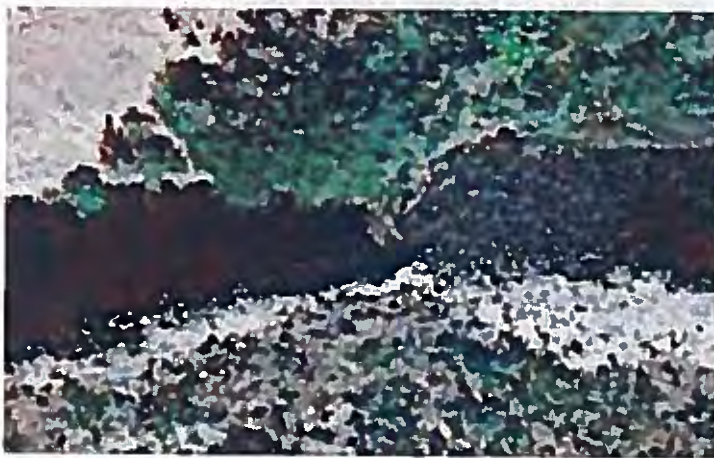
Table 1. Challenging passage area at RM 4.0 during four different flow conditions. Aerial photos are from Google Earth.



August 1, 2010 (7-8 cfs)



August 27, 2013 (16-20 cfs)



August 18, 2012 (6-7 cfs)



May 17, 2014 (46-49 cfs)

Table 2. Challenging passage area at RM 3.5 during four different flow conditions. Aerial photos are from Google Earth.



August 1, 2010 (7-8 cfs)



August 27, 2013 (16-20 cfs)



August 18, 2012 (6-7 cfs)



May 17, 2014 (46-49 cfs)

Table 3. Passage issue area at RM 2.7 that was identified as likely the last to become impassable of all identified sites.



August 1, 2010 (7-8 cfs)



August 27, 2013 (16-20 cfs)



August 18, 2012 (6-7 cfs)



May 17, 2014 (46-49 cfs)

State of California
Department of Fish and Wildlife

Memorandum

Date: May 5, 2015

To: Jason Roberts
Fisheries Supervisor
Department of Fish and Wildlife

From: Matthew R Johnson
Environmental Scientist

Subject: Lower Deer Creek (Tehama County) Salmonid Snorkel Investigation May 4, 2015

A snorkel survey was conducted on lower Deer Creek May 4, 2015 by Red Bluff Fisheries Office staff members Patrick Jarrett and Spencer Gutenberger to determine presence/absence and relative abundance of adult and juvenile Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*). The survey started at Stanford Vina irrigation Company Dam (RM 5) and ended at the Highway 99 bridge crossing (RM 3), a distance of 2 miles. Water temperature recorded at the lower Deer Creek stream gage (CDEC ID: DVD) at start of survey (10:00 am) was 66.1 F. Water temperature at end of survey (2:00 pm) was 71.7 F. Stream discharge recorded at the lower Deer Creek stream gage (CDEC ID: DVD) was 55 cfs at start and 50 cfs at end of survey. A total of 90 juvenile Chinook salmon were counted in the survey area. A total of 18 juvenile steelhead were counted in the survey area. Zero adult Chinook salmon or steelhead were observed in the survey area.

State of California
Department of Fish and Wildlife

Memorandum

Date: April 24, 2015

To: Jason Roberts
Fisheries Supervisor
Department of Fish and Wildlife

From: Matthew R Johnson
Environmental Scientist

Subject: Lower Deer Creek (Tehama County) Salmonid Snorkel Investigation April 23, 2015

A snorkel survey was conducted on lower Deer Creek April 23, 2015 by Red Bluff Fisheries Office staff members Ryan Revnak and Spencer Gutenberger to determine presence/absence and relative abundance of adult and juvenile Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*). The survey started at Stanford Vina irrigation Company Dam (RM 5) and ended at the Highway 99 bridge crossing (RM 3), a distance of 2 miles. Water temperature recorded at the lower Deer Creek stream gage (CDEC ID: DVD) at start of survey (10:00 am) was 63.9 F. Water temperature at end of survey (1:00 pm) was 67.9 F. Stream discharge recorded at the lower Deer Creek stream gage (CDEC ID: DVD) was 52 cfs at start and 53 cfs at end of survey. A total of 235 juvenile Chinook salmon were counted in the survey area. A total of 13 juvenile steelhead were counted in the survey area. One adult spring-run Chinook salmon was observed in the survey area.

EXHIBIT A-1



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Region 1 - Northern
601 Locust Street
Redding, CA 96001
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



May 8, 2018

Paul R. Minasian, Senior Partner
Minasian, Meith, Soares, Sexton & Cooper, LLP
PO Box 1679
Oroville, CA 95965-1679

Subject: Channel Clearing—Deer Creek, Tehama County

Dear Mr. Minasian:

This letter responds to your letter dated February 26, 2018, regarding channel clearing in Deer Creek, Tehama County. The Department of Fish and Wildlife (Department) is also considering the channel modifications to lower Deer Creek presented in your August 2014 letter, and the 2014 letter report from FISHBIO.

These three letters propose the trenching of shallow riffle segments of the lower Deer Creek channel at numerous locations in order to provide favorable fish passage conditions with instream flows as low as 5-10 cfs. From the Department's perspective, this approach has the potential to cause significant adverse environmental impacts, including removal of riparian vegetation, draining of pools, increased channel simplification, increased water temperatures, and impacts from heavy equipment access and use.

The Department has concerns with potential impacts riffle trenching would have on salmonid spawning and critical juvenile rearing habitat in lower Deer Creek. Lower Deer Creek provides spawning habitat for fall- and late-fall-run Chinook Salmon (*Oncorhynchus tshawytscha*) which are both California Species of Special Concern. Additionally, lower Deer Creek provides critical rearing habitat for State and federally Threatened spring-run Chinook Salmon and federally Threatened Central Valley steelhead, as well as suitable habitat for other important native fish species including Pacific Lamprey and Hardhead. While the letters assert that trenching shallow riffles would improve fish passage, the proposed actions lack substantial detail, design references, and hydraulic analysis which makes it difficult for the Department to evaluate potential significant adverse environmental impacts as well as the likelihood of successfully improving fish passage.

Your February 2018 letter also suggests the Department has history of modifying the channel of lower Deer Creek to improve fish passage during previous droughts. However, the Department has no record of conducting these activities. Historic channel modification in lower Deer Creek likely refers to the Department of Water Resource's (DWR) flood control project and activities conducted by DWR. The preceding concerns represent a brief summary of the Department's concerns with your proposal to modify

lower Deer Creek's channel. A comprehensive review of proposed channel modifications detailed in your 2014 letter and FISHBIO's 2014 letter was completed in 2015 by Mark G. Smelser, Regional Engineering Geologist. This memo is attached for reference.

Fish and Game Code (FGC) section 1602 requires any entity (defined as any person, State or local government agency, or public utility) to notify the Department before beginning any activity that will do one or more of the following:

- Substantially obstruct or divert the natural flow of any river, stream, or lake;
- Substantially change or use any material from the bed, channel, or bank of any river, stream, or lake;
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

In the event of emergency work, FGC section 1610 exempts certain types of emergency work from the notification requirement in FGC section 1602. While notification is not required before beginning emergency work, entities must notify the Department in writing within 14 days after beginning the work. Emergency means:

"a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate the loss of, or damage to, life, health, property, or essential public services. 'Emergency' includes such occurrences as fire, flood, earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage." (Public Resources Code [PRC] § 21060.3)

Typical emergency projects have been immediate actions conducted during or immediately after an event to repair, in kind, a structure or facility within the entity's right-of-way. In some instances, emergency actions can raise the need for remediation afterwards to restore conditions for fish, wildlife, and plant resources.

The Department does not concur with your assertion that the proposal to construct a low flow channel through critical riffles constitutes an emergency pursuant to FGC section 1610 and PRC section 21060.3. As stated in your letter, a similar project for a low-flow channel was considered in 2014. Your letter, however, does not indicate what, if any, steps were taken following the 2014 proposal to formalize the project description and obtain necessary agency approvals, including, but not limited to, a Lake and Streambed Alteration Agreement (LSAA). A seasonal decline in stream flow as well as variable annual precipitation are not generally considered to be sudden or unexpected occurrences, but rather regular hydrologic fluctuations that should be planned for well in advance. The Department advises project proponents to plan any necessary work to avoid emergencies and consult with Department staff early so staff may identify ways to minimize impacts to resources.

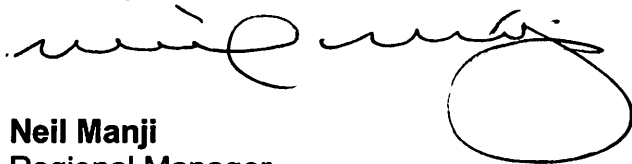
Paul R. Minasian, Senior Partner
Minasian, Meith, Soares, Sexton & Cooper, LLP
May 8, 2018
Page 3

At this time, the Department requests that any proposal to alter the channel configuration of Deer Creek be submitted to the Department pursuant to the notification requirements in FGC section 1602. In addition, the Department requests that any proposed modifications follow restoration guidelines described in the *California Salmonid Stream Habitat Restoration Manual*. As noted previously, the proposal to create a low-flow channel within Deer Creek may have significant adverse impacts to fish and wildlife that may need to be addressed within a LSAA. Please note that the Department must comply with the California Environmental Quality Act (CEQA) (PRC § 21000, et seq.) before it may issue a final LSAA. A CEQA document for the project should fully disclose potential project impacts to any special-status species impacted by the project and provide adequate avoidance, minimization, mitigation, monitoring, and reporting measures for minimizing impacts to those species.

The Department is committed to protecting aquatic resources in Deer Creek while at the same time recognizes the beneficial use of Deer Creek water for agriculture. The lower Deer Creek trenching proposal does not adequately identify the engineering specifications needed to fully address the potential adverse impacts to critical Central Valley spring-run Chinook Salmon, Central Valley steelhead, and other salmonid habitat in lower Deer Creek.

The Department has and continues to support any local and cooperative solutions which would lead to a long-term solution to balancing the needs of fish and agriculture in lower Deer Creek, including the purchasing of water rights, development of wells and groundwater recharge, and upgrades to water conveyance facilities.

Sincerely,



Neil Manji
Regional Manager

Attachment

ec: Page 4

Literature Cited: Page 4

Paul R. Minasian, Senior Partner
Minasian, Meith, Soares, Sexton & Cooper, LLP
May 8, 2018
Page 4

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Literature Cited

CALIFORNIA SALMONID STREAM HABITAT RESTORATION MANUAL, FOURTH EDITION. State of California, The Resources Agency, California Department of Fish and Game, Wildlife and Fisheries Division.

Smelser, Mark G. December 1, 2015. Review of Proposed Channel Modifications of Deer Creek, Tehama County, California. State of California Department of Fish and Wildlife memorandum.

EXHIBIT B

**MINASIAN, MEITH,
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COOPER, LLP**

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February 21, 2020

State Water Resources Control Board:

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Doreen D'Adamo, Vice-Chair
Tam M. Doduc, Member
Sean Maguire, Member
Laurel Firestone, Member
1001 I Street
Sacramento, CA 95814

National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

California Department of Fish and Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090

Re: Channel Clearing – Deer Creek, Tehama County

Ladies and Gentlemen,

As of today, February 20, 2018, dry conditions are currently prevailing across California and it appears we are entering into another drought, if not already in one. Droughts are a regular occurrence in California and history commands that they be expected and planned for with proactive competence rather than responded to with hysteria and the bumbling despotism inherent of “emergency” atmospheres. Thus, it is an appropriate time to develop a *constitutional* plan for Deer Creek in Tehama County for the spring of 2020 if dry conditions continue.

To: State Water Resources Control Board, National Marine Fisheries Service, California Department of Fish and Wildlife
Re: Channel Clearing -- Deer Creek, Tehama County
Date: February 21, 2020
Page 2

1. Low-Flow Channel.

Your agencies have expressed concerns regarding the conditions for salmon and steelhead conditions in Deer Creek during dry periods. We wish to inform you that Stanford Vina Ranch Irrigation Company is eager to work with you to clear a “low-flow” channel for fish passage as occurred in the droughts of previous years before the SWRCB and California Department of Fish and Wildlife became enamored with inverse condemnation under the label of “waste and unreasonable use.” Such a clearing and removal of blockages is a physical solution to create flow and temperature conditions that enhance salmon and steelhead conditions in dry years. The attached documents detail which riffles will be modified and confirms that the project can create favorable fish conditions with instream flows of 5-10 CFS.

We are eager to hear your views of which riffles are most critical to clearing of the low-flow channel. The aerial photographs attached show a fully flowing stream in July of 2011 with markers for potential areas where a backhoed low-flow channel of approximately 1-2 feet deep and 3 feet wide could be cleared and excavated. Also attached are photographs taken in 2014 showing locations taken from ground-level where FishBio determined excavation would be valuable. We estimate ten (10) potential areas where excavation would be performed and, using an estimate of 8-10 feet per area, approximately 500 cubic yards of material may be excavated to create the higher flows.

This physical solution is simple to implement, and we urge you to develop such a clearing and excavation process for the channel for this spring. Obviously, there will have been channel changes since the aeriels and study attached, but these changes will be minor and the plan suggested will be clear.

If you are inclined to respond to this correspondence by directing Stanford Vina or other Deer Creek water users to file an application for a streambed alteration permit, and you will consider the low-flow channel proposal through that process, we would remind that that such a response is equivalent to refusing to implement the low-flow channel. It is not possible to apply for and to receive a streambed alteration permit prior the spring fishery migration period. Such applications take many months to process and, if deemed acceptable, to finalize into a streambed alteration agreement. The conditions routinely imposed on such permits would also make it infeasible to carry out the project even if a permit was granted. Your agencies have made the process of securing a streambed alteration permit so costly and difficult that directing Stanford Vina and other water users to file for a streambed alteration permit here would be the equivalent of prohibiting the proposed low-flow channel and would in and of itself be a violation of the California and Federal Endangered Species Act by ensuring that protected fishery resources will lack enhanced passage conditions this spring. Nor is it the burden of local water users to secure permits for the project of your agencies. While Stanford Vina and other Deer Creek water users are willing to join your agencies in an application for such permits and are willing to share the prodigious fees imposed on such applications, this is a project of your agencies to enhance fishery passage conditions; it is not the project of Stanford Vina or other water users, and it is not their burden to apply for or pay for permits to execute it.

If you are inclined to refrain from pursuing the proposed low-flow channel, or wish to create an appearance of responding but do not intend to actually develop the channel in an

expedient fashion, please consider how you will explain to a court why this feasible physical solution was not pursued to implement the enhanced fishery migration conditions your agencies deem so necessary and why you instead chose to confiscate the water of local interests without compensation or an evidentiary hearing and at severe cost to the humans who rely on it.

2. Cooperation From Your Agencies.

We ask that you take a series of reasonable and feasible steps to get this done. First, we ask that you exercise your lawful authority to suspend the California Environmental Quality Act's ("CEQA") application to the low-flow clearing and channel reinstatement. Public Resources Code Section 21080(b) of CEQA states: "This division does not apply to any of the following activities...Specific actions necessary to prevent or mitigate an emergency." Second, we ask that you exercise your lawful authority to declare your determination with ours under Fish and Game Code section 1610 that an emergency will exist. That provision will allow work in the streambed to occur without a permit in emergency circumstances. (Fish and Game Code § 1610.) Section 1610 states, "Except as provided in subdivision (b) this chapter does not apply to any of the following: (1) immediate emergency work necessary to protect life or property."

These emergency exceptions can be invoked immediately to allow the low-flow channel to proceed. There is no requirement that the Governor declare an emergency. The CEQA and Fish and Game Code exceptions can be invoked, regardless of whether the Governor declares an emergency. Invocation of the emergency exceptions is appropriate here. The low-flow channel is necessary to protect Deer Creek fish and the low-flow channel will not get done in a timely manner unless you invoke the emergency exceptions of CEQA and the Fish and Game Code.

3. Failure to Allow the Physical Solution Low-Flow Channel Will be an Admission.

We are asking for you to exercise your lawful authority to get this physical solution done. If your agencies fail to facilitate the construction of the low-flow channel that would help fish with relatively little water, and instead issue regulations under the guise of "emergency" that confiscates the water of Deer Creek landowners for instream flows, it will be an admission that your true objective is to create a public instream flow project without compensating Deer Creek landowners for the taking of their water and for converting their farmland into dryland cropland.

Your apparent goal is that you do not want any fish to "drag their bellies over gravel bars" or be delayed in their upstream migration on Deer Creek – ordinary features of the natural selection process in a dry year. If this goal is accomplished by suspending water rights -- real property rights -- and prohibiting diversion that occurred uninterrupted for over 100 years, including a number of drought years, then you will be executing a public instream flow project requiring an evidentiary hearing and compensation.

Numerous courts have required physical solutions when considering competing uses of water. Some of your agencies refuse to consider any alternatives to accomplishing their fish passage project other than "more flows" and "more water." By refusing to consider physical solution of a low-flow channel to facilitate fish passage, your agencies will create the very "emergency conditions" invoked to take the water of Deer Creek landowners. This is indefensible.

By failing to allow the physical solution of a low-flow channel, your agencies – most prominently the State Water Resources Control Board (“SWRCB”) – will be demonstrating to a Court that your true objective is to utilize sequential emergency declarations to compel a few rural landowners to pay for a public instream flow project without evidentiary hearing, compensation, or any form of due process. If the water for a few rural landowners is to be taken for what is deemed to be a public purpose of greater importance than food production and rural livelihoods, and your agencies and the SWRCB do not wish to consider the low-flow channel a physical solution, then an evidentiary hearing must be held and the basis for that determination must be made, including the landowners’ right to cross-examine any witnesses and permit evidence in opposition to the rejection of this physical solution which conserves water and the fish, and compensation must be awarded for the water and real property taken and for the farmland converted into dry land.

4. A Low-Flow Channel is Required to Help Fish.

A low-flow channel with water flows tailored to the channel capacity is the only appropriate mechanism for improving Deer Creek fishery conditions if dry conditions persist. Confiscating the water rights of Deer Creek landowners and throwing their water down the creek will not benefit salmon and steelhead. Temperature and riffle fish passage conditions perfect for predation and stress of the fish may be lethal for salmon and steelhead under even the highest instream flow levels of dry years. Without a low flow channel through extensive riffle areas, instream flows spread across the streambed resulting in hot and shallow water conditions. Maximum tolerable temperatures for adult spring run salmon is approximately 65 degrees. (CDFW 2001 Spring Run Salmon Report for Deer and Mill Creek, Collen Harvey Arrison, p. 4.) Attached are actual 2014 temperature readings for the water at the USGS gauge located above both the Deer Creek Irrigation District and Stanford Vina Ranch Irrigation Company dams. These temperature readings are taken some five (5) miles above the Sacramento River. Obviously, there is substantial additional warming that occurs in the five (5) miles between the USGS gauge and the confluence of Deer Creek and the Sacramento River. These temperature readings confirm that the water temperature rises by the May and June adult upstream migration period to levels which stress salmon and steelhead. Without a low-flow channel, water sent down Deer Creek simply spreads across the shallow channel, warms unnecessarily, and bakes the salmon and steelhead. Further, the shallow water conditions exacerbate predation problems with salmon and steelhead having little chance of avoiding predators – a problem that low-flow channels mitigate through increased depth and variability in creekbed characteristics.

If you question these statements we can only urge you to hold the evidentiary hearing that is required under the constitution and which there is ample time and opportunity to conduct so that that truth and the facts surrounding Deer Creek hydrology, fishery conditions, and water rights can be presented through the admission of evidence and cross-examination of witnesses. Doing so will allow your agencies to make informed decisions in achieving your purported goals of helping fish while not despotically devastating the people of Deer Creek.

5. Condemnation

Although clearing the low-flow channel approach was utilized in previous drought years and is the only means of actually helping salmon and steelhead, members of your respective agencies have indicated views that no proactive action of this nature is necessary, and instead the water and water rights of Deer Creek landowners (and those of other Tehama County streams) can simply be confiscated if dry conditions persist. We remind you that Constitutional protections require an evidentiary hearing and compensation if this approach is taken, and this advance notice gives adequate time for you to schedule hearings and make deposit of funds under eminent domain statutes. And although we disapprove of this approach and reserve all rights of protest, we are willing to work cooperatively with your agencies to facilitate the issuance of condemnation notices to water right holders and to participate in an efficient and effective evidentiary hearing proceeding and system for deposit of the severance damages and value of the water rights stripped from the farmland and its owners for the periods you specify that the State requests its use for a more valuable public program.

It would be inexcusable to confiscate the water and water rights of landowners this spring without an evidentiary hearing and deposit with the Superior Court of the estimated compensation. You have several months to do so before the spring and there are only about sixteen (16) water right holders on Deer Creek. If you intend to take their water then certainly you are capable of holding an evidentiary hearing before doing so and finding the monies to compensate them. It would be inappropriate to do nothing until the spring and then, with the “emergency” atmosphere and irrational hysteria typical to California drought conditions, to opportunistically confiscate the water and water rights of these sixteen (16) water right holders without compensation or evidentiary hearing.

Constitutional protections require that the water rights of Deer Creek landowners only be taken after an evidentiary hearing and compensation. As you know, the water rights of Deer Creek landowners are real property rights protected by the United States and California Constitutions. (*U.S. v. Gerlach Live Stock Co.* (1950) 339 U.S. 725, 727-30, 752-56; *Dugan v. Rank* (1963) 372 U.S. 609, 623-626.) “As such, they cannot be infringed by others or taken by government action without due process and just compensation.” (*United States v. SWRCB* (1986) 182 Cal.App.3d 82, 101.) The real property nature of California water rights endures regardless of fishery concerns or requirements. (*Casitas Mun. Water Dist. v. United States* (2008) 543 F.3d 1276, 1279-82, 1296; *Tulare Lake Basin Water Storage District v. United States* (2001) 49 Fed.Cl.313, 318-21.) Assertions of “emergency” do not excuse constitutional protections for water rights as real property rights. (*Los Osos Valley Associates v. City of San Luis Obispo* (1994) 30 Cal.App.4th 1670; *Odello Brothers v. County of Monterey* (1998) 63 Cal.App.4th 778.)

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a. Condemnation Funds Are Available.

Condemnation funds are available if you intend to confiscate the water of Deer Creek landowner this spring. The most obvious source of condemnation monies, in addition to the budgets of your agencies, is the \$7.5 billion made available by Proposition 1 of 2014 -- most of which is available for appropriation. Please see the attached notes from a November 2016 CDFW meeting in which the use of Proposition 1 funds to purchase water from water right holders was proposed. (CDFW Meeting 10/10/16.) Little money will be required for condemnation. While the water confiscated is of tremendous importance to Deer Creek water right holders -- most of whom rely on it as their sole source of irrigation water for their crops and cows -- it is not a tremendous amount in volume or value in the context of California hydrology or your budgets and available bond monies. At approximately \$700-900 per acre foot for water taken in the spring, it would be relatively inexpensive for your agencies to compensate Deer Creek water right holders, although these figures are only estimates.

Another option is to purchase well capacity from the Deer Creek landowners that do have groundwater wells and to pay those landowners to utilize their wells and to forego their surface water diversions from Deer Creek. This will result in less surface water diversions and more Deer Creek water available for your use. Alternatively, you can pay private well owners to pump their well water into Deer Creek. This will result in more water available in Deer Creek for use by your agencies as you see fit. Such well pumping agreements have been developed in the past and can be organized again with some initiative by your agencies.

6. Deer Creek Water Rights Are Critical to Deer Creek Landowners.

The importance of Deer Creek water rights and water to the landowners cannot be overstated and we urge you to keep this in mind. The water is the primary source of irrigation water -- and in many cases the only source of irrigation water - for the people of the Vina and Deer Creek areas. These individuals rely on the water to sustain their cattle herds, orchards, alfalfa, and other crops. Confiscating their water in the critical spring irrigation periods has devastating consequences for them: crops are stressed, herds are culled, and lands must be fallowed. Whether used for a cow or a walnut tree, a grapevine or alfalfa field, the people of Deer Creek and Vina depend on their water rights and water for their livelihoods. These people represent the diverse spectrum of individuals who live in rural America; from third generation cattlemen and cattlegirl, to the monks of the Abbey of New Clairvaux who depend on the water to sustain their grapes - a critical source of income for their monastery.

There is no meaningful substitute source of irrigation water for these people. Groundwater is not reliable in the area. Many landowners do not have wells or the funds to drill them, or the landowners that do have wells are pumping from an unreliable aquifer.

It is imperative that your agencies take proactive action now to prevent a disaster for these people. It is unacceptable to confiscate the water and water rights of a relatively small number of rural citizens so that certain agency desires for an instream flow project on Deer Creek can be realized without compensation or an evidentiary hearing, and without actually helping fish.

7. Deer Creek Individuals Should Not Be Forced to Fund a Government Project.

For decades your agencies have sought greater flows for a fishery project on Deer Creek. Your agencies have expended a great deal of energy and public monies studying the issue, and you have even engaged in half efforts to purchase well pumping capacity from landowners, to drill your own wells, and to purchase surface water rights from landowners. However, your agencies have failed to follow through with a long-term project that satisfies your desires for greater in-stream flows. It is inappropriate with potential dry conditions this spring to compel a few rural Tehama County landowners to fund and effectuate the same project your agencies never followed through with.

The attached notes from a November 2016 CDFW meeting indicate that a deliberate choice has been made to not complete a long-term instream flow project through the purchase of water rights or the development of new supplies through groundwater recharge or ditch efficiency upgrades, and instead at least CDFW has decided to rely on the SWRCB to take water from Deer Creek water right holders because in CDFW's view the SWRCB may do so without compensation. The November 2016 notes from the CDFW meeting state:

“In light of that summary, we discussed two alternative long-term strategies for helping DCID [Deer Creek Irrigation District] meet target instream flows:

- (1) Wait for SWRCB to implement regulatory instream flow requirements, and use DWR (& MRCS?) ag efficiency funds to help DCID comply;

-or-

- (2) Use fisheries restoration funds (primarily WCB Prop 1) in the near term to reduce diversions & dedicate water to instream flows”

Advantage of #1 is that it saves restoration dollars.”

(Notes-DCID Strategy Meeting 10/10/16.)

One could not imagine better evidence that your agencies have made a deliberate choice to not develop a long-term instream flow project and instead have chosen to “wait” because the SWRCB will take the water from the people of Deer Creek without compensation.

Examples of other past efforts to propose and develop the instream flow project on Deer Creek include but are not limited to: CDFW 1996 Steelhead Restoration and Management Plan for California; “Deer Creek Pulse Flows”, Matt Johnson and Patricia Bratcher, 2013; CDFW “Chinook Salmon Population of the Upper Sacramento River Basin 2012,” Matt Johnson and Douglas Killam; CDFW “Restoring Central Valley Streams: A Plan for Action”, 1993; CDFW “Juvenile Spring-Run Chinook Salmon Emergency in Deer And Mill Creeks, Tehama County,” Colleen Harvey Arrison, 2001; “CalFed Ecosystem Restoration Program Plan 2000, Chinook Salmon on Deer Creek,” and CDFW “Status of Actions to Restore Central Valley Spring-Run Chinook Salmon,” 1996.

To: State Water Resources Control Board, National Marine Fisheries Service, California Department of Fish and Wildlife
Re: Channel Clearing -- Deer Creek, Tehama County
Date: February 21, 2020
Page 8

This is by no means an exhaustive list of studies and proposals by your agencies regarding greater in stream flow on Deer Creek. We only hope it provides insight into how long your agencies have sought greater instream flows on Deer Creek without following through with a meaningful project.

Conclusion

Your agencies must take proactive measures now. A low-flow channel is the physical solution to your fish passage desires and will serve all interests while minimizing hardships if dry conditions continue. But it is not appropriate to do nothing, and then, if dry conditions continue, to opportunistically assert "emergency" to violate the constitutional protections of the rural landowners who rely on their Deer Creek water rights to sustain their crops, herds, and their livelihoods.

Very truly yours,

MINASIAN, MEITH,
SOARES, SEXTON & COOPER, LLP

By: 

PAUL R. MINASIAN

By: 

JACKSON A. MINASIAN

EXHIBIT C

**MINASIAN, MEITH,
SOARES, SEXTON &
COOPER, LLP**

ATTORNEYS AT LAW
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WILLIAM H. SPRUANCE,
of counsel

MICHAEL V. SEXTON,
of counsel

March 11, 2021

Via Certified Mail and Email

State Water Resources Control Board:

E. Joaquin Esquivel, Chair
Doreen D'Adamo, Vice-Chair
Tam M. Doduc, Member
Sean Maguire, Member
Laurel Firestone, Member
1001 I Street
Sacramento, CA 95814

National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

California Department of Fish and Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090

Re: Channel Clearing – Deer Creek, Tehama County

Ladies and Gentlemen,

As of today, March 11, 2021, dry conditions are currently prevailing across California and it appears we are entering into another drought, if not already in one. Droughts are a regular occurrence in California and history commands that they be expected and planned for with proactive competence rather than responded to with hysteria and “emergency” measures. Thus, it is an appropriate time to develop a *constitutional* plan for Deer Creek in Tehama County for the spring of 2021 if dry conditions continue.

1. Low-Flow Channel.

Your agencies have expressed concerns regarding the conditions for salmon and steelhead conditions in Deer Creek during dry periods. We wish to inform you that Stanford Vina Ranch Irrigation Company is eager to work with you to clear a “low-flow” channel for fish

passage as occurred in the droughts of previous years before the SWRCB and California Department of Fish and Wildlife became enamored with inverse condemnation under the label of "waste and unreasonable use." Such a clearing and removal of blockages is a physical solution to create flow and temperature conditions that enhance salmon and steelhead conditions in dry years. The attached documents detail which riffles will be modified and confirms that the project can create favorable fish conditions with instream flows of 5-10 CFS.

We are eager to hear your views of which riffles are most critical to clearing of the low-flow channel. The aerial photographs attached show a fully flowing stream in July of 2011 with markers for potential areas where a backhoed low-flow channel of approximately 1-2 feet deep and 3 feet wide could be cleared and excavated. Also attached are photographs taken in 2014 showing locations taken from ground-level where FishBio determined excavation would be valuable. We estimate ten (10) potential areas where excavation would be performed and, using an estimate of 8-10 feet per area, approximately 500 cubic yards of material may be excavated to create the higher flows. This physical solution is simple to implement, and we urge you to develop such a clearing and excavation process for the channel for this Spring.

If you are inclined to respond to this correspondence by directing Stanford Vina or other Deer Creek water users to file an application for a streambed alteration permit, we would remind that that such a response is equivalent to refusing to implement the low-flow channel. It is not possible to apply for and to receive a streambed alteration permit prior the spring fishery migration period. Such applications take many months to process and, if deemed acceptable, to finalize into a streambed alteration agreement. The conditions routinely imposed on such permits would also make it infeasible to carry out the project even if a permit was granted. Your agencies have made the process of securing a streambed alteration permit so costly and difficult that directing Stanford Vina and other water users to file for a streambed alteration permit here would be the equivalent of prohibiting the proposed low-flow channel and would in and of itself be a violation of the California and Federal Endangered Species Acts by ensuring that protected fishery resources will lack enhanced passage conditions this Spring. Nor is it the burden of local water users to secure permits for the project of your agencies. While Stanford Vina and other Deer Creek water users are willing to join your agencies in an application for such permits, this is a project of your agencies to enhance fishery passage conditions.

If you are inclined to refrain from pursuing the proposed low-flow channel, or wish to create an appearance of responding but do not intend to actually develop the channel in an expedient fashion, please consider how you will explain to a court why this feasible physical solution was not pursued to implement the enhanced fishery migration conditions that your agencies desire and why you instead chose to confiscate the water of local interests without compensation or an evidentiary hearing.

2. Cooperation From Your Agencies.

We ask that you take a series of reasonable and feasible steps to get this done. First, we ask that you exercise your lawful authority to suspend the California Environmental Quality Act's ("CEQA") application to the low-flow clearing and channel reinstatement. Public Resources Code Section 21080(b) of CEQA states: "This division does not apply to any of the

following activities...Specific actions necessary to prevent or mitigate an emergency.” Second, we ask that you exercise your lawful authority to declare your determination with ours under Fish and Game Code section 1610 that an emergency will exist. That provision will allow work in the streambed to occur without a permit in emergency circumstances. (Fish and Game Code § 1610.) Section 1610 states, “Except as provided in subdivision (b) this chapter does not apply to any of the following: (1) immediate emergency work necessary to protect life or property.”

These emergency exceptions can be invoked immediately to allow the low-flow channel to proceed. There is no requirement that the Governor declare an emergency. The CEQA and Fish and Game Code exceptions can be invoked, regardless of whether the Governor declares an emergency. Invocation of the emergency exceptions is appropriate here. The low-flow channel is necessary to protect Deer Creek fish and the low-flow channel will not get done in a timely manner unless you invoke the emergency exceptions of CEQA and the Fish and Game Code.

3. Failure to Allow the Physical Solution Low-Flow Channel Will be an Admission.

We are asking for you to exercise your lawful authority to get this physical solution done. If your agencies fail to facilitate the construction of the low-flow channel that would help fish with relatively little water, and instead issue regulations under the guise of “emergency” to confiscate the water of Deer Creek landowners for instream flows, it will be an admission that your true objective is to create a public instream flow project without compensating Deer Creek landowners for the taking of their water and for converting their farmland into dryland cropland.

Your apparent goal is avoid any fish having to “drag their bellies over gravel bars” or be delayed in their upstream migration on Deer Creek – ordinary features of the natural selection process in a dry year. If this goal is accomplished by suspending water rights -- real property rights -- and prohibiting diversion that occurred uninterrupted for over 100 years, including a number of drought years, then you will be executing a public instream flow project requiring an evidentiary hearing and compensation.

Numerous courts have required physical solutions when considering competing uses of water. Some of your agencies refuse to consider any alternatives to accomplishing their fish passage project other than “more flows” and “more water.” By refusing to consider physical solution of a low-flow channel to facilitate fish passage, your agencies will create the very “emergency conditions” invoked to take the water of Deer Creek landowners. This is indefensible.

By failing to allow the physical solution of a low-flow channel, your agencies will be demonstrating to a Court that your true objective is to utilize sequential emergency declarations to compel a few rural landowners to pay for a public instream flow project without evidentiary hearing, compensation, or any form of due process. If the water for a few rural landowners is to be taken for what is deemed to be a public purpose, and your agencies do not wish to consider the low-flow channel a physical solution, then an evidentiary hearing must be held and the basis for that determination must be made, including the landowners’ right to cross-examine any

witnesses and present evidence, and compensation must be awarded for the water and real property taken.

4. A Low-Flow Channel is Required to Help Fish.

A low-flow channel with water flows tailored to the channel capacity is the only appropriate mechanism for improving Deer Creek fishery conditions if dry conditions persist. Confiscating the water rights of Deer Creek landowners and throwing their water down the creek will not benefit salmon and steelhead. Temperature and riffle fish passage conditions perfect for predation and stress of the fish may be lethal for salmon and steelhead under even the highest instream flow levels of dry years. Without a low flow channel through extensive riffle areas, instream flows spread across the streambed resulting in hot and shallow water conditions. Maximum tolerable temperatures for adult spring run salmon is approximately 65 degrees. (CDFW 2001 Spring Run Salmon Report for Deer and Mill Creek, Collen Harvey Arrison, p. 4.) Attached are actual 2014 temperature readings for the water at the USGS gauge located above both the Deer Creek Irrigation District and Stanford Vina Ranch Irrigation Company dams. These temperature readings are taken some five (5) miles above the Sacramento River. Obviously, there is substantial additional warming that occurs in the five (5) miles between the USGS gauge and the confluence of Deer Creek and the Sacramento River. These temperature readings confirm that the water temperature rises by the May and June adult upstream migration period to levels which stress salmon and steelhead. Without a low-flow channel, water sent down Deer Creek simply spreads across the shallow channel and bakes the salmon and steelhead. Further, the shallow water conditions exacerbate predation problems with salmon and steelhead having little chance of avoiding predators – a problem that low-flow channels mitigate through increased depth and variability in creekbed characteristics.

If you question these statements, we urge you to hold the evidentiary hearing that is required under the constitution and which there is ample time and opportunity to conduct so that that truth and the facts surrounding Deer Creek hydrology, fishery conditions, and water rights can be presented through the admission of evidence and cross-examination of witnesses. Doing so will allow your agencies to make informed decisions in achieving your purported goals of helping fish while not despotically devastating the people of Deer Creek.

5. Condemnation

Although clearing the low-flow channel approach was utilized in previous drought years and is the only means of actually helping salmon and steelhead, members of your respective agencies have expressed the view that no proactive action of this nature is necessary, and instead the water and water rights of Deer Creek landowners (and those of other Tehama County streams) can simply be confiscated if dry conditions persist. We remind you that Constitutional protections require an evidentiary hearing and compensation if this approach is taken, and this advance notice gives adequate time for you to schedule hearings and make deposit of funds under eminent domain statutes. And although we disapprove of this approach and reserve all rights of protest, we are willing to work cooperatively with your agencies to facilitate the issuance of condemnation notices to water right holders and to participate in an efficient and effective evidentiary hearing proceeding and system for deposit of damages and value of the water rights stripped from the farmland and its owners for the periods at issue.

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The importance of Deer Creek water rights and water to the landowners cannot be overstated and we urge you to keep this in mind. The water is the primary source of irrigation water – and in many cases the only source of irrigation water - for the people of the Vina and Deer Creek areas. These individuals rely on the water to sustain their cattle herds, orchards, alfalfa, and other crops. Confiscating their water in the critical spring irrigation periods has devastating consequences for them: crops are stressed, herds are culled, and lands must be fallowed. Whether used for a cow or a walnut tree, a grapevine or alfalfa field, the people of Deer Creek and Vina depend on their water rights and water for their livelihoods. These people represent the diverse spectrum of individuals who live in rural America; from third generation cattlemen and cattlegirls, to the monks of the Abbey of New Clairvaux who depend on the water to sustain their grapes - a critical source of income for their monastery. There is no meaningful substitute source of irrigation water for these people. Groundwater is not reliable in the area. Many landowners do not have wells or the funds to drill them, or the landowners that do have wells are pumping from an unreliable aquifer.

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-or-

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(Notes-DCID Strategy Meeting 10/10/16.)

One could not imagine better evidence that your agencies have made a deliberate choice to not develop a long-term instream flow project and instead have chosen to “wait” because the SWRCB will take the water from the people of Deer Creek without compensation.

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Conclusion

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To: State Water Resources Control Board, National Marine Fisheries Service, California Dept of Fish and Wildlife
Re: Channel Clearing -- Deer Creek, Tehama County
Date: March 11, 2021
Page 8

rural landowners who rely on their Deer Creek water rights to sustain their crops, herds, and their livelihoods.

Very truly yours,

MINASIAN, MEITH,
SOARES, SEXTON & COOPER, LLP

By: 

JACKSON A. MINASIAN

JAM/PRM:lmj

Enc.

Stanford VinalSWRCB, NMFS, CDFW.3.11.21

EXHIBIT D

STANFORD VINA RANCH IRRIGATION COMPANY

6320 Tehama-Vina Road, P.O. Box 248, Vina, CA 96092

Telephone: (530) 520-2563

LOS MOLINOS MUTUAL WATER COMPANY

25162 Josephine Street, P.O. Box 211, Los Molinos, CA 96055

Telephone: (530) 384-2737 * Fax (530) 384-9835

April 2, 2021

Mr. Jason Roberts
California Department of Fish and Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090

Mr. Howard Brown
National Marine Fisheries Service
650 Capitol Mall, 5-100
Sacramento, CA 95814

Re: Mill Creek/Deer Creek
Joint Implementation of Multipurpose Channel Restoration Measures

Messrs. Roberts and Brown:

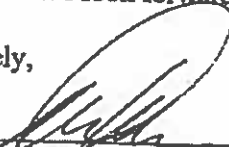
Los Molinos Mutual Water Company on Mill Creek and Stanford Vina Ranch Irrigation Company on Deer Creek would like to coordinate site visits on both Creeks as soon as possible to discuss the implementation of multipurpose channel restoration measures that could enhance 2021 fishery conditions in the two Creeks. Please invite any others from your respective agencies that you believe would be helpful to this discussion. The measures would be implemented by our respective entities together with your agencies.

We would like to discuss ideas for channel restoration in the Creeks, the cost and funding of such measures, and how we can secure all regulatory requirements and approvals, including compliance with CEQA, and the potential need for a Streambed Alteration Agreement to implement much needed restoration measures without delay. We hope you can come prepared to discuss how we can all work together to get these measures accomplished in 2021. We are available any time on April 8th, 12th and 13th, 2021.

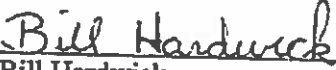
We write you jointly in response to the similar correspondence we received from you concerning fishery conditions. Scheduling the site visits on the same day will be efficient for all parties. However, we would remind you that we are distinct entities, the biological and hydrological

conditions on the two Creeks are different, and measures to enhance fishery passage conditions on the two Creeks are not likely to be uniform. We look forward to your response.

Sincerely,



Mike Wallace
Stanford Vina Ranch Irrigation Company



Bill Hardwick
Los Molinos Mutual Water Company

cc: David Guy, NCW
Todd Manley, NCW

EXHIBIT E

Jackson Minasian

From: Roberts, Jason@Wildlife <Jason.Roberts@wildlife.ca.gov>
Sent: Wednesday, April 7, 2021 11:28 AM
To: Dustin Cooper; Howard.Brown@noaa.gov
Cc: Callie Wood; keithbentz54@gmail.com; Todd Manley; Jackson Minasian; Aidan Wallace; David Guy (DGuy@norcalwater.org); Williamson, Nicole@Waterboards; Ekdahl, Erik@Waterboards; Mike Wallace; Bill Hardwick; Riddle, Diane@Waterboards; Serup, Bjarni@Wildlife; Johnson, Matt@Wildlife; Harris, Michael R.@Wildlife; Grover, Joshua@Wildlife; Bartlett, Tina@Wildlife; Roberts, Jason@Wildlife
Subject: Re: Deer Creek Watershed Meeting

Dustin,

CDFW is willing to meet onsite with the water users and NCWA to discuss channel rehabilitation. The dates proposed do not work though. I am available on the 15, 19 and 23 of April.

We also think it would be a good idea to have the meeting(s) that the SWRCB proposed too.

Regarding channel rehabilitation, I do not think our position has changed. It is not feasible to waive environmental permits and regulations and there are numerous permits and regulations issued by agencies other than CDFW.

Generally speaking, I would assume that the following would be needed for a project to move forward.

- Designs
- CEQA
- NEPA
- Lake and Streambed Alteration Agreement
- Incidental Take Permit
- ACOE 404
- SWRCB 401
- Central Valley Flood Protection Board permit
- Section 7 consultation with NOAA fisheries

Like previous letters we responded to, CDFW is willing to work with all interested stakeholders on addressing fisheries issues in lower Mill and Deer Creeks. The process will take time though and cannot be accomplished on short notice as you propose.

CDFW will formally respond to your letter in the near future.

Thanks,
Jason

Jason Roberts
Environmental Program Manager - Inland Fisheries
Northern Region (Region 1)

California Department of Fish and Wildlife
(530) 526-2168

From: Dustin Cooper <dcooper@minasianlaw.com>

Sent: Tuesday, April 6, 2021 10:01 AM

To: Williamson, Nicole@Waterboards <Nicole.Williamson@waterboards.ca.gov>; Roberts, Jason@Wildlife <Jason.Roberts@wildlife.ca.gov>; Johnson, Matt@Wildlife <Matt.Johnson@wildlife.ca.gov>; Harris, Michael R.@Wildlife <Michael.R.Harris@wildlife.ca.gov>; Grover, Joshua@Wildlife <Joshua.Grover@wildlife.ca.gov>; Serup, Bjarni@Wildlife <Bjarni.Serup@wildlife.ca.gov>; howard.brown@noaa.gov <howard.brown@noaa.gov>; brian.ellrott@noaa.gov <brian.ellrott@noaa.gov>; evan.sawyer@noaa.gov <evan.sawyer@noaa.gov>; Shin, Robin@Waterboards <Robin.Shin@Waterboards.ca.gov>; Holland, Matthew@Waterboards <Matthew.Holland@waterboards.ca.gov>; Riddle, Diane@Waterboards <Diane.Riddle@waterboards.ca.gov>; Ekdahl, Erik@Waterboards <Erik.Ekdahl@waterboards.ca.gov>; Schultz, Daniel@Waterboards <Daniel.Schultz@waterboards.ca.gov>; Maguire, Sean@Waterboards <Sean.Maguire@Waterboards.ca.gov>; Dadamo, Dorene@Waterboards <Dorene.Dadamo@waterboards.ca.gov>

Cc: Mike Wallace <mike@crainwalnut.com> (mike@crainwalnut.com) <mike@crainwalnut.com>; Bill Hardwick <Immutual@att.net>; Callie Wood <calliecowgirl@hotmail.com>; David Guy (DGuy@norcalwater.org) <dguy@norcalwater.org>; Todd Manley <tmanley@norcalwater.org>; keithbentz54@gmail.com <keithbentz54@gmail.com>; Jackson Minasian <jminasian@minasianlaw.com>; Aidan Wallace <AWallace@Minasianlaw.com>

Subject: FW: Deer Creek Watershed Meeting

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Good morning – Stanford Vina Ranch Irrigation Company (Deer Creek) and Los Molinos Mutual Water Company (Mill Creek) coincidentally has also requested a meeting with your respective agencies to occur ASAP. Please see attached joint letter, which probably has not been routed to all of your inboxes yet.

We think a meeting onsite would be most effective and would be happy to coordinate so one trip can cover visits to both Deer and Mill Creeks. Thank you. Dustin

From: Mike Wallace <mike@crainwalnut.com>

Sent: Tuesday, April 6, 2021 9:15 AM

To: Jackson Minasian <jminasian@minasianlaw.com>; Dustin Cooper <dcooper@minasianlaw.com>; Aidan Wallace <AWallace@Minasianlaw.com>

Cc: Callie Wood <calliecowgirl@hotmail.com>

Subject: FW: Deer Creek Watershed Meeting

Michael Wallace

Chief Financial

Officer

Crain Walnut Shelling, LP

Crain Orchards, Inc.

Eco-Shell, LP

☎ (530) 529-1585 • 📠 (530) 781-3022

EXHIBIT F

STANFORD VINA RANCH IRRIGATION COMPANY

6320 Tehama-Vina Road, P.O. Box 248, Vina, CA 96092

Telephone: (530) 520-2563

LOS MOLINOS MUTUAL WATER COMPANY

25162 Josephine Street, P.O. Box 211, Los Molinos, CA 96055

Telephone: (530) 384-2737 * Fax (530) 384-9835

May 5, 2021

Jason Roberts
Environmental Program Manager – Inland Fisheries
Northern Region (Region 1)
California Department of Fish & Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090
Jason.Roberts@wildlife.ca.gov

Dear Mr. Roberts:

Los Molinos Mutual Water Company (LMMWC) and Stanford Vina Ranch Irrigation Company (SVRIC) thank you and your colleagues for your willingness to discuss drought conditions on Mill and Deer Creeks, including our visit of a critical riffle site on April 19, 2021. As you know, LMMWC and SVRIC believe the best way to address CDFW's fishery concerns on the Creeks is through prompt implementation of a multi-benefit channel restoration projects. Such projects would provide multiple benefits, including enhancing fish passage and water supply reliability for the farms, businesses, terrestrial environmental, and other off-stream beneficial uses of water.

On April 2, 2021, we sent you a letter requesting CDFW's assistance in undertaking emergency channel restoration efforts to improve fish passage conditions in 2021. In response, on April 7, 2021, you stated it is "not feasible" to undertake such an emergency project and listed numerous approvals and prerequisites to implementation of such a restoration project, as follows:

- Designs
- CEQA
- NEPA
- Lake and Streambed Alteration Agreement
- Incidental Take Permit
- ACOE 404
- SWRCB 401
- Central Valley Flood Protection Board permit
- Section 7 consultation with NOAA fisheries

(See Jason Roberts, CDFW, Email Dated April 7, 2021, copy attached.)

Since your email, drought conditions across the state have continued to worsen and Governor Newsom on April 21, 2021 issued an Emergency Proclamation for drought. State agencies, including CDFW, are directed to:

Accelerate funding of water supply enhancement, water conservation, or species conservation projects.

(Emergency Proclamation, ¶ 4(a).)

CDFW is specifically directed to:

Evaluate and take actions to protect terrestrial and aquatic species and, wherever possible, work with water users and other parties on voluntary measures to protect species.

(*Id.* ¶ 9(a).)

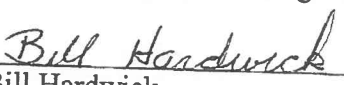
We believe the multi-benefit channel restoration projects envisioned in our discussions are part of the suite of actions contemplated in Governor Newsom's Proclamation. Unfortunately, it appears the opportunity to do channel restoration work in the spring of 2021 has closed. However, there is opportunity for undertaking such efforts in advance of this Fall, especially if dry conditions persist into 2022. Consequently, under the Governor's Proclamation, LMMWC and SVRIC request funding and CDFW's assistance to begin implementing the multi-benefit channel rehabilitation projects on Mill and Deer Creeks. Included in this request is CDFW's assistance in pursuing and securing all regulatory and other approvals necessary for timely implementation of the rehabilitation projects and determining appropriate funding. It is essential that these efforts begin now, in the event drought conditions persist into 2022.

We look forward to continuing our discussion on these important matters.

Sincerely,


Mike Wallace

Stanford Vina Ranch Irrigation Company


Bill Hardwick

Los Molinos Mutual Water Company

EXHIBIT G

Outline of Key Terms for Drought Year 2021 Actions on Deer Creek

1. **Purposes:**
 - a. Implement short-term actions on Deer Creek for water conservation, fishery conditions, and water supply during the 2021 drought.
 - b. Commit to pursue and implement long-term solutions improving fish passage on Deer Creek and resolving long-standing need for multi-benefit channel restoration for ecological benefits and water supply reliability; the long-term solutions are intended to address and avoid future need for emergency regulations and allegations of take associated with water diversions under Federal or State Endangered Species Acts.

2. **Parties:**
 - a. Water User Parties: Stanford Vina Ranch Irrigation Company (SVRIC); Deer Creek Irrigation District (DCID).
 - b. Agencies: State Water Resources Control Board (SWRCB); California Department of Fish and Wildlife (CDFW); NOAA National Marine Fisheries Service (NMFS).

3. **Forbearance/Flow Measures, Year 2021:** Water Users will forego diversions to create base and pulse flow regimes as follows:
 - a. Base Flow of not more than 25 cfs measured at the SVRIC Dam May 15 to June 15 and October 15 to November 30
 - b. Four Pulse Flows for a 48-hour period including two Pulse Flows during the May 15 to June 15 period and two Pulse Flows during the October 15 to November 30 period. DFW may request the pulse flows with twenty-four hours' notice.

4. **Cessation of Forbearance Due to Temperature:** A temperature monitoring program will be implemented in Deer Creek. Forbearance measures will cease when water temperatures below SVRIC Dam are no longer conducive for fish passage including water temperatures that exceed the EPA guideline of 68 degrees Fahrenheit.

5. **Multi-benefit Channel Restoration Project:** Agencies, in coordination with Water Users, will commit to pursue regulatory approvals and funding for design and implementation of a multi-benefit channel restoration project between SVRIC Dam and the confluence of the Sacramento River. Goals of restoration include but are not limited to 1) improved fish passage at lower flows; 2) improved geomorphic stream processes; 3) improved riparian habitat; and 4) improved floodplain habitat and flood control.

6. **Environmental Permits, Approvals, and Immunities**
 - a. In exchange for the foregoing, SWRCB will not pursue emergency regulations, waste and unreasonable use claims, or other enforcement proceedings (collectively "Enforcement") against Water Users for diversions in 2021. Provided Water Users are cooperating in good faith to pursue the multi-benefit channel restoration project along with Agencies, SWRCB will not pursue Enforcement against Water Users.

- b. Safe Harbor Agreement with NMFS under federal Endangered Species Act relating to fish passage in Deer Creek.
- c. Safe Harbor Agreement with CDFW under California Endangered Species Act, relating to fish passage in Deer Creek.

7. **Funding from the State of California**

- a. See, e.g., Governor's State of Emergency Proclamation dated April 21, 2021, section 4, and SVRIC and Los Molinos Mutual Water Company's joint letter to CDFW dated May 5, 2021.
- b. Water Users will be compensated in the amount of \$2,100,000 for the purpose of implementing, in Water Users' discretion, water conservation, water efficiency, system improvement, or other water related improvements within their respective service areas.

STANFORD VINA RANCH IRRIGATION COMPANY

6320 Tehama-Vina Road, P.O. Box 248, Vina, CA 96092

Telephone: (530) 520-2563

May 11, 2021

State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

California Department of Fish and Wildlife
Attention: Jason Roberts
P.O. Box 944209
Sacramento, CA 94244-2090

National Marine Fishery Service
Attention: Howard Brown
650 Capitol Mall, 5-100
Sacramento, CA 95814

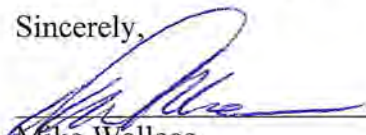
Re: Deer Creek, Drought Year 2021

Ladies and Gentlemen,

On May 5, 2021 representatives the State Water Resources Control Board (SWRCB), California Department of Fish & Wildlife (CDFW) and NOAA National Marine Fisheries Service (NMFS) invited the two primary water right holders on Deer Creek, Stanford Vina Ranch Irrigation Company (SVRIC) and Deer Creek Irrigation District (DCID) to a discussion regarding 2021 water conditions and fish passage in Deer Creek. At this meeting, SVRIC and DCID were given an ultimatum: either (1) submit, in writing, and within one-week terms that SVRIC and DCID propose to implement to ensure fish passage in 2021 or (2) the SWRCB will adopt and impose emergency regulations curtailing (yet again) SVRIC's and DCID's senior, adjudicated water rights. Enclosed is an Outline of Drought Year 2021 Actions for Deer Creek provided in response to this ultimatum, on behalf of the boards of DCID and SVRIC. We would like to engage with you on this Outline, having made every effort to deliver it to you within the requested timeframe. Please provide the SWRCB's, CDFW's and NMFS' written response to this proposal in one week.

In the meantime, I am working in good faith to arrange a pulse flow on or shortly after the weekend of May 15th, consistent with conversations between myself and Matt Johnson of CDFW, and consistent with our mutual desire to assure fish passage this year.

Sincerely,



Mike Wallace
Stanford Vina Ranch Irrigation Company

EXHIBIT H

STANFORD VINA RANCH IRRIGATION COMPANY

6320 Tehama-Vina Road, P.O. Box 248, Vina, CA 96092

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LOS MOLINOS MUTUAL WATER COMPANY

25162 Josephine Street, P.O. Box 211, Los Molinos, CA 96055

Telephone: (530) 384-2737 * Fax (530) 384-9835

July 12, 2021

State Water Resources Control Board:

E. Joaquin Esquivel, Chair

Doreen D'Adamo, Vice -Chair

Sean Maguire, Member

Laura Firestone, Member

Nicole Morgan, Member

1001 I Street

Sacramento, CA 95814

Re: Chanel Restoration and Critical Riffle Modification on Deer and Mill Creeks

Ladies and Gentlemen:

We write you to again to offer our assistance in carrying out the fishery enhancement projects on Deer Creek and Mill Creek that your agency desires. We have previously written the State Water Board, as well as the California Department of Fish and Wildlife ("CDFW") and federal National Marine Fishery Services ("NMFS"), requesting expedited regulatory approvals, in light of drought conditions, to begin implementing a multi-benefit channel restoration project that would immediately enhance fishery passage during the current drought conditions.

We again write you to offer our assistance in implementing the riffle modification measures that are necessary to enhance fishery conditions.¹ We are willing to contribute labor to modify critical riffles by hand in a fashion that will enhance fishery passage during the prevailing drought conditions. Alternatively, we are willing to contribute an equipment operator and fuel for an excavator to mechanically modify the critical riffles.

The State Water Board, along with CDFW and the NMFS, has asserted that fish passage on Mill and Deer Creeks can be enhanced by increasing water depth at critical riffles. However, the depths and velocities desired can only be achieved through the physical solution of modifying the riffles to concentrate the flow of water over them, so as to increase the water depth. It cannot be accomplished by simply demanding through either voluntary agreement or

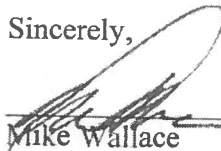
¹ Stanford Vina Ranch Irrigation Company and Los Molinos Mutual Water Company previously contacted your agency in writing to offer assistance to implement channel rehabilitation and critical riffle modification measures to enhance fishery passage conditions on Mill and Deer Creeks on February 26, 2018; February 21, 2020; March 16, 2021; March 21, 2021; April 2, 2021; and May 5, 2021.

emergency regulation “more water” or “higher flows” from water users who desperately need their water to reasonably and beneficially apply water to their crops, livestock, and permanent planting.

Under current conditions, additional flows spread out laterally across unmodified riffles, creating harmful temperature, predation conditions and other passage constraints. The physical solution of modifying critical riffles is precisely what is required by law here under *City of Lodi v. East Bay Municipal Utility Dist.* (1936) 7 Cal.2d 31, 341 which affirmed that California Constitution Article X, section 2 requires physical solutions to maximize the beneficial use of water, and without substantial cost to prior appropriators. The water users’ proposed physical solution of modifying critical riffles in Deer and Mills Creeks is necessary to maximize the beneficial use of water for both human and crop consumption and instream purposes, in accordance with Article X, section 2’s mandate that “the water resources of the State be put to beneficial use to the fullest extent of which they are capable.” We ask for the State Water Board’s assistance in cutting the green tape and immediately allowing for implementation of this physical solution.

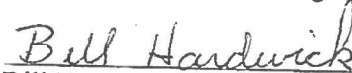
The State’s continued failure to act should not be an option. Nor should the State Water Board act as it did in 2014 and 2015 by adopting emergency regulations. It is not appropriate to refrain from taking any action to modify critical riffles, and to then claim “emergency” and take the water of users on Mill and Deer Creeks. The State Water Board and its sister state and federal agencies have had years to implement critical riffle modification measures and other channel rehabilitation measures. The regulatory burden and cost of implementing this fishery enhancement project ought to be borne by these agencies, given the public nature of the project. It should not be borne exclusively by water users on Mill and Deer Creeks as it was in 2014 and 2015. This is especially true given our repeated efforts to secure the regulatory approvals necessary to undertake this very important channel rehabilitation project. We look forward to your response.

Sincerely,



Mike Wallace

Stanford Vina Ranch Irrigation Company



Bill Hardwick

Los Molinos Mutual Water Company