

State of California
State Water Resources Control Board
DIVISION OF WATER RIGHTS
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PROTEST – (Petitions)
OBJECTION
PETITION FOR RECONSIDERATION
PETITION FOR HEARING

BASED ON ENVIRONMENTAL OR PUBLIC INTEREST CONSIDERATIONS

Temporary Urgency Change Petition for Permits 16478, 16479, 16481, 16482 and 16483 (Applications 5630, 14443, 14445A, 17512 and 17514A, respectively) of the Department of Water Resources for the State Water Project and License 1986 and Permits 11315, 11316, 11885, 11886, 11887, 11967, 11968, 11969, 11970, 11971, 11972, 11973, 12364, 12721, 12722, 12723, 12725, 12726, 12727, 12860, 15735, 16597, 20245, and 16600 (Applications 23, 234, 1465, 5638, 13370, 13371, 5628, 15374, 15375, 15376, 16767, 16768, 17374, 17376, 5626, 9363, 9364, 9366, 9367, 9368, 15764, 22316, 14858A, 14858B, and 19304, respectively) of the United States Bureau of Reclamation for the Central Valley Project.

We, Chris Shutes, Water Rights Advocate, California Sportfishing Protection Alliance (CSPA), 1608 Francisco St., Berkeley, CA 94703, blancapaloma@msn.com, (510) 421-2405; Bill Jennings, Executive Director, CSPA, 3536 Rainier Ave, Stockton CA 95204, deltakeep@me.com, (209) 464-5067; Barbara Vlamis, Executive Director, AquAlliance, P.O. Box 4024, Chico, CA 95927, barbarav@aqualliance.net, (530) 895-9420; Carolee Krieger, Executive Director, California Water Impact Network, 808 Romero Canyon Rd., Santa Barbara, CA 93108, caroleekrieger7@gmail.com, (805) 969-0824; and Michael Jackson, counsel to CSPA, CWIN and AquAlliance, P.O. Box 207, 429 W. Main St., Quincy, CA 95971, mjattv@sbcglobal.net (Protestants)

have read carefully a notice relative to a petition for Temporary Urgency Change of the Department of Water Resources (DWR) and the Bureau of Reclamation (Bureau), The Executive Director issued an Order granting this petition on January 31, 2014 entitled *Order Approving a Temporary Urgency Change in License and Permit Terms and Conditions Requiring Compliance with Delta Water Quality Objectives in Response to Drought Conditions*. Since this initial Order, DWR and the Bureau have submitted a series of requests for modifications of the Order, and for modifications of subsequent Orders. In general, these requests have been granted in full with the issuance of a Modification of Order or a Revised Order; in many cases, the Board acted within one day of receipt of the requests from DWR and the Bureau. There has been no formal process for public comment, protest, or review of each iteration. Though requested by multiple parties, no hearings on matters related to these petitions and Orders have been noticed or held.

On May 2, 2014, the Board issued a Notice of Request to Modify and Renew a Temporary Urgency Change Petition Filed by California Department of Water Resources and the United States Bureau of Reclamation Regarding Permits and License of the State Water Project and the Central Valley Project, and also issued a Revised Order acting on this request. Protestants have carefully read the notice, the request, the Order and the supporting materials. This May 2, 2014 Order is the immediate object of this Protest, Objection, Petition for Reconsideration, and Petition for Hearing.

The Executive Director of the Board also issued Revised or modified Orders on February 7, February 28, March 18, April 9, April 11, and April 18, 2014.

On May 6, 2014, the Board issued held a Workshop relating to these petitions and Orders. A representative of Protestants attended this workshop, and Protestants have considered the comments and presentations made at this workshop by Board staff; staff of DWR, the Bureau, California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and the National Marine Fisheries Service; and members of the public. Protestants have also considered the comments and questions made by Board members at this workshop.

Protestants filed a protest on March 3, 2014 of the February 28, 2014 Revised Order. Protestants filed a second protest and statement of objections on April 28, 2014. Protestants incorporate both of these protests into the present protest by reference. However, pursuant to the Notice of the April 25, workshop, Protestants have eliminated dismissal terms from previous protests that have been addressed in the May 2 Order or previous Orders, and have revised some dismissal terms based on further consideration and recent developments.

One of the most vexing aspects of the Board's actions on DWR and the Bureau's iterations of requests to change the Temporary Urgency Change Orders has been the complete lack of procedural direction from the Board on the appropriate ways to respond to apparently ad hoc and non-responsive actions by the Board. Various parties have responded to the Board's actions with what they styled as comments, protests, objections, and petitions for reconsideration. While Temporary Urgency Changes have always been confusing in that "comments" are solicited using a water rights petition protest form, the current Orders have been remarkable in that there has been no formal response to any submittals from the public. Protestants have viewed proper process as requiring a response from the Board before a Petition for Reconsideration was in order. The pendency of a Petition for Reconsideration is 30 days. Does that begin from the date of an Order, from the date of comments, protests and/or objections, or from the date of the Board's response that has not yet been made?

Out of an abundance of caution, Protestants now also petition for reconsideration of the May 2 Order and any previous Orders to which Protestants are legally entitled to petition. More directly, we also petition for hearing as described below.

Protestants protest against and object to the approval of the May 2, 2014 Order and all previous Orders and Revised Orders as enumerated above, because to the best of our information and belief:

The proposed petition for water and Order in response will:

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

State Facts, which support the foregoing allegations:

Summary of relevant Orders since January 31, 2014

In abbreviated summary, the Orders granting the Temporary Urgency Changes requested by DWR and the Bureau for the State Water Project and Central Valley Project (collectively, “Projects”) permitted the following:

The January 31 Order allowed DWR and the Bureau to limit Delta outflow to 3000 cfs in February and allowed them flexibility to open the Delta Cross Channel Gates from February 1 to May 20. It limited combined state and federal exports to 1500 cfs for purposes of health and safety, created a Real Time Drought Operations Management Team, required monitoring and reporting, and required water saved to be held in storage to maintain water supplies, improve water quality, and protect flows for fisheries.

The February 7 Order allowed exports of transferred water and allowing export of natural and abandoned flows greater than 1500 cfs when the D-1641 Table 3 flow requirement of 7100 cfs or e.c. of 2.64 mmhos at Collinsville and requirement to close the Delta Cross Channel Gates were being met .

The February 28 Modified Order, extended the terms of the February 7 Order through the month of March, 2014.

The March 18 Revised Order continued the flow requirements in the February 7 and February 28 Orders and continued to allow exports of transferred water and exports of natural and abandoned flows when D-1641 Table 3 conditions were not being met. It also allowed deliveries of exported water for any Project purposes provided that the same D-1641 Table 3 Conditions were being met, allowing such exports even if the D-1641 Table 4 flow requirements of 11,400 at Chipps Island or alternative salinity requirements at Collinsville were not being met.

The April 9 Revised Order extended the reduced Delta outflow requirements allowed in the March 18 Revised Order. It allowed DWR and the Bureau to operate in the short term consistent with the Drought Operations Plan they issued on April 8, 2014; short term actions included installation of three channel barriers, changes to Delta salinity standards, and the ability to open the Delta Cross Channel Gates.

The April 11 Revised Order set April and May flows for the lower San Joaquin River, requiring a 700 cfs minimum flow until commencement of a pulse flow, a 15-day pulse flow

(reduced from the 31 day requirement of D-1641) in April, and a 500 cfs minimum flow for the lower San Joaquin River following the completion of the 1500 cfs pulse flow.

The April 18 Revised Order permitted export of the entire volume of the lower San Joaquin River pulse flow in April or May, even when the D-1641 Table 3 minimum flow conditions are not being met, or 1500 cfs, which is greater.

The May 2 Revised Order extended the time period it is in effect until January 27, 2015. It continued to allow export of the entire amount of San Joaquin pulse flows during the San Joaquin pulse flow period. It reduced required Delta outflow in June, July and August to a 30 day running average of 3000 cfs, with no seven day running average less than 2000 cfs. It reduced required Delta outflow in September, October and the first half of November to a 30 day running average of 2000 cfs, with no seven day running average less than 1500 cfs. It moved the salinity compliance point of 2.64 mmhos from Emmaton to the mouth of Three Mile Slough. It also required that the Projects “bypass natural and abandoned flows” while operating under changes under the order, though the reasoning connecting reduced Delta flows and potential injury to “other legal users of water” is not divulged.

Summary of Project storage since January 31, 2014

As we described in our protest of March 3, 2014, Project storage reservoirs were drawn down from the from being virtually full in May 2012 to the point where on February 4, 2014, storage in Folsom was about 162 TAF, storage in Shasta was about 1,650 TAF, and storage in Oroville was about 1,270 TAF. On January 31, 2014, there had been record low inflow to Project reservoirs since December 2012. At the Board’s May 6, 2014 workshop, both John Lehigh from DWR and SWRCB Executive Director Tom Howard described conditions as of January 31, 2014 as being “outlier” conditions that were more severe than conditions in 1977.

Since the end of January, conditions have moderated. February precipitation was about 180% of normal in the north and central parts of the state. March and April precipitation was also at or above average for much of the state. By April, DWR and the Bureau had placed tentative plans by to install three in-Delta barriers (two in the north Delta, and one at the mouth of False River) “on the shelf.” At the May 6 workshop, Mr. Lehigh from DWR reported that relaxed Delta standards had allowed the Projects to store an additional about 147 TAF and to export an additional 63 TAF. Mr. Lehigh reported at the workshop that from February 1 and May 6, overall Project storage increased by about 2 MAF.

According to DWR and the Bureau, the 90% exceedence for end-or-September storage in Project reservoirs is forecast to be 1.0 MAF in Oroville, 300 TAF in Folsom, 1.1 MAF in Shasta, 366 TAF in New Melones, and 669 TAF in Trinity Lake. (See <http://www.usbr.gov/mp/cvo/data/Apr90b2.pdf>. This lines up with figures for Orville, Folsom and Shasta reported at the May 6 workshop).

Every indication is that water supply conditions from February 1 to May 6 have gone from being catastrophic to severe. There will be sufficient water for health and safety. There will be sufficient water to supply the Sacramento Settlement Contractors 75% of their allotments

from north state reservoirs. There will be sufficient water to keep Delta salinity low enough that water exported through Project pumps will be of adequate (though not ideal) quality. This sufficiency was not expected on January 31.

Summary of the condition of Central Valley fisheries since January 31, 2014

Hatchery operations were modified in 2014 to allow trucking of many juvenile salmon from hatcheries Rio Vista and San Francisco Bay. However, a significant portion of salmon raised at USFWS's hatchery on Battle Creek, and some fish from other hatcheries, were released into streams near the hatcheries in order to save the costs of transport. In April 2014, elevated water temperature and poor water quality precipitated a disease outbreak at the Merced River Fish Hatchery, causing the loss of many fish and the more-or-less immediate release of remaining juveniles. At the May 6 workshop, Carl Wilcox from CDFW reported that many hatcheries will not be able to operate over the summer because water in adjacent reservoirs will not be cold enough to keep the fish in good condition.

From December 1, 2013 through mid-April 2014, flow of the San Joaquin River at Vernalis did not exceed 1250 cfs on any day, even during rain events. Flows were increased to about 2700 cfs during the second half of April, and have been running about 2250 from May 2 to May 10. However, as allowed by the April 18 Order, exports have matched the flows in the San Joaquin since the San Joaquin pulse flows began in mid-April; this has severely reduced the potential benefit of these pulse flows by increasing reverse flows and the likelihood that outmigrating salmonids will be pulled out of their corridor to Suisun Bay and into Frank's Tract and towards the Delta pumps.

The Sacramento River was held at releases under 4000 cfs from Keswick from December through mid-April. It experienced flow spikes from unregulated tributaries in February and March. The storm-driven flow pulses likely had a benefit for outmigrating Sacramento River salmon. However, very low (<7500 cfs at Verona) average daily flow outside storm runoff periods for the majority of the last six months created extremely poor conditions for migrating and rearing salmon and steelhead. Releases from Keswick ramped up about May 1, and on May 10 are greater than 7000 cfs, but these augmentations have been diverted for Sacramento Valley irrigation. Sacramento River flow at Verona dropped steadily in April and is less than 5000 cfs at Verona on May 10. It will only go down from this point forward until fall or winter rains; peak runoff has already taken place in most Sacramento River tributaries. The Sacramento River flow requirement at Rio Vista plus exports (including transfers) will, going forward, drive almost all Delta inflow.

During the period since January 31, a relatively large number of Delta smelt have held in Cache Slough in the northern Delta and in the adjacent Sacramento Deepwater Ship Channel. Numbers of Delta smelt that were present in Suisun Bay in March have dropped substantially; outside the north Delta, most Delta smelt are now in the Central Delta, including right at the mouth of Three Mile Slough and right at the mouth of Old River. Longfin smelt have also moved up into the area near the confluence of the Sacramento and the San Joaquin at the lower end of Sherman Island. Decreased Delta outflow and increased exports (allowed pursuant to transfers as well as 1500 cfs of Project exports per se) will move the low salinity zone into the

Central Delta and pull both Delta smelt and longfin smelt towards the Delta pumps. This will replicate and in fact be worse than the disastrous conditions for Delta smelt that occurred in 2013, when low outflow combined with lethal water temperatures when Delta smelt were in the Central Delta. Particularly problematic would be moving smelt upstream from Emmaton to Three Mile Slough: Three Mile Slough is a more or less direct conduit for reverse flows into the Central Delta. In the almost complete absence of San Joaquin River flow, smelt that enter Three Mile Slough will move down Old River into Franks Tract. A barrier at the mouth of False River might reduce entrainment of Delta smelt towards Franks Tract. However, barriers in the north Delta would reduce flow into Cache Slough and jeopardize the habitat currently being most densely used by Delta smelt.

In summary, benefits to fish over the past three plus months have occurred by virtue of actions by CDFW and USFWS to move hatchery salmon downstream of the Delta, and by virtue of a few fortuitous storm events that now appear to have ended. From this point forward, conditions for fish get worse.

The use of temporary urgency change orders to manage drought conditions is contrary to law and not in the public interest.

In a statement in response to a question from Chair Marcus during the May 6 Workshop, Executive Director Tom Howard stated that during the hearings prior to Decision 1641 he had anticipated that Temporary Urgency Change Orders would be used in “outlier” years. Mr. Howard continued that since “the court” had told the Board to implement the Water Quality Control Plan, the Board was required to have a Governor’s proclamation in order to issue such Orders. Mr. Howard also recommended against holding an evidentiary hearing regarding the latest Order (or recent Orders), because most of the actions they consider have already taken place. But what has not yet taken place is the summer operations contemplated both by the latest Order and in the hearings prior to D-1641. Those operations as proposed by the April 8 DWR and Bureau Drought Operations Plan ignore the Board’s D-1641, taken after almost three months of evidentiary hearings.

One of the main things that CSPA participants recall from the D-1641 hearings is the amount of time that was spent and evidence that was submitted and discussed concerning Critically Dry year flow requirements. The rationale for those requirements was as rock bottom conditions with bare bones minimum requirements for fisheries protections. At no time in the D-1641 hearings did Mr. Howard or other Board staff discuss outlier conditions; had this been on the record, it would have been addressed in subsequent litigation.

CSPA thought then and CSPA and other Protestants still think that D-1641 Critically Dry year flow requirements are too low and not protective; they were made before the Pelagic Organism Decline and contributed to it. However, to go even lower is literally a race to the bottom and is not defensible under current conditions, if it is defensible under any.

The Board should consider the effects of its actions for both short-term and long-term Project operations.

As Mr. Dante Nomellini from the Central Delta Water Agency described during the workshop, water now in Project reservoirs will be exported (above the titular 1500 cfs Project maximum) by means of transfer. On May 9, Garden Highway Farms and Plumas Mutual, senior contractors who hold water rights pursuant to settlements with the SWP, petitioned for transfers through Delta export facilities, proposing to bypass part of their irrigation diversions so that the bypassed water may be exported through Delta pumps. At the Board's April 29 "Listening Session" on transfers, DWR staff stated that it anticipated increasing petitions for transfer by both CVP and SWP north-of-Delta contractors in the coming months.

The Projects do not propose to meet Delta standards to support these transfers. The fisheries protections in DWR and the Bureau's Drought Operations Plan are scaled to minimum export levels (1500 cfs). Conserved water, far from being stored, will be exported. The transferring parties are, equally, not obligated to help meet the standards scaled to increased exports. As we stated in our March 3 protest, the more water is exported, the worse the conditions for fisheries become.

Mr. Paul Minasian, representing the San Joaquin Exchange Contractors, suggested at the May 6 Workshop that the Board allow export of an additional 200 TAF from Shasta in order to meet 75% of San Joaquin Exchange Contractor allotments. Absent exports of water whose origin is north of Delta, Mr. Minasian suggested that his clients would call on water from the Friant Division of the CVP, thus potentially shorting contractors on the Friant-Kern Canal. Calling on water from the Friant Division is the contract right of Mr. Minasian's clients. However, Mr. Minasian has no legal or contract right to ask the Board for additional water from Shasta. D-1641 and California law envision that Mr. Minasian's clients would make the call on Friant. To allege, as Mr. Minasian suggested at the workshop, that thus shorting Friant farmers would break "the system" is based on an incorrect interpretation of the facts and the law. Alternatively, 200 TAF of additional release from Shasta or other Project reservoirs could allow the Projects to meet numeric Delta outflow standards for about 100 days. What Mr. Minasian termed "flexibility" and "not standing on legal specifics" is simply a repetition of the Projects' standard operating procedure of taking water from environmental protection and using it for exports, particularly during dry year sequences. Mr. Minasian's proposal to more heavily rely on hatcheries for fisheries protection in order to support added exports is particularly inappropriate in the face of the non-viability of many hatchery operations due to lack of cold water, as discussed above.

Mr. Ron Milligan from the Bureau explained on May 6 that the Bureau does not keep Project reservoirs at maximum pool to protect against a three year drought. Mr. John Lehigh from DWR stated in response to the South Delta Water Agency that he felt that DWR had been diligent because it had held an additional 500 TAF in storage in Oroville in 2013 that it had contracted for, thus leaving Oroville storage at about 1.1 MAF. Mr. Lehigh also cited the fact that DWR had reduced allocations in 2013 from 40% to 35%, and stated that DWR had had concerns about taking action "prematurely."

It wasn't enough. The Projects got caught out. The "normal operation" of the SWP and the CVP is to weight risk in favor of exports and to plan to cut corners on standards as water becomes short. As CSPA and C-WIN stated on May 6, we know of no cases where there have been consequences for DWR and the Bureau when the Projects have failed to meet Delta standards. Two go-forward steps are clear: first, in the long term, the Projects need more restrictive carryover storage requirements, to answer not only sequences such as 2012-2014, but also sequences such as 2001-2004 and 2007-2009. Second, the Projects in the short term should be required to live with the consequences of shifting risk to storage and to the environment. They should at least be required to meet D-1641's Delta standards now. If those standards are not met, then transfers that increase exports above those needed for health and safety should not be allowed.

It would be hard to over-emphasize the importance of the Board's current decision. It goes to the credibility of the Board and to the meaning of its past decisions. Do the Projects have a separate set of rules whereby they can prioritize exports over water quality standards and rely on the Board to excuse them? At what point do flow variances and temporary transfers simply become the way of doing business in every multi-year sequence of dry year conditions? What is the value of Dry and Critically Dry year standards that in varying degrees are routinely and predictably violated? Is adaptive management simply the process by which the Project operators, the fisheries agencies and the Board negotiate triage for resources that they have failed to protect?

The Board should restore public accountability and oversight to the management of Project operations for the duration of the drought.

Since the first Order on January 31, what we described in our March 3 protest as the "shotgun adjudication of water rights with no rules of evidence and no public accountability" has become a solidified routine. Due process regarding operation of the Projects has purely and simply been abolished. The Projects submit a request for modification pre-approved by the fisheries agencies, and within a day the Executive Director orders it so. The April petitions were not even made public before the deal was done. The limitation of exports to levels necessary for "health and safety" was abandoned on March 18. While export opportunities have expanded, outflow requirements have been reduced to levels that threaten the continued existence of listed species. The April 18 Order required a pulse flow in the San Joaquin River, but allowed export of every acre-foot of additional water released from the Stanislaus River. Protests have been filed after each new Revised Order; each has been dutifully posted to one of the Board's drought webpages, a museum of dead letters. The Board has not defined its process in writing; no petition is noticed before the fact; no protests are responded to; no hearings are held. The deadline for "comment" on the April 18 Order was limited to ten days for no apparent reason; the actions allowed were implemented before the close of the comment period.

The Board has a simple recourse to restore due process to its oversight of 2014 Project operations under drought conditions. It should hold a targeted evidentiary hearing on the following specific points:

- A. Summer 2014 operations for the Projects, fisheries protections, and necessary 2014 end-of-year carryover storage requirements.
- B. How much water if any is available for export in 2014.
- C. How transfers in 2014, particularly from settlement contractors to recipients south of Delta, will be addressed, and under what conditions they will be allowed.
- D. How much inflow to Project reservoirs greater than reservoir releases can be stored in Project reservoirs to meet the public interest, and how much must be released to senior water rights holders downstream.
- E. Other issues related to any existing and potential conflicts between the Board's public interest determination on this issue and the water rights priority system.

The Board should also redefine its relationship to the Real-Time Drought Operations Management Team should that entity continue to exist.

The Drought Operations Plan¹ published on April 8, 2014 by DWR and the Bureau illegally plans next year's operations of the SWP and CVP to meet the same conditions of non-compliance as this year.

The Drought Operations Plan published on April 8 by DWR and the Bureau describes on page 8 the outcome of this year's action on carryover storage should next year also be a dry year: "This level of carryover storage would also be sufficient under even drier conditions assuming the implementation of management actions in 2015 similar to those being put into practice this year. These actions have included modifications to implementation of D-1641 standards... ."

As stated previously, it is not in the public interest and contrary to law for DWR and the Bureau to routinely operate the SWP and CVP to violate D-1641 standards, and for the fisheries agencies and the Board to allow such operation. It would be equally not in the public interest and contrary to law for the Board to allow operations this year that will allow compliance only if next year is not a dry year. This construct reveals in a different way that this year's operations are not temporary, but are being promulgated as a new default for multiple dry year operations.

The Board should require operations that incorporate plans to comply with D-1641, should next year also be a dry year. Since the Board, in determining summer operations, will be defining next year's operation if next year is a dry year, the Board should also compel the Projects and the fisheries agencies to defend their planned operations in an evidentiary hearing, before the Board determines operations for this summer.

Protestants object to any determination by the Board of this year's summer operations in the absence of public due process.

¹ "Central Valley Project and State Water Project Drought Operations Plan and Operational Forecast, April 1, 2014 through November 15, 2014," cited in the April 9, 11 and 18 Revised Orders.

The operations approved in the May 2, 2014 Order will have an unreasonable effect on fish and wildlife.

Allowing export equivalent to the entire volume of the San Joaquin pulse flow will lead (or has already) led to the loss of the vast majority of outmigrating San Joaquin juvenile salmon and steelhead, because these juveniles will be pulled into south of the San Joaquin River towards the Delta pumps.

Allowing continued export greater than volumes required for health and safety while not meeting D-1641 Table 3 and/or Table 4 requirements will have unreasonable effects on salmon and steelhead and also on pelagic species. Allowing transfer of non-Project water through export facilities over and above limitations on Project exports will have unreasonable effects on salmon and steelhead and also on pelagic species.

CSPA has attached an analysis of impacts to anadromous and pelagic fisheries of DWR and the Bureau's April 8 Drought Operations Plan, and a point by point rebuttal of the Effects Analysis that DWR and the Bureau submitted with their April 29 Temporary Urgency Change Petition.

Under what conditions may this protest be disregarded and dismissed?

1. The May 2 Temporary Urgency Change Petition should be denied, and the May 2 Order and all previous Orders should be rescinded.
2. If the Petition is not denied and the previous Order and previous iterations are not rescinded, the Order should be modified to forbid Project exports of any sort through south Delta Project facilities including water secured through groundwater substitution, except for those quantities of water required for health and safety, until the projects are being operated to meet D-1641 requirements..
3. If the Order is not rescinded, it must be modified to forbid export of transferred water except that needed for health and safety until the Projects are being operated to meet D-1641 requirements.
4. The Board must make a finding on the adequacy of the April 8, 2014 document by DWR and the Bureau entitled "Updated Report to SWRCB on Export Amounts to Maintain Health and Safety during Drought" and must determine how health and safety is defined for the purposes of the Order. The Board must also require quantification and location of deliveries for health and safety.
5. The Board must hold an evidentiary hearing that addresses the following specific topics:
 - A. Summer 2014 operations for the Projects, fisheries protections, and necessary 2014 end-of-year carryover storage requirements.
 - B. How much water if any is available for export in 2014,
 - C. How transfers in 2014, particularly from settlement contractors to recipients south of Delta, will be addressed, and under what conditions they will be allowed.
 - D. How much inflow to Project reservoirs greater than reservoir releases can be stored in Project reservoirs to meet the public interest, and how much must be released to senior water rights holders downstream.

- E. Other issues related to any existing and potential conflicts between the Board's public interest determination on this issue and the water rights priority system.
6. The Board should direct its staff to treat its relations with the the Real-Time Drought Operations Management Team as subject to ex parte communication restrictions should this team continue to exist. The Board should not compromise its regulatory responsibilities by participating in real-time management of Projects operations that are at variance with established Board requirements. Such participation creates the at least the appearance of conflict of interest and inappropriate ex parte consultation.
 7. The Board should require DWR and the Bureau to post on their websites comprehensive updates of the actions of the Real-Time Drought Operations Management Team, no less frequently than once a week, as long as any relevant Temporary Urgency Change Order is in effect.
 8. The State Board should require the Real-Time Drought Operations Management Team to provide a detailed operations update at the beginning of each Board meeting as long as any relevant Temporary Urgency Change Order the Order is in effect.

A true copy of this protest has been served upon the petitioners by e-mail (see below).

Date: May 13, 2014

Chris Shutes, Water Rights Advocate
California Sportfishing Protection Alliance



Bill Jennings, Executive Director
California Sportfishing Protection Alliance



Barbara Vlamis, Executive Director
AquAlliance



Carolee Krieger, Executive Director
California Water Impact Network



Michael Jackson
Counsel to California Sportfishing Protection Alliance,
AquAlliance, and
California Water Impact Network

/s/ Michael Jackson

Pursuant to the May 2, 2014 Notice of Temporary Urgency Change Petition, we have filed this protest, objection, petition for reconsideration and petition for hearing via e-mail to:

Michael.Buckman@waterboards.ca.gov

Also pursuant to the May 2, 2014 Notice of Temporary Urgency Change Petition, we have served this protest, objection, petition for reconsideration, and petitions for hearing via e-mail to the following:

Department of Water Resources, c/o James Mizell: James.Mizell@water.ca.gov

Regional Solicitor's Office, c/o Amy Aufdemberge: Amy.Aufdemberge@sol.doi.gov

U.S. Bureau of Reclamation, Paul Fujitani: pfujitani@usbr.gov

A Review of

**Central Valley Project and State Water
Project Drought Operations Plan
And Operational Forecast
April 1, 2014 through November 15, 2014**

Balancing Multiple Needs in a Third Dry Year



10 May 2014

Summary and Conclusions

State Board Orders and the April Drought Plan call for changes in Delta water quality standards that increase already high risks to listed salmon, steelhead, and smelt.

1. Decreased outflow requirements in spring and summer will reduce the amount of low-salinity habitat in the Delta critical to Longfin and Delta smelt, and reduce migration cues for salmon and steelhead that must pass through the Delta from Central Valley rivers to the ocean.
2. The proposed change in lower Sacramento agricultural water quality standard from Emmaton to Three Mile Slough will raise Delta salinities and allow further reductions in Delta outflows to the detriment of smelt, salmon, and steelhead.
3. Allowing 1:1 export of water transfers and the San Joaquin Apr-May flow pulse along with the shift of exports to the Tracy (Jones) pumping plant will severely reduce survival of San Joaquin Valley rivers' salmon and steelhead production by eliminating their migration corridor in April and May.
4. Potential barrier installations at the head of Sutter and Steamboat sloughs in the summer will lead to reduced Delta inflow and outflow and a reduction in the freshwater inflow to the critical Cache Slough smelt habitats in the North Delta.
5. Potential barrier installation on West False River, if accompanied by opening of the Delta Cross Channel and a positive Q-West flow, could have beneficial effects. However, this barrier would impact boating and full environmental and public review would need to occur before CSPA could support this proposal.

Introduction

The Drought Operations Plan and Operational Forecast (the Plan) was formulated in early April by the U.S. Bureau of Reclamation (Reclamation), California Department of Water Resources (DWR), U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), California Department of Fish and Wildlife (CDFW), and the State Water Resources Control Board (State Water Board). The Plan included a series of emergency measures including several Delta channel barriers, and changes in Delta water quality standards and export operations that would conserve water in reservoirs. The Plan has since been modified based on evolving conditions, principally improvements in water supply in the Central Valley from late winter and early spring rainfall. Because of these improvements some of the emergency actions in the Plan may not be implemented; however, critical water year operations will persist because of very low reservoir and snowpack levels.

DWR continues its original request (April letters) to revise water quality standards for Delta salinity. The agency requests reductions in prescribed Delta outflow in spring and summer, and a change in the compliance location for the Agricultural Western Delta Salinity Standard.

This review of the Plan focuses on the environmental effects of the proposed emergency actions, including proposed changes in the Delta salinity standard and expected normal operations in a critical year from late spring through summer. We begin with a summary of the 2014 drought and what was being proposed in the Plan, and follow with an

assessment of what likely will occur under proposed and existing water quality standards and biological opinions for listed Delta fish species.

The Drought

The 2014 drought is a consequence of record low rainfall, snowpack, and reservoir levels through the end of January 2014. This year being the third year of a multiyear drought made conditions all the worse. But like most drought years, storms in late winter and spring usually bring some relief and 2014 was no different. Three storm periods from February to early April brought moderate flows into the reservoirs and Valley streams, as can be seen in Figure 1. Reservoir storage nearly doubled, although achieving only 50 percent of normal for spring. Snowpack remains critically low.

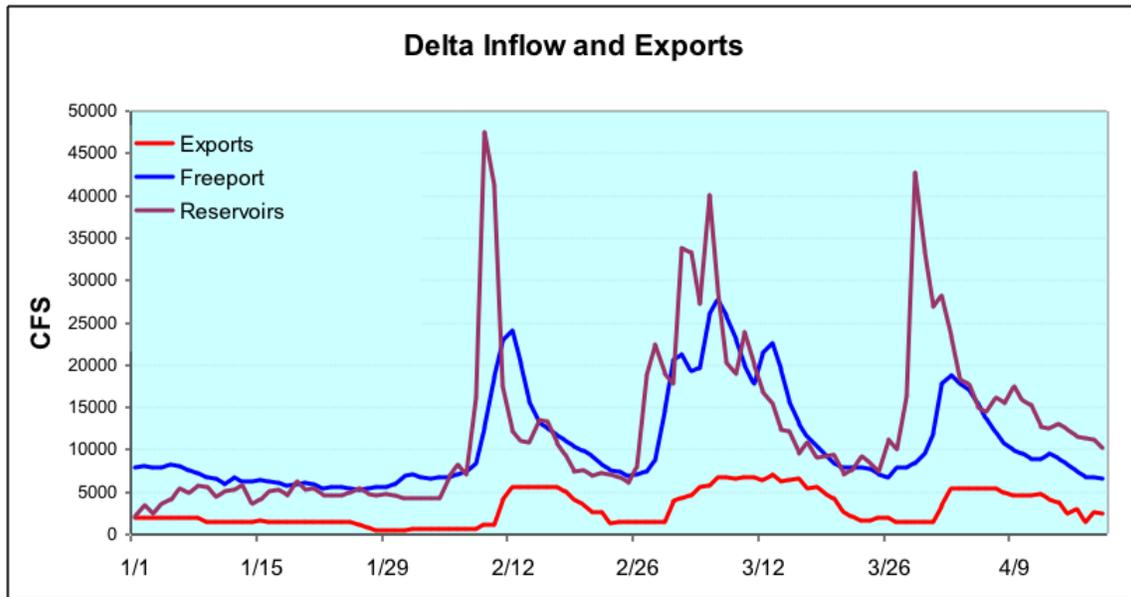


Figure 1. Total Delta exports, Project reservoirs inflow, and Sacramento River Delta inflow 2014. Reservoir inflow is total of four Project reservoirs. Exports are the total of Clifton Court and Tracy pumping plants. Reservoir inflows were stored in the four large reservoirs (Shasta, Oroville, Folsom, and New Melones). Sacramento River at Freeport flows were primarily made up of the flows of the many Sacramento Valley streams that flow undammed into the Delta. Major contributions came from Cow, Cottonwood, Battle, Deer, and Mill creeks and the Yuba River.

Drought Plan and Proposed Actions

The Drought Plan proposed a series of emergency actions including (1) installation of three channel barriers, (2) changes to Delta salinity standards, and (3) opening of the Delta Cross Channel (DCC). The actions are prescribed to save storage in reservoirs and reduce effects of salt intrusion into the Delta. The barriers would reduce salt intrusion into the Central and South Delta reducing the need for reservoir releases to hold the salt back. The change in the salinity standard would allow some salt encroachment with lower Delta freshwater outflow from lower reservoir releases. Opening the DCC would further lower salinity in the Central and South Delta, thereby reducing the amount of salt in the water exported.

The barriers, DCC opening, and changed standards are prescribed to reduce Delta freshwater inflow needs, thus saving reservoir storage. With low storage, cold-water releases from the project reservoirs (principally Shasta Reservoir) cannot be sustained through the summer. The Plan requests reductions in Delta outflows from a minimum of 3000 cfs to 2000 cfs in spring and 4000 cfs to 3000 cfs in summer, thus saving up to several hundred thousand acre-feet of reservoir storage over the next six months.

The USFWS and NMFS have endorsed the combined actions (with some caveats) because effects are not expected to have significant and dramatic effects on salmon, smelt, and other Delta species that depend on the freshwater flow and low-salinity habitat of the Delta for their reproduction and survival. The USFWS has only recently (May 2) approved the summer actions, after asking for further information and analyses before approving.

Our Assessment of the Plan

Our review of the Plan and its potential effects on listed salmon, steelhead, and smelt indicates that the risks to the species are too extreme and should be reevaluated. We believe the existing protections in dry years for salmon, smelt, and steelhead are inadequate to protect the species, and relaxing standards as proposed would further jeopardize the species and their critical habitats. It was during these multiyear droughts (1976-77, 1987-92, 2001-02, 2007-09, and 2012-14) that the most dramatic declines in the listed species and their habitats¹ have occurred. Protections under the respective biological opinions and Delta D-1641 water quality standards have proven inadequate, yet further damaging actions are being prescribed and approved by the agencies responsible for protecting the listed species and their critical habitats.

In our view, it is mismanagement of the water supply resources during the first two years of the drought that got us into this crisis of low reservoirs during this third year of drought. It is the excessive drawdowns of the reservoirs in the first and second year of droughts that causes these crises.

Winter-Spring 2014

We begin this review with an assessment of what occurred in this past winter (January through March) after Reclamation and DWR sought a temporary modification to their water rights permits and licenses on January 29. The Executive Director of the State Water Board issued an Order that granted temporary modification for the next 180 days in response to drought conditions on January 31. At the time low Delta inflows and outflows, along with prerequisite low exports were representative of the major drought of 2014 (see Figure 1). It was not until February that a reprieve from Mother Nature provided reasonable hydrology for winter-spring migrations and rearing for migrating

¹ Many of the habitat changes have had permanent consequences including the invasion of many non-native aquatic plants and animals, and catastrophic declines in many native species that depend on their native habitats.

and rearing salmon, steelhead, and smelt. Populations of Longfin and Delta Smelt that had been heavily impacted the last two years benefited from an improvement in Low Salinity Zone (LSZ) habitat, while wild salmon young had decent flows to move from Valley rivers to Bay-Delta nurseries.

The State Board’s Executive Order came in late January before the storms, when flows and exports were low. In late January it was Longfin Smelt at risk (Figure 2). The Order allowed the Projects to reduce Delta outflow below the 7100 cfs standard and thus conserve upstream storage for use later. With lower outflow (4000-5000 cfs), the LSZ and smelt larvae concentrations were in the lower Sacramento and San Joaquin River channels where the pelagic larvae are very vulnerable to being drawn to the export pumps in the south Delta. The Order also allowed the Delta Cross Channel (DCC) to be opened to reduce salt water in the South Delta exports as with the DCC closed much of the water to meet the export demand comes from north down Old and Middle Rivers from lower San Joaquin channel near Jersey Point and Three Mile Slough (Figure 3).

The lower Delta outflow put Longfin smelt at substantial risk. On each high tide 50,000 cfs of tidal flow passes east through False River from Jersey Point to Franks Tract on Old River. Given the density of Longfin Smelt larvae in the late January smelt larval survey sample at Jersey Point was 383 per 1000 cubic meters, millions of larvae were passing east into Franks Tract and Old River on each tide. Because of this vulnerability, the water quality standards called for low exports under such low Delta inflow/outflow conditions to minimize reverse flow down Old River to the South Delta export pumps. The Delta Cross Channel was opened from February 1 to February 9 to limit salt in the state and federal project exports. However, the lower exports and open DCC did not stop the tidal pumping of smelt larvae into the Central and South Delta.

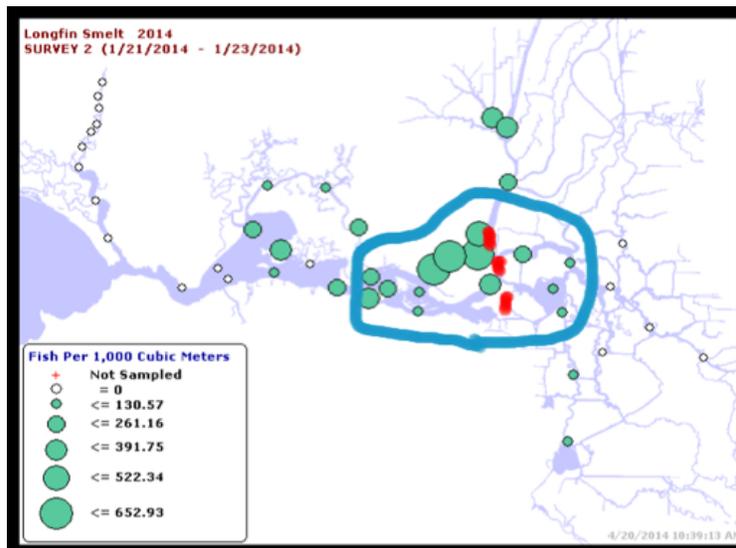


Figure 2. The Longfin Smelt larvae distribution in late January from the Smelt Larval Fish Survey. The blue boundary depicts the Low Salinity Zone (LSZ) considered the major nursery area of many native Delta fishes. The red line is the location of X2, the approximate location of the 2 parts per thousand salinity level in the estuary, which is a parameter in many Delta fish protection criteria

because young fish tend to concentrate at or near this location in the estuary. Delta outflow at this time was approximately 4600-4800 cfs. Delta exports were 2500 cfs.

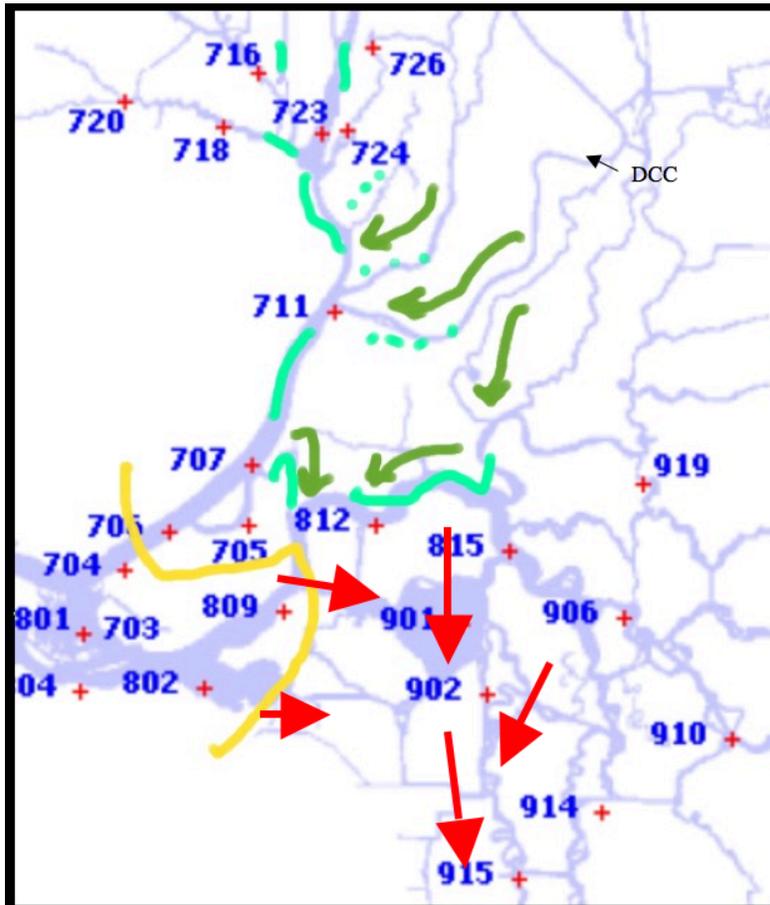


Figure 3. Late January 2014 conditions. Most of the freshwater inflow to the Delta came from the North (green arrows). Most of the export water was drawn from the North (red arrows). Low salinity Bay water occurred to the west (yellow line). Longfin and Delta smelt traditionally spawn above the low salinity zone in freshwater areas (depicted by light green lines and dots). Newly hatched larval smelt are thus vulnerable to export from the South Delta. Under these conditions about 20% of the freshwater inflow was being exported. Note these are the station numbers for the survey sampling depicted in Figure 2.

When the rains came in February, the Orders allowed higher South Delta exports accompanied by higher inflows and outflows for most of the late winter and early spring. With the rains most of the larvae Longfin Smelt shifted west with the LSZ (Figure 4). However, with the DCC again being closed, the higher Delta inflow was focused down the lower Sacramento River channel, while inflow to the lower San Joaquin River (Jersey Point to Prisoners Point) remained low. This section of river is heavily impacted by exports. With the LSZ and smelt extended upstream to Jersey Point in the lower San Joaquin channel, a portion of the smelt population remained extremely vulnerable to the increased exports. Larvae drifting downstream from spawning areas in the North Delta also remained vulnerable to drifting south into the Central Delta and Old River via Three Mile Slough.

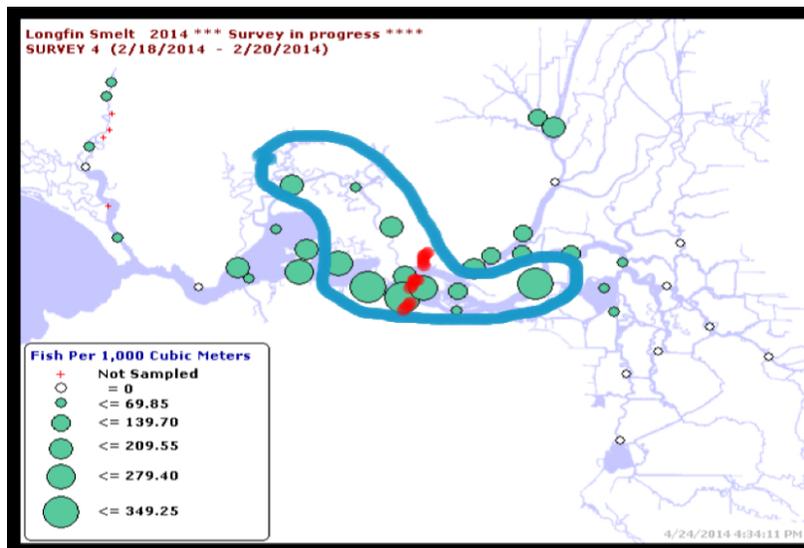


Figure 4. The Longfin Smelt larvae distribution from the Smelt Larval Fish Survey of February 18-20, 2014. The blue boundary depicts the Low Salinity Zone (LSZ) considered the major nursery area of many native Delta fishes. The red line is the location of X2, the approximate location of the 2 parts per thousand salinity level in the estuary, which is a parameter in many Delta fish protection criteria because young fish tend to concentrate at or near this location in the estuary. Delta outflow at this time was approximately 7000 cfs. Delta exports were 5000 cfs. Sacramento River inflow to the Delta was 12,000 cfs. San Joaquin River inflow was 800 cfs. The DCC was closed, thus forcing most of the Delta inflow down the lower Sacramento River and allowing the LSZ to extend upstream in the lower San Joaquin channel.

The original Order and the Drought Plan allow lower Delta outflow than Delta Plan D-1641, which contributes to the upstream movement of the LSZ with corresponding higher salinities in the West Delta. The Plan also allows moving the salinity standard for the lower Sacramento River from Emmaton to Three Mile Slough, which results in the agricultural salinity standard moving upstream from station 705 to 707 in Figure 3. Delta smelt and their LSZ habitat is subject to significantly increased risk with 35-45% of the inflow allowed for export through spring. This is the basis of the Delta smelt and salmon biological opinions, which constrain exports by limiting flows from the lower San Joaquin River down Old and Middle Rivers to minus 5000 cfs (essentially limiting exports to a maximum of 5000-6000 cfs). However, even these export restrictions do not keep smelt larvae and young salmon from being drawn into the South Delta exports.

The rains changed conditions dramatically in the Delta into March. Though much of the rain was stored in Valley reservoirs, flows from the undammed streams (especially Cow Creek and the Yuba River) passed through the Valley to the Delta. The higher Freeport Delta inflows (Figure 1) freshened the Delta and allowed more exports under the existing export rules (exports are allowed under the standards and orders to rise to 35% as long as outflow is above 7100 cfs). Even with exports nearing 6,000 cfs, the increase inflow and outflow benefitted fish habitat by pushing the LSZ and X2 downstream, west toward the Bay. While the smelt in the LSZ were somewhat less vulnerable to exports, the Longfin and Delta Smelt larvae moving downstream from spawning areas in the North Delta were vulnerable to being diverted to the increasing exports especially with the DCC closed

(Figures 5 and 6). With the DCC closed, most of the new inflow came down the lower Sacramento River channel while most of the export water came from the central Delta where smelt were concentrated. (Note: Opening the DCC and maintaining a positive Q-West flow in the San Joaquin River would move the LSZ downstream in the lower San Joaquin channel further from the influence of the exports - the lower right extension of the LSZ at station 809 in Figure 3 would be moved further west).

These conditions are the norm for late winter and early spring in drier years under the existing Delta standards as shown in Figures 7 and 8 for March 2013. Under the existing standards, Longfin and Delta smelt are simply not protected from Delta exports of 5000 cfs allowed under the OMR limits of the biological opinions, especially with the DCC closed and a negative Q-West. The relaxation of the 7100 cfs outflow standard through June, albeit under the restricted export limit of 1500 cfs, places the smelt populations at extreme risk, especially when rainstorms and increased Sacramento River inflow allow exports to increase to the OMR limit of 5000 cfs.

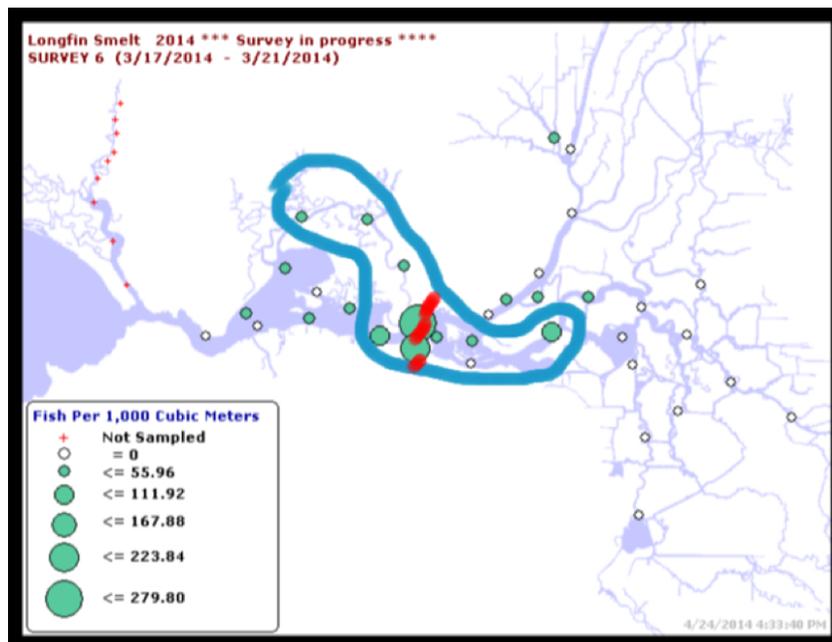


Figure 5. The Longfin Smelt larvae distribution from the Smelt Larval Fish Survey of March 17-21, 2014. The blue boundary depicts the Low Salinity Zone (LSZ) considered the major nursery area of many native Delta fishes. The red line is the location of X2, the approximate location of the 2 parts per thousand salinity level in the estuary, which is a parameter in many Delta fish protection criteria because young fish tend to concentrate at or near this location in the estuary. Delta outflow at this time averaged over 7000 cfs. Delta exports were 5000 cfs. Sacramento River inflow to the Delta was 8,000-13,000 cfs. San Joaquin River inflow was 800-1000 cfs. The DCC was closed, thus forcing most of the Delta inflow down the lower Sacramento River and allowing the LSZ to extend upstream in the lower San Joaquin channel.

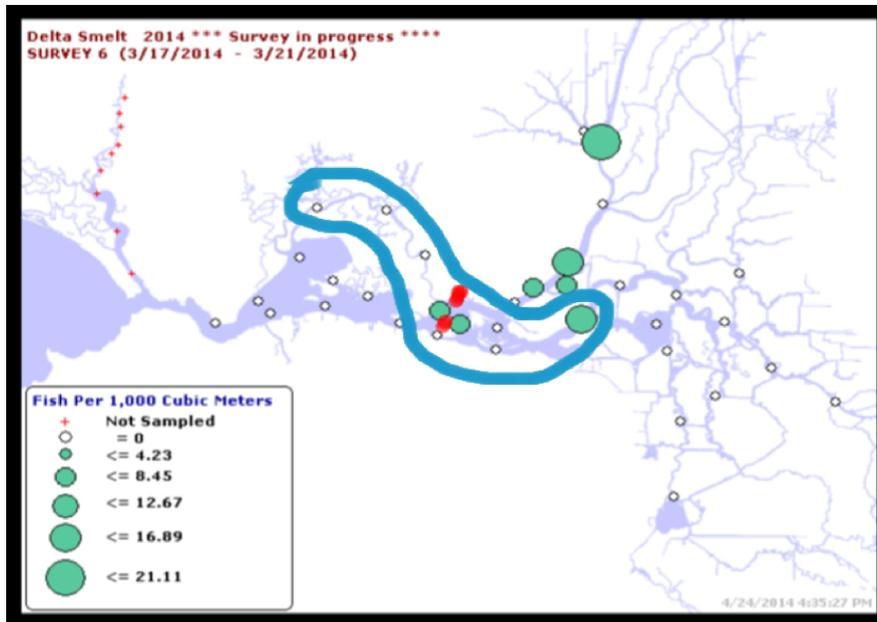


Figure 6. The Delta Smelt larvae distribution from the Smelt Larval Fish Survey of March 17-21, 2014. The blue boundary depicts the Low Salinity Zone (LSZ) considered the major nursery area of many native Delta fishes. The red line is the location of X2, the approximate location of the 2 parts per thousand salinity level in the estuary, which is a parameter in many Delta fish protection criteria because young fish tend to concentrate at or near this location in the estuary. Delta outflow at this time averaged over 7000 cfs. Delta exports were 5000 cfs. Sacramento River inflow to the Delta was 8,000-13,000 cfs. San Joaquin River inflow was 800-1000 cfs. The DCC was closed, thus forcing most of the Delta inflow down the lower Sacramento River and allowing the LSZ to extend upstream in the lower San Joaquin channel.

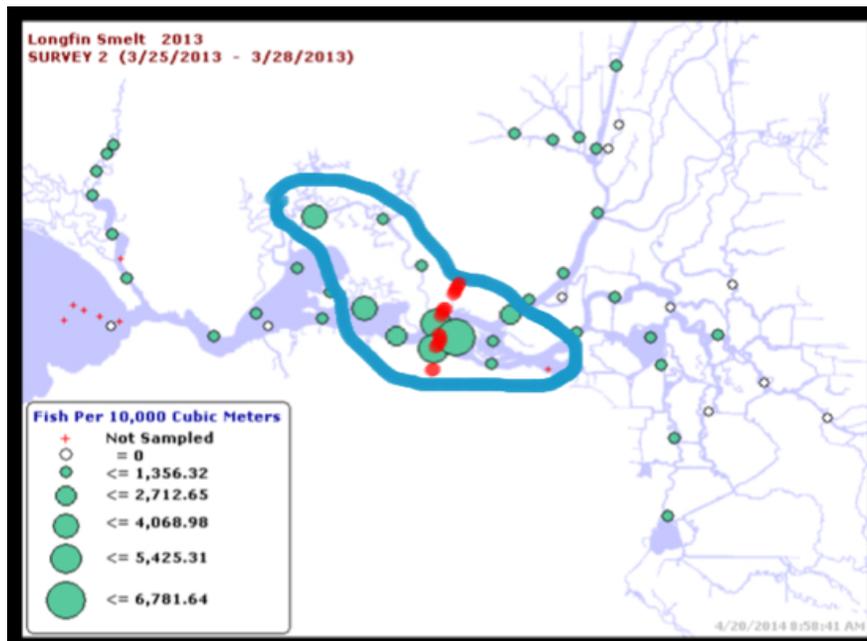


Figure 7. Longfin Smelt distribution in Smelt Larval Survey in late March 2013. Exports were near 5000 cfs, outflow was 7000-8000 cfs, and the export/inflow ratio near 40%.

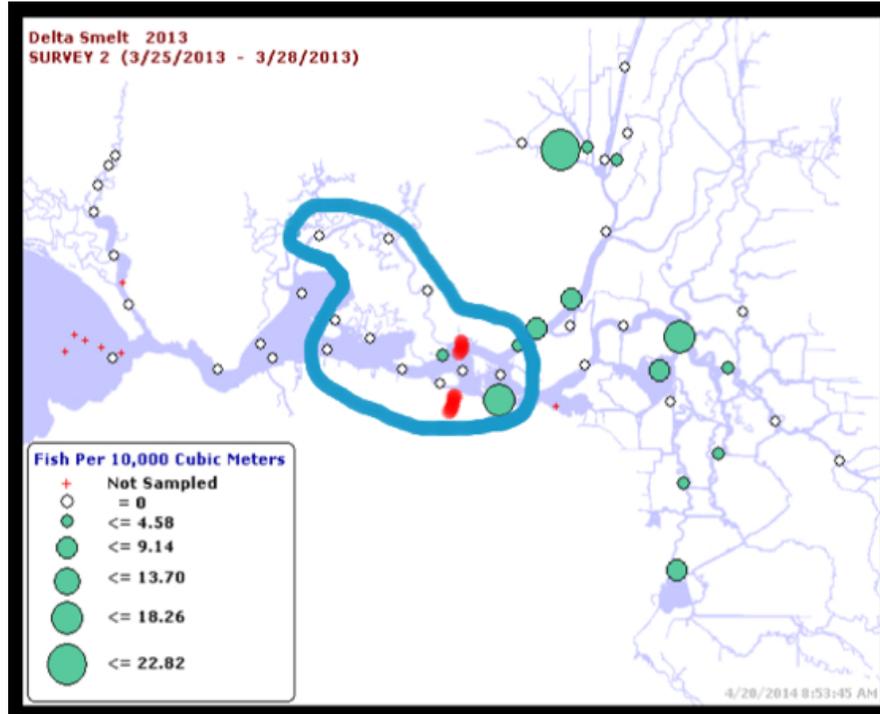


Figure 8. Delta Smelt distribution in Smelt Larval Survey in late March 2013. Exports were near 5000 cfs, outflow was 7000-8000 cfs, and the export/inflow ratio near 40%. Clearly, smelt were vulnerable to South Delta exports under these outflows. Reduction of outflows allowed under the Orders to 3000-4000 cfs would make smelt more vulnerable to the direct (entrainment) and indirect (predation and habitat) effects of exports.

In addition to the smelt, the changes that occurred this winter and spring have also had consequences to listed salmon and steelhead. The reduced Delta outflow (relaxed 7,000 cfs Delta outflow standard to 3000-4000 cfs) reduces the migration cues of freshwater outflow from Valley rivers to the Bay. Hatchery salmon initially were provided tanker truck rides to the Delta at the beginning of April, but later were released at upstream hatcheries to move naturally with the last of the storm flows in early April. Trucking was resumed soon thereafter. Many young wild salmon moved to the Delta during the storms. The opening of the DCC in early February for a week allowed some salmon to enter the Central and South Delta, thus subjecting them to poor habitat and exports. Unlike the Sacramento Valley salmon, San Joaquin Valley salmon were subjected to low flows and the higher exports allowed under the Sacramento Valley rainstorms. These included the 50,000 hatchery spring run Chinook reintroduced to the San Joaquin in April. A switch to exporting from the CVP Tracy (Jones) Pumping Plant allowed under the Order and Plan placed more risk on the San Joaquin salmon (Figure 9). The same risk applies to listed Central Valley steelhead, especially San Joaquin populations (Figure 10). The benefits of the April-May mandated pulse flows on the San Joaquin for salmon and steelhead are negated because the State Board Order allows the pulse flows to be exported. Prior to 2010, exports were limited to 1500 cfs by the VAMP program, but now may exceed 3000 cfs. With the DCC closed essentially all the San Joaquin River inflow to the Delta is exported from the South Delta.

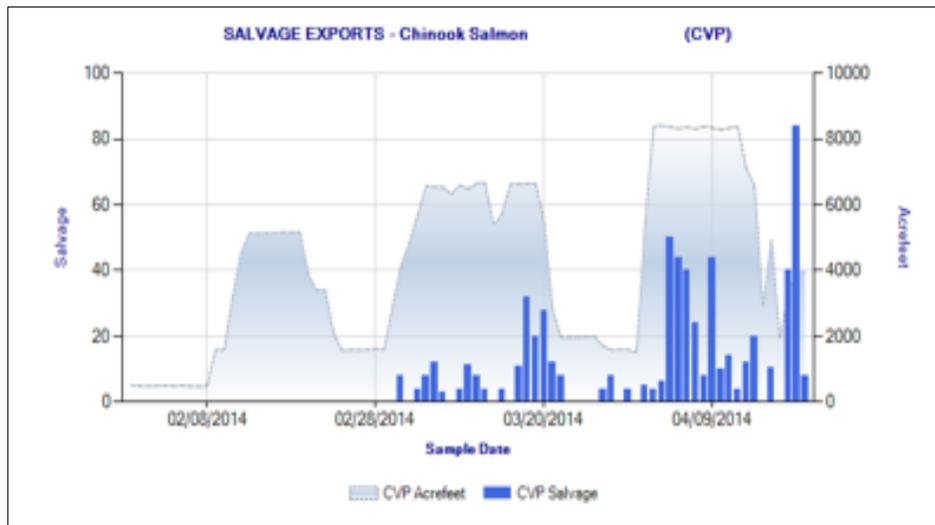


Figure 9. Winter-spring 2014 exports of salmon at CVP Tracy (Jones) pumping plant in South Delta.

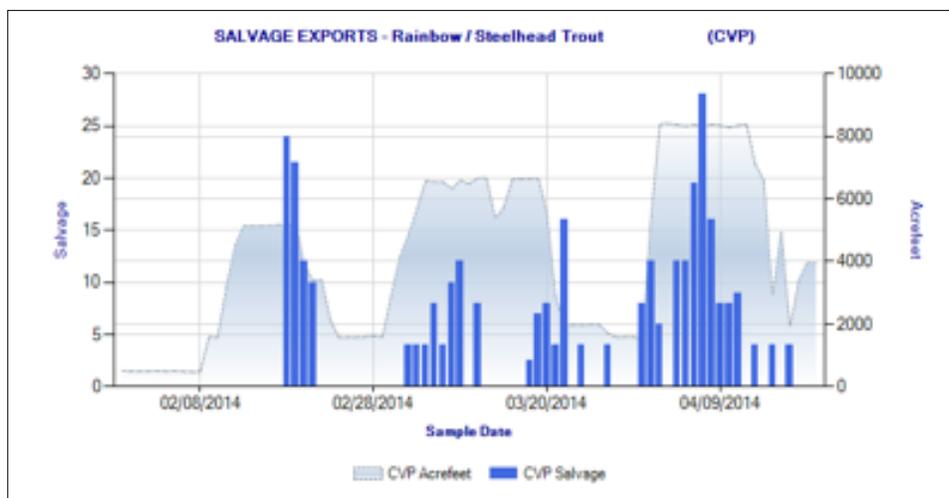


Figure 10. Winter-spring 2014 exports of listed Central Valley steelhead at CVP Tracy (Jones) pumping plant in South Delta.

Modifications of the original orders and the April Plan proposed by Reclamation and DWR would continue the relaxation of Delta salinity standards and allow reductions in outflows required under the standards through June. Smelt remain vulnerable under these conditions (Figures 11-12).

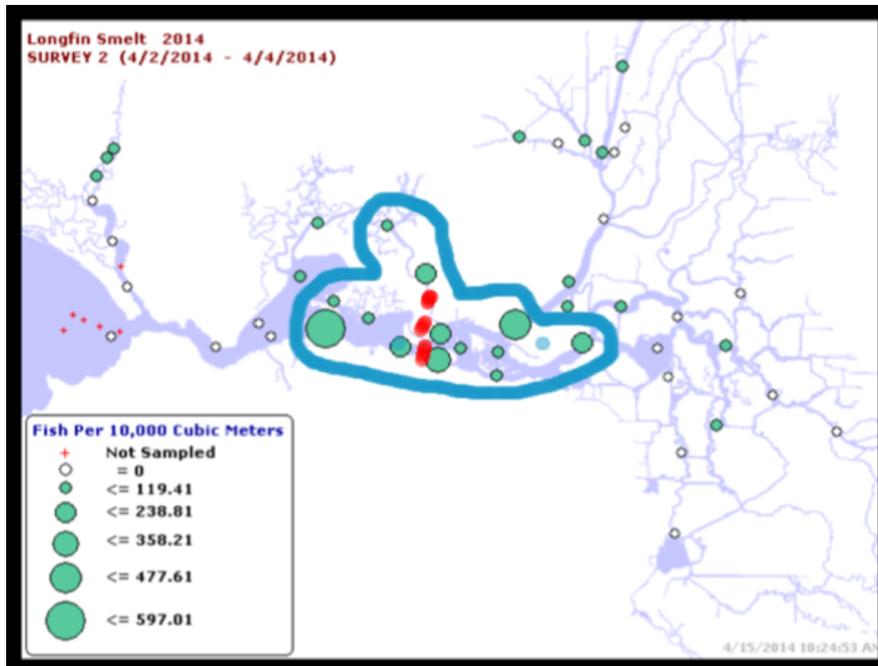


Figure 11. With higher inflows and outflows the LSZ (blue border), X2 (red line), and concentrations of larval Longfin Smelt were moved west (compared to Figure 2) by early April. However, on the lower San Joaquin, the LSZ remained upstream in the Central Delta with the DCC closed under the higher exports.

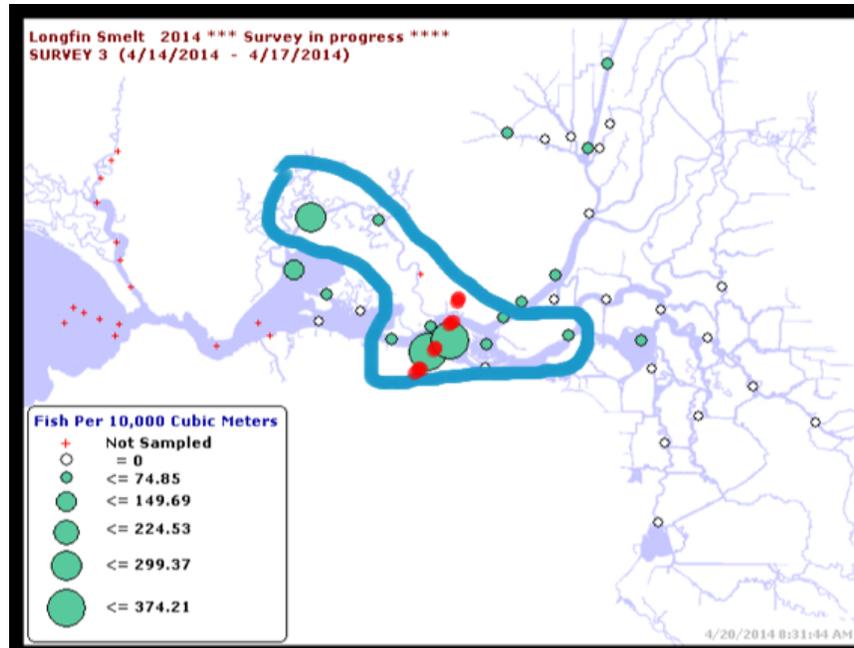


Figure 12. With higher inflows and outflows the LSZ (blue border), X2 (red line), and concentrations of larval Longfin Smelt were moved west (compared to Figure 2) in mid April. However, on the lower San Joaquin, the LSZ remained upstream in the Central Delta with the DCC closed under the higher exports.

The Order and Drought Plan will result in additional changes for May and June. The basic rules that include the 35% export/inflow standard, 7100 cfs outflow requirement, minus 5000 cfs down Old and Middle Rivers (OMR biological opinion restrictions), and X2 located on average at Jersey Point on the lower San Joaquin River and Emmaton on the lower Sacramento River (stations 809 and 704, respectively in Figure 3) remain unchanged. The changes proposed are to move the salinity (X2) standard to Three Mile Slough (station 707) and to reduce outflow to 3000 cfs minimum. The DCC normally remains closed for most of the period, but could be opened under the Plan.

Longfin and Delta smelt will remain vulnerable to exports under these conditions as seen in Figures 13 through 15 under similar circumstances from spring 2013 surveys. If the inflow and outflow required to export cannot be met by rainfall or reservoir releases, conditions would revert to the minimum exports and outflows of the State Board order (1500 cfs plus an unknown volume of water transfer exports and 3000 cfs outflow), except that the San Joaquin pulse flow (3000 cfs) and water transfers can be exported on a 1:1 basis. These would result in conditions slightly worse than shown in Figure 2. Allowing the Emmaton salinity standard (2.78 EC) to be moved to Three Mile Slough (TMS) would result in high risk to smelt as in Figure 2 when there was a steady stream of smelt and brackish water moving down Old River to the South Delta export pumps. (Note: while the distance between EMM and TMS is only about 2.5 miles the effect is significant because much of the flow to the South Delta exports from the Sacramento River is through TMS (the remainder is from Georgiana Slough). The change can markedly reduce net freshwater flow in the lower Sacramento River channel above and below TMS and potentially change EMM salinity from 2 to 5 EC and allow X-2 (the red line in Figure 13) to move upstream two miles and result in further reduction in Delta outflow.

Through the remainder of May and June Longfin and Delta smelt will remain vulnerable to exports with or without reservoir releases. With the opening of the DCC in late June, risks to smelt could be reduced, as several thousand cfs of fresh Sacramento River water would be drawn down the Mokelumne River channels into the Central Delta. While smelt would likely benefit from the change, more young salmon from the Sacramento River would be diverted to the East and South Delta and, potentially, to the export pumps unless a positive Q-West was maintained.

As noted, the risk to Delta Smelt and Longfin Smelt from water exports would likely be reduced throughout the May-June period if the DCC were opened and a positive Q-West maintained on the San Joaquin River because the LSZ would be pushed westward. Installation of barriers on False River and Dutch Slough (the two red arrows pointing east in Figure 3 toward stations 901 and 902) could potentially provide additional benefit because they would reduce smelt and their habitat from being drawn into Franks Tract toward the export facilities. However, the False River and Dutch Slough barriers would be problematic for boating in the area and, in any case, would need to undergo complete environmental assessment and public review (something that is not likely to occur) before

CSPA could be supportive. More detail on this subject is provided in Figures 16, 17, and 18.

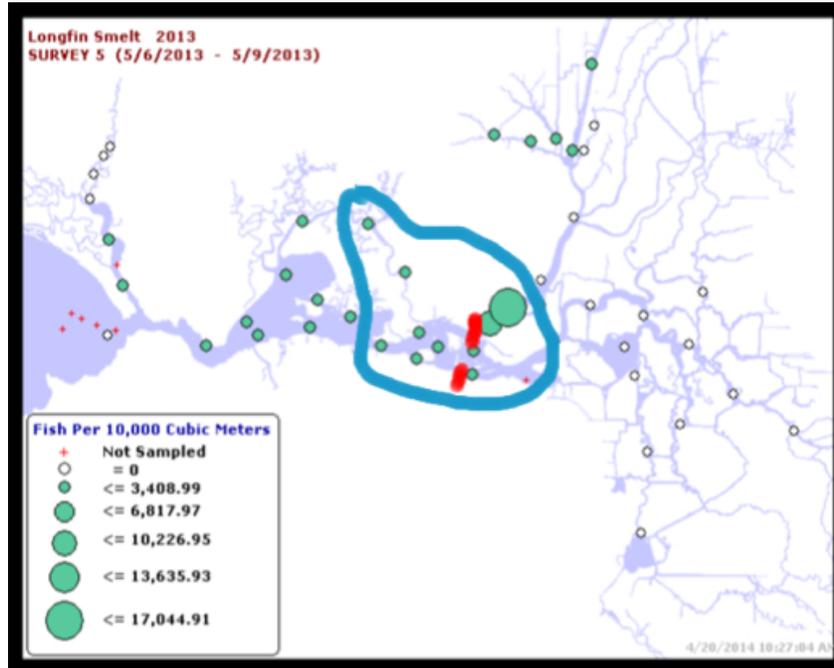


Figure 13. Longfin Smelt distribution in 20-mm Survey in early May 2013. With higher inflows and outflows the LSZ (blue border), X2 (red line), and concentrations of larval Longfin Smelt are in West Delta, but remain vulnerable to exports with the DCC closed.

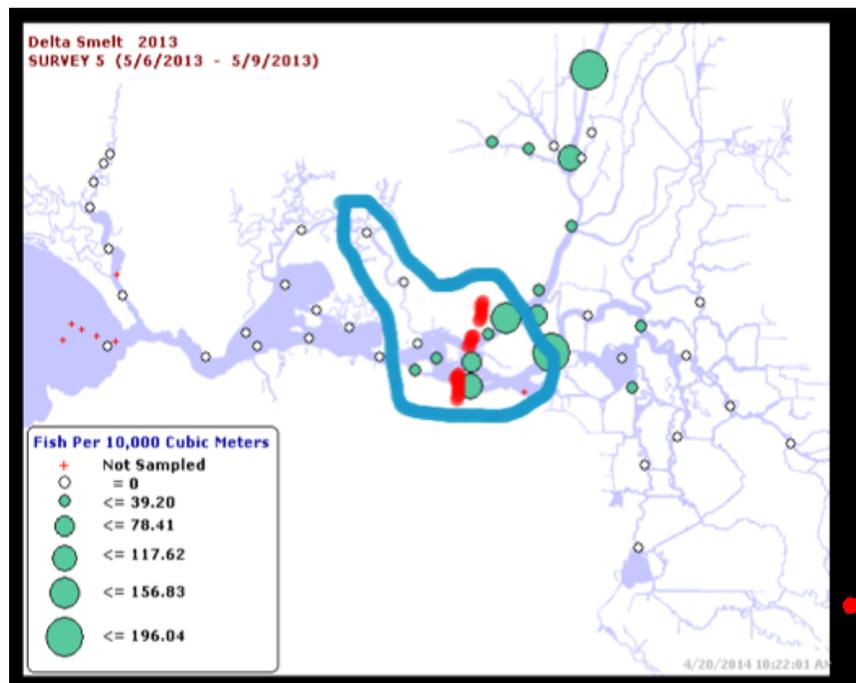


Figure 14. Delta Smelt distribution in 20-mm Survey in early May 2013. With higher inflows and outflows the LSZ (blue border), X2 (red line), and concentrations of larval Delta Smelt are in West Delta, but remain vulnerable to exports with the DCC closed.

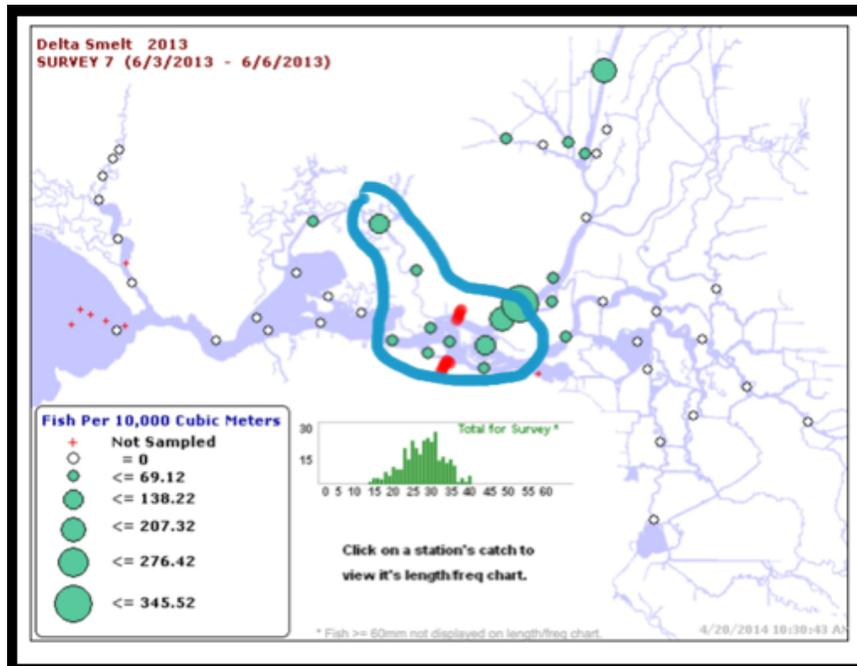


Figure 15. Delta Smelt distribution in 20-mm Survey in early June 2013. With higher inflows and outflows the LSZ (blue border), X2 (red line), and concentrations of larval Delta Smelt are in West Delta, but remain vulnerable to exports with the DCC closed.

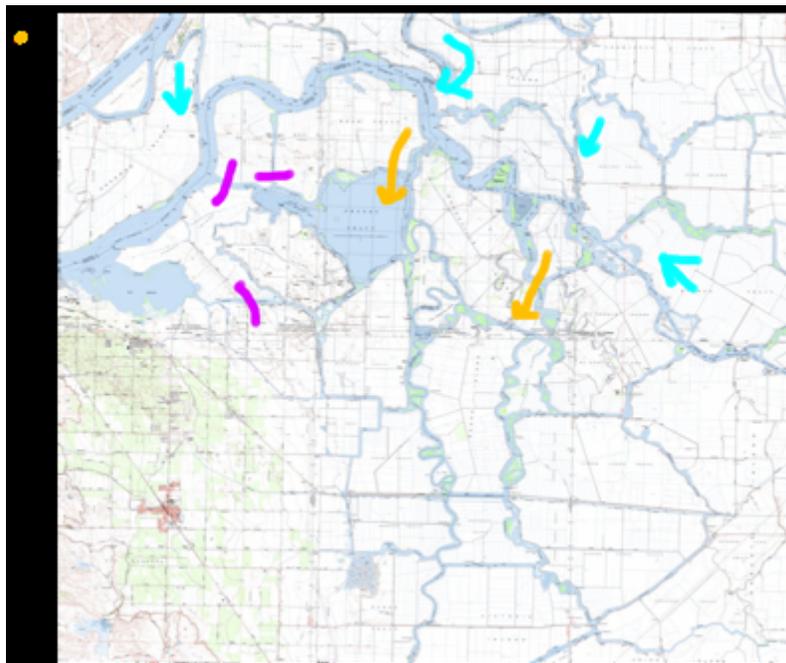


Figure 16. Barriers on the channels between the West Delta and Franks Tract in the Central Delta (purple lines) would increase the proportion of South Delta export water (orange arrows) coming from the East Delta (right three blue arrows) and reduce water coming from West Delta and Three Mile Slough (left blue arrow).



Figure 17. West Delta connections to Central Delta. Under existing rules in May and June with the DCC closed, most of the South Delta export water is drawn from the north via Franks Tract and Old River. Water flows to this route via the three yellow arrows in this photo. Turbid West Delta water can be seen flowing east across Franks Tract from False River. Freshwater enters the area from the north (Sacramento River) via Three Mile Slough (left blue arrow) and Georgiana Slough (right blue arrow). Barriers on False River and Dutch Slough would eliminate flood tide flows from the West Delta to Franks Tract.

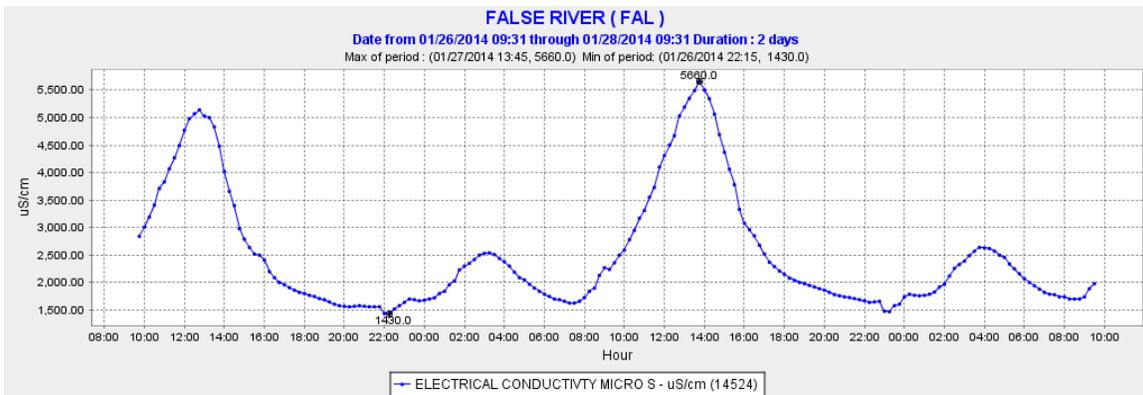


Figure 18. Chart of salinity (EC) in False River in late January during period of low outflow. Graph depicts brackish LSZ water entering False River (and Franks Tract) on flood tides. A barrier on False River would eliminate this transport of salt and smelt (see Figure 2) from the West Delta via Franks Tract on Old River to the South Delta exports.

Summer 2014 – July through September

The risk to smelt during the summer of this critical year will remain extreme despite agency assurances that smelt are not vulnerable to exports in summer. Summer Delta outflow is required to be a minimum of 4000 cfs in critical years. However, DWR requests a reduction to 3000 cfs along with the change in Agricultural salinity standard from EMM to TMS. Although the DCC is open in summer, the proposed changes will result in conditions that will put smelt and their LSZ habitat under severe risk from exports and excessive temperatures. Both the Longfin and Delta smelt reside in the LSZ through the summer. The 4000 cfs outflow standard is designed to keep smelt in Suisun Bay and saltwater out of the Central Delta.

Water temperature of 77° - 80° F (25-27C) are lethal to Delta smelt and 73° -75° F (23-25C) temperatures are highly stressful. Indeed, smelt are almost never found in 73° F waters. Drawing the LSZ eastward runs the risk of repeating the disaster that occurred in early July 2013 when exports were increased to 9000-10000 cfs and outflow dropped below 5000 cfs. The LSZ and the majority of Delta smelt were drawn into the Delta where they encountered a heat wave and warm inflow waters. Water temperatures reached 77° -80° F. and only the remnant of Delta smelt that remained in eastern Suisun Bay survived. See figures 19 and 20. Details of this event is chronicled in CSPA's report *Summer 2013; The demise of Delta smelt under D-1641 Delta Water Quality Standards*, prepared by Thomas Cannon. The Delta smelt biological opinion contains no protection for Delta smelt in July because it was believed that outflow standards were sufficient to keep smelt in Suisun Bay and a State Board reduction of Critical Year outflow standards simply wasn't contemplated.

This year, the LSZ will be further east in the West and Central Delta (Figures 19 and 20), and vulnerable to exports with only 3000 cfs outflow. Not only will smelt be more vulnerable to exports, but the LSZ is less productive and warmer when in this eastern position. A reduction in outflow to 3000 cfs would further reduce the size of the LSZ and move it further to the east. The amount of risk to the smelt and their LSZ habitat would depend on the level of exports. Summer exports are only limited by the 65% Export/Inflow restriction at present. The Plan would allow summer water transfers through the Delta at 100% or E/I of 1/1. The 1500 cfs cap on exports does not apply to water transfers, which are likely to be significant this year. Any summer water transfers under these rules would have significant negative effects on Delta Smelt. (Note: transfer water from the north cannot be passed directly to South Delta pumps, it must mix first with LSZ water.)

Because summer conditions are extremely stressful on smelt under existing rules there should be no changes that would increase the stress. Maintaining outflow at least at 4,000 cfs is essential to retain some LSZ habitat and ensure smelt are kept west of the flow to the South Delta export pumps. Reducing exports and maintaining outflows above 4000 cfs would help keep warmer eastern waters out of the Delta and LSZ. Even if outflows are at or above 4000 cfs, if smelt are found to be at high risk in monitoring

surveys, then exports should be reduced and any water transfers that would worsen the problem should not be allowed.

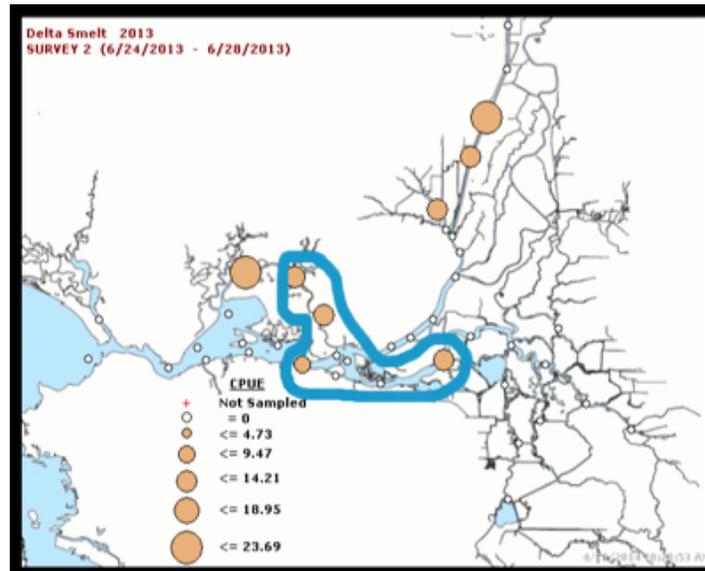


Figure 19. Summer Townet Survey for late June 2013. These are spring conditions just prior to summer conditions. Note LSZ (blue boundary) and Delta Smelt distribution. Delta inflows were rising from 12,000 to 17,000 cfs. Exports were rising from 4,000 to 6,000 cfs. Delta outflows were steady at 7,000-8,000 cfs.

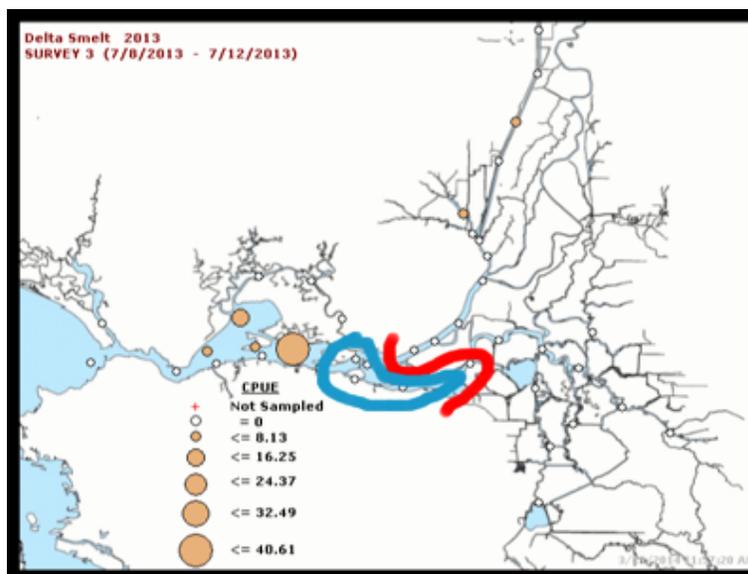


Figure 20. Summer Townet Survey for early July 2013. These are summer conditions just after spring conditions transitioned into summer. Note LSZ (blue boundary) and Delta Smelt distribution. Delta inflows had risen from 12,000 to 18,000 cfs (from reservoir releases for export). Exports had risen from 4,000 to 10,000 cfs. Delta outflows had fallen from 8,000 to 4,000 cfs. East of the red line water temperatures were greater than 23C, too high for Delta Smelt. Approximately 2/3rds of the warm inflow was going down the Sacramento River channel into eastern Suisun Bay. Surviving smelt were concentrated in western Suisun Bay in cooler slightly higher salinity brackish waters. Few smelt were observed in the warm waters of the Delta. Two locations in the north Delta with smelt were in deeper stratified waters of Cache Slough and the Deep Water Ship Channel.

A Review of
The Effects Analysis
Contained in
DWR and Reclamation Request for
Modifications and Extension of Temporary
Urgency Change Order

29 April 2014



10 May 2014

On 29 April 2014, the Department of Water Resources and U.S. Bureau of Reclamation requested a modification and extension of the 18 April 2014 State Water Resources Control Board order that approved a Temporary Urgency Change in License and Permit Terms and Conditions Requiring Compliance with Delta Water Quality Objectives in Response to Drought Conditions.¹ This review refutes the claims in the request and accompanying Effects Review that the proposed changes will have no unreasonable impact to fish and wildlife. We summarize the proposed changes, address the Effects Analysis and respond to the U.S. Fish and Wildlife Service Concurrence Memo.²

Summary of Proposed Changes

1. *“The minimum monthly Net Delta Outflow Index (NDOI) described in Figure 3 of D-1641 during the month of July shall be no less than 3,000 cfs.”*

Note: the existing requirement for May-July is 4000 cfs. August-September standard is 3000 cfs. The new request did not include a change in May-June. However the State Board issued an order that granted outflow standards of 3000 cfs for May.

2. *“Modify the critical year D-1641 Agricultural Western Delta Salinity Standard at Emmaton (14-day running average of 2.78 millimhos per centimeter through August 15) by moving the compliance point to Three Mile Slough.”*

Note: Three Mile Slough is roughly 2.5 miles upstream of Emmaton. The 2.78 millimhos EC is the equivalent of X2 – the location of 2 ppt salinity in the estuary, which is an important parameter in estuary ecology management as well as a Delta water quality standard. Placement of three salinity barriers is considered but is presently not requested but may be in the future.

3. *“The mean monthly Rio Vista flow standard in September, October, and November shall be no less than 2,000 cfs.”*

Note: the present standard varies from 3000-4000 cfs in critical years – 3000 in September, 4000 in October, and 3500 in Nov-Dec.

4. *“Vernalis: For June 1 through June 30, no specific minimum flows are required; flows will be maintained sufficient to meet D-1641 San Joaquin River EC requirements.”*

Note: standard is a minimum of 710 cfs except during Apr15-May15 flow pulse.

¹http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/20140429_petitioners_request.pdf

²http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/usfws050114.pdf

"Summary of Effects Analyses," with Comments

Department of Water Resources Cover Letter

- *"Delta water quality objectives protective of municipal/industrial and agricultural uses remain in place and the proposed combination of outflows and export levels are expected to continue to provide water quality adequate to meet the needs of beneficial uses."* (Page 3, Paragraph 1).

Contrary to the claim, resulting changes to water quality will be detrimental to beneficial uses. Salinity will increase, turbidity will decrease and water temperatures are likely to approach lethal levels for Delta smelt.

- *"This action should also not have an unreasonable impact to fish and wildlife. Reclamation has concurrence from National Marine Fisheries Service and U.S. Fish and Wildlife Service that these actions are consistent with the federal Endangered Species Act (see attached). DWR has also consulted with the California Department of Fish and Wildlife and has determined that the existing Consistency Determination would remain in effect."* (Page 3, Paragraph 2).

We find the attached analysis is seriously misleading, misuses available information and draws erroneous conclusions. We cannot fathom how a comprehensive review of DWR's analyses by the National Marine Fisheries Service (NMFS), California Department of Fish and Wildlife (DFW) or the U.S Fish & Wildlife Service (FWS) would lead to concurrence. It appears that these were administrative decision and not comprehensive analyses.

- *"severe consequences associated with depletion of reservoir capacity, the proposed changes are in the public interest."* (Page 3, Paragraph 3).

Recent winter-spring storms increased reservoir storage nearly two million acre-feet (AF). Present freshwater inflow levels and proposed further reductions will at best save somewhere in the vicinity of 200,000 AF. Spread across the entire 10-million AF reservoir system that is presently at or higher than 50% capacity, the savings are minimal and does not warrant or offset the negative effects to other beneficial uses.

Review of Analyses (attachment):

- *"The upstream relocation of the compliance point and reduction in outflows will result in salinity moving further upstream on the lower Sacramento and San Joaquin Rivers. Due to the potential for Sacramento River origin water to be transported through the Delta Cross Channel to the San Joaquin River, the upstream tidal excursion of higher salinity water is*

expected to be more pronounced on the Sacramento River than the San Joaquin." (Page 1, Paragraph 4)

Noting that Tidal flows dominate in the West Delta, we agree that salinity will move upstream on both the Sacramento and San Joaquin Rivers and throughout the Delta. The main effect of opening the Delta Cross Channel will be slightly lower salinity in the San Joaquin and slightly higher on the Sacramento side: i.e., a slightly better balance of freshwater flow in the two channels.

- *"This would cause an upstream relocation of X2 and given the general decrease in habitat with movement upstream of the low-salinity zone would result in a smaller area of abiotic habitat."* (Page 1, Paragraph 4)

The effect of reducing freshwater inflow will be higher salt concentrations in the West Delta. Therefore the 2 ppt (X2) average location will move upstream and the overall area of the low salinity mixing zone (LSZ) will be reduced. Not only will the LSZ comprise less area, but it will also be further east in both river channels. The concentration of salt in Delta exports will also increase.

- *"Although these changes will reduce the quantity of available habitat, conductivity within this habitat will be within the range of salinity generally occupied by Delta Smelt during the summer and fall."* (Page 1, Paragraph 4)

We agree that the LSZ habitat of smelt will be reduced in volume and area. However, it will be considerably warmer (perhaps approaching lethal levels), less turbid (leading to greater predation), less productive, and more subject to entrainment in exports and agricultural diversions. Greater numbers of smelt, salmon, and other pelagic fish will perish. To infer there is little effect of reduced habitat because salinity levels are still in the "range of salinity generally occupied by Delta Smelt" is simply nonsensical.

- *"Therefore we conclude that while changes in salinity in the lower Sacramento River are within the physiological tolerances of Delta Smelt, the proposed modifications are expected to shift the Delta Smelt population further upstream."* (Page 2, Paragraph 1)

Yes, the change the population of Delta Smelt upstream where habitat quantity and quality are less desirable and where smelt are at significantly at greater risk of exports drawing them further away from their LSZ habitat. Again, the fact that smelt can survive salinities at Benicia or Sacramento has nothing to do with the huge detrimental impacts resulting from degradation of their rearing habitat in the Delta.

- *"The upstream shift of Delta Smelt distribution on the Sacramento River will increase the potential for stochastic events to exacerbate mortality and density-dependent effects on the*

population (Feyrer et al. 2011). As an example of this type of event, there may be water temperature increases during prolonged heat waves that would pose risks to Delta Smelt. In general, summer temperatures are higher in landward channels (Wagner 2012), so reduced inflow is expected to shift the distribution of Delta Smelt into these warmer regions. In addition, with the constriction of X2 above the Sacramento-San Joaquin confluence, salinities may be too high downstream for juvenile Delta Smelt to move substantially seaward, where the maritime influence and larger water bodies maintain cooler water temperatures." (Page 2, Paragraph 2)

This is exactly what happened in July 2013 without changes in standards – smelt were shifted upstream when outflow suddenly dropped and experienced lethal water temperatures during the early July heat wave. Given these obviously ominous recognitions by the DWR in their own assessment rationale, it is difficult to comprehend FWS's concurrence: *"The Service, therefore, concurs with Reclamation's determination that the proposed modifications for June through November will have no additional adverse effects on delta smelt or its critical habitat." (FWS concurrence letter)*

- *"From this information it is inferred that there would be little physiological effect on Delta Smelt from changes in conductivity in the lower San Joaquin River, as the ranges are all well within the physiological tolerance ranges for salinity (Nobriga et al. 2008; Figure 6). However, the increase in salinity may alter the distribution of Delta Smelt into less favorable areas within the lower San Joaquin (e.g. Franks Tract). "(Page 2, Paragraph 3)*

Again, it is unfathomable that either DWR or FWS concludes there will be no effect. Once smelt reach Franks Tract there is little hope of their survival as habitat is poor and net transport is south to the export pumps.

- *"The proposed modifications will result in lower outflows that may reduce survival of out-migrating larval smelt that are currently in the Interior Delta. For example, lower flows may expose them to loss at the CVP/SWP export facilities, and increasing their travel time and exposure to degraded habitats and predators. However, the projected OMR flows are less negative than -5000 cfs and therefore are not likely to result in substantial additional impacts over unmodified conditions. For smelt residing in the North Delta, reduced outflow, while limiting the available habitat, is not expected to result in any additional entrainment. There is a low level of uncertainty in this conclusion." (Page 5, Paragraph 1)*

Yes, there may be less than expected entrainment with lower drought-limited exports (although there is apparently no limit on exports of transferred water), but there will be devastating effects to habitat that will reduce the survival of smelt. Proposed changes in fall flows are exactly contrary to FWS recommended fall-X2 flows for smelt to improve their survival in normal and wet years. After six months of outflows of 3000 cfs (July-Dec), the

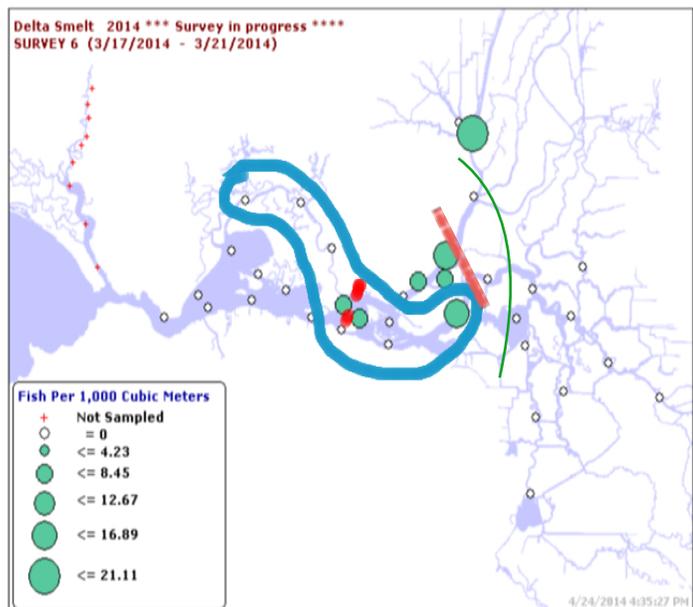
population of Delta Smelt, which has been at record low levels, will be further decimated. Again, the -5000 cfs FWS-BiOp OMR protection criteria only is through June, and even then provides little protection from exports in May and June with the LSZ in the western Delta. The FWS generally has concluded that smelt are not in the Delta in summer and thus do not need summer protections because they assume existing water quality standards are in place. Last year they were griveously wrong, and large number of smelt perished in lethal temperatures. With 3000 cfs outflows, most of the smelt will be in the Delta this summer.

- *"The variability of shallow and deep water habitat, and the resuspension of sediment due to wind and tidal action in the North Delta, may buffer the effects of the proposed modifications because much, if not most, of the habitat in this region would remain suitable. The expectations for the North Delta contrast with the lower San Joaquin River where the upstream relocation of X2 may result in a greater proportion of the available habitat encompassing areas of high SAV and associated low turbidities. This could result in lower prey catch efficiencies and also higher predation rates on juvenile Delta Smelt. There is moderate level of uncertainty in this conclusion."* (Page 5, para3).

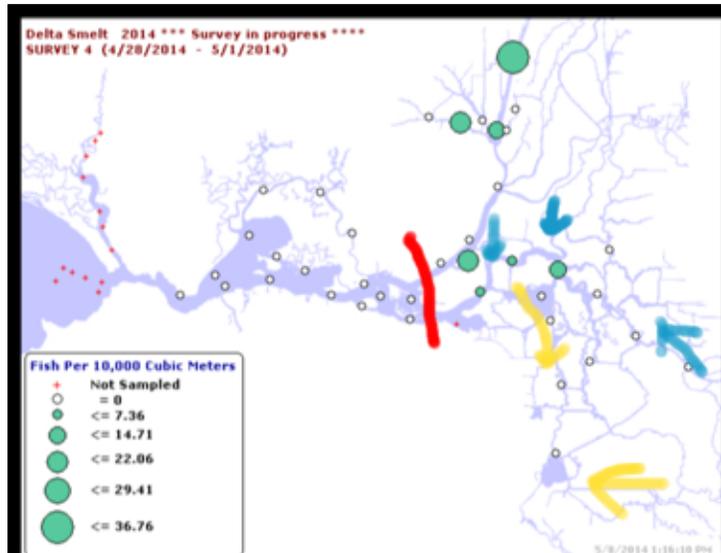
Again, with such a negative assessment how could the FWS and DFW conclude “no significant effects?” Most of the smelt will concentrate in a triangular area from Rio Vista, to Jersey Point, to Prisoners Point, an area where lethal water temperatures occurred in early July 2013 when outflow was 5000 cfs.

- *"In addition, one of the most recent 20-mm survey, conducted April 14-17, detected juvenile Delta Smelt in the San Joaquin River at Jersey Point (Figure 11b). Larvae and juveniles in the lower San Joaquin River are potentially susceptible to the effects of South Delta exports."* (Page 7, Paragraph 2).

The adjacent chart shows conditions in March when outflows were 5-7000 cfs and X2 was at left red line. Reducing outflow to 3000 cfs will move X2 to right red line and the LSZ to the green line from blue boundary. Large tidal flows will "pump" smelt into the Central Delta where they will be more vulnerable to exports, predation, lethal water temperatures, and poor food supply.



The changes are already happening in early May. The chart at right shows the most recent survey of smelt with outflow falling to 5000 cfs and exports rising (in conjunction with San Joaquin 3000 cfs flow pulse). Exports are pulling from north and east (yellow arrows). Inflows of 9000 cfs (split amongst the three blue arrows). X2 has moved to upstream to Emmatton (red line) with the lower outflow.



As the San Joaquin pulse soon ends, most of the export water will be drawn from the north where smelt are concentrated. Dropping outflow to 4000 cfs per the standard through the end of June will exacerbate the problem. Adopting the Order’s allowed 3000 cfs in May and June would be disastrous. (Note: Although DWR did not request this in their recent request, the State Board established a 3000 cfs outflow standard in May.) Relaxing the standard in July to 3000 cfs (per DWR’s request) will further exacerbate the problem by moving X2 to Three Mile Slough (left blue arrow), which is the area of Low Salinity Zone toward which Delta Smelt will gradually gravitate.

- *"In addition to turbidity effects, changes in flow may affect residence time, which in turn may influence planktonic production. Lower flows are expected to reduce hydraulic residence times, potentially resulting in improved planktonic production (Lucas et al. 2009). However, the specific effect is difficult to predict because benthic grazing can offset these benefits. Hence, the response of the food web to the changes in flow are unclear. There is a moderate level of uncertainty about this conclusion."* (Page 6, Paragraph 1).

The response in the food web is well understood. When the LSZ moves upstream of the broad flats of Suisun Bay and the West Delta for the confined channels of the Central Delta, food productivity declines sharply. Residence time in the LSZ goes down because of its lower volume and because it is the direct path of north Delta flow to the south Delta export pumps. Less residence time will also reduce planktonic productivity.

- *"Juveniles and adults in the Northern Delta have a greater area of suitable habitat than populations in the lower San Joaquin. For example, the North Delta includes several potential refuges, such as the Sacramento Deep Water Ship Channel and Liberty Island."* (Page 9, Paragraph 2).

These statements are unfounded. The suggested refuges are more like deep-water traps surrounded by lethally warm, shallow waters from which there is no escape. Smelt need brackish estuarine waters, not freshwater "refuges" like these. There is clear evidence from September Midwater Trawl surveys that smelt do not survive hot summers like 2013 in these "refuges". Lower Sacramento River inflows to the Delta will further aggravate young smelt movement from the Cache Slough area to the Delta.

- *"Any Delta Smelt southeast of Jersey Point in the Central/South Delta may well be entrained at the south Delta export facilities even if the proposed modifications are not instituted. There is a low level of uncertainty about this conclusion."* (Page 10, Paragraph 2).

Given this fact, why would the water agencies want to make the situation worse by bringing more fish to Franks Tract via Three Mile Slough (and Jersey Pt) by moving X2 upstream to Three Mile Slough?

- *"Salvage of juvenile Delta Smelt during the summer and fall months is virtually non-existent (Table 1, CDFW Salvage data), as Delta Smelt do not use the South Delta as habitat during these months."* (Page 10, Paragraph 3).

Smelt are located in the low salinity zone especially near X2 in summer. In most years, this habitat is to the west and not in the influence of the pumps. But in dry or drought years, outflow is reduced to 4000-5000 cfs and these habitats extend upstream into the Central Delta where smelt are more readily drawn to the pumps. Any smelt siphoned off to the south Delta have virtually zero chance of reaching the south Delta in summer of drought years for many reasons, but mostly because of lethal water temperatures. However, in dry years smelt, have frequently made it to the south Delta to be salvaged in July. Decades ago, when smelt were considerably more abundant; they were common in south Delta salvage in August under high exports.

- *"Juvenile Delta Smelt during the summer period typically reside in the low salinity zone around X2, with a substantial portion of the population remaining in the North Delta (Sommer and Mejia, 2013). The CDFW Summer Townet Survey (TNS) samples the distribution of Delta Smelt throughout the summer and early fall period, and in the summer of 2013 consistently detected Delta Smelt in both of these areas (Figure 15)."* (Page 11, Paragraph 1).

This statement is misleading and ignores DFW's 20 mm Surveys that also sampled both postlarval and juvenile Delta smelt through July. The 20 mm Survey demonstrates that the majority (64.52%) of Delta smelt in June 2013 was in Suisun Bay and only about 29% were in the western Delta (20 mm Survey 8, 17 June – 20 June 2013). However, as outflow was reduced, the LSZ (and smelt) was drawn eastward and by early July 60.22% were in the western Delta (20mm Survey 9, 1 July – 3 July 2013).

Note that figure 15 (reproduced to the right) from the Effects Analysis depicts a period in late July 2013 with approximately 5000+ cfs outflows and the larger catch at station 519 in Suisun Bay occurred in higher salinity water (13000 EC) west of the low salinity zone. Those smelt were among those who avoided being drawn eastward when outflow was dramatically reduced in early July (from 8000-9000 cfs to 5000 cfs). The other identified smelt to the north were in the Sacramento Deepwater Ship Channel, or to a lesser extent, in deep pockets in Cache Slough where water had also been cooler.

However, the majority (60.22%) of Delta smelt that were in the LSZ and drawn eastward in early July (20 mm Survey 9, depicted to the right) likely succumbed to lethal water temperatures (> 23C). As noted above, before outflow was substantially reduced at the beginning of July, the majority of Delta smelt (64.52%) were in Suisun Bay in late June and only 29% were in the Western Delta (20 mm Survey 8).

This loss of Delta smelt from reduced outflow and high temperatures in July was likely a major contributing reason the 2013 Fall Midwater Trawl's Delta smelt abundance index of 18 was the second lowest in history (since 1967). Delta smelt losses are likely to be greater this year, given the larger reductions in outflow.

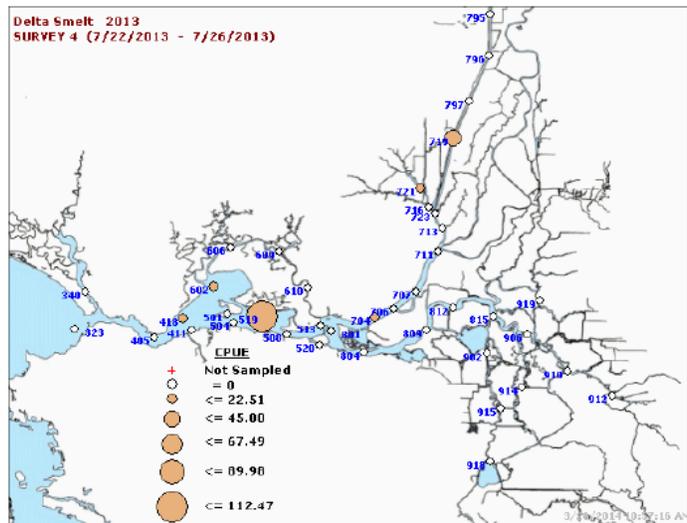
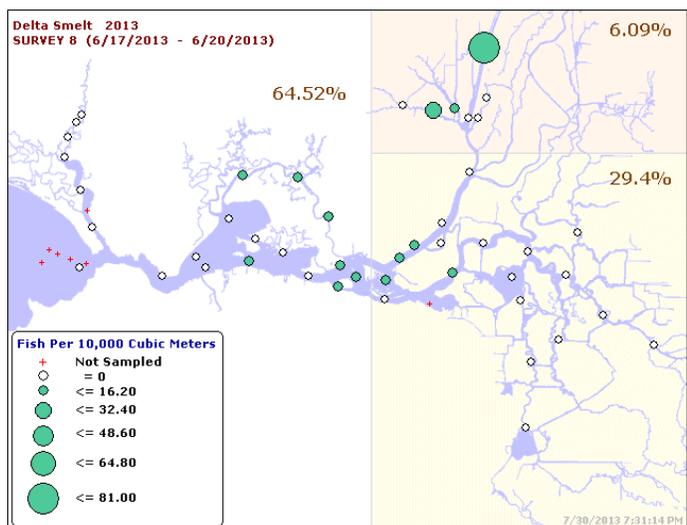
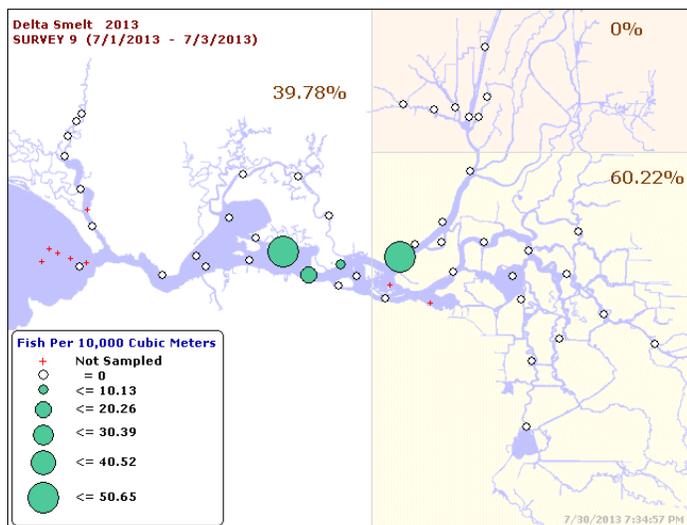


Figure 15, TNS #4 Delta Smelt Distribution in Late July¹³



- *"Juvenile Delta Smelt have the potential to be substantially affected by the proposed actions. The effects of changes in water quality in areas such as Liberty Island, Sacramento Deep Water Ship Channel, Lindsey and Cache Sloughs, are uncertain because the hydrology of this region is strongly driven by tidal effects during the months of the proposed action. However it is relatively likely that reduced inflow will result in a more upstream distribution of Delta Smelt, increasing the risk that they will be exposed to relatively high water temperatures (e.g. >25C). It is hypothesized the Deep Water Ship Channel and Cache Slough may provide key thermal refuges that allow Delta Smelt to persist in the North Delta. Nonetheless, it is not known how long these refuges will persist under conditions of a sustained heat wave."* (Page 11, Paragraph 2).

We agree that smelt did not persist after the July 2013 heat wave except in the ship channel. However, the north Delta's (ship channel) freshwater does not provide the normal summer habitat conditions for smelt. Again, how could the FWS and DFW concur that this action would not likely lead to significant adverse effects?

- *"Delta Smelt have a strong positive association with the position of X2, with more downstream positions providing higher quality habitat (Feyrer et al. 2011). Under the proposed action, it is likely that summer Delta Smelt distributions will not be in areas optimal for growth and survival (Nobriga et al. 2008). In previous low-flow years, when water quality conditions became less tolerable for Delta Smelt in the Cache Slough Complex, the North Delta population appeared to have the capability to move downstream quickly towards the low salinity zone. It is likely, given the strongly tidal nature of the Cache Slough Complex, that Delta Smelt are able to ride these tidal flows and would be capable of quickly escaping unfavorable habitat conditions in the North Delta should they arise. Under the current proposal, X2 would move further upstream, limiting this potential downstream movement, although conditions without the modifications would also limit this potential downstream movement. The proportion of the total population of Delta Smelt utilizing the North Delta in summer appears to be highly variable (e.g. Dr. James Hobbs, UC Davis, unpublished data), but it can be substantial. There is a moderate level of uncertainty about the expected effects in the North Delta."* (Page 11, Paragraph 3).

A reduction in outflow under the Order, combined with the regular opening of the Delta Cross Channel in summer, will reduce the tidal circulation of freshwater inflow from the Sacramento River to the Cache Slough area. This reduction, in conjunction with water diversions in that area, causes negative or upstream net transfer of water, thus reducing the net downstream transport of smelt from the area to the LSZ.

Longfin Smelt

- "The majority of juvenile Longfin Smelt appear to be distributed in the lower Sacramento and San Joaquin rivers, and the confluence of these rivers, with smaller densities distributed in Suisun Bay, the Cache Slough Complex, and in the South Delta (Figure 16)." (Page 12, Paragraph 2)

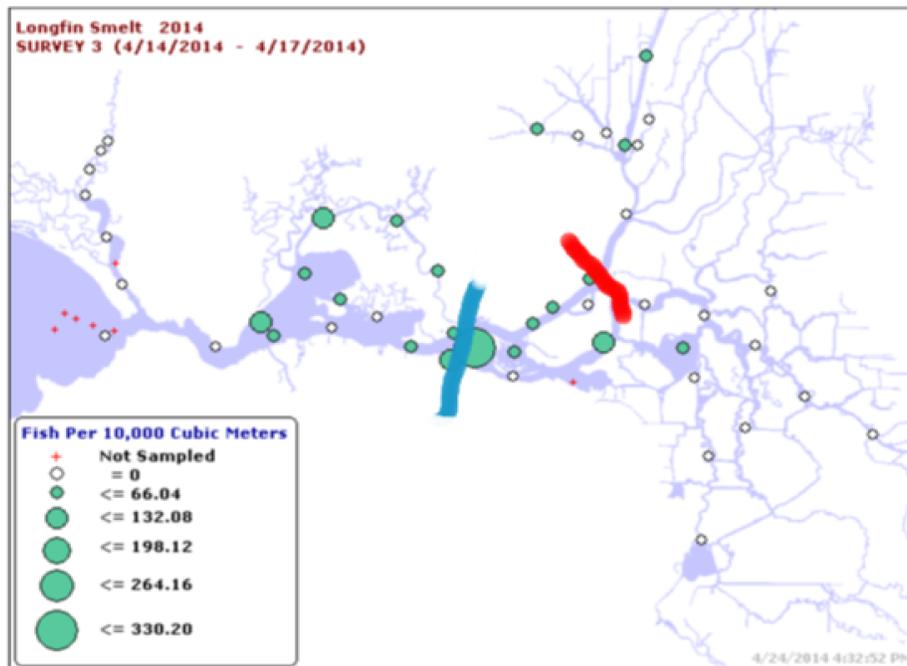


Figure 16, Longfin age-0 distribution from 20 mm survey #3¹⁴

Figure 16 from the Effects Analysis is reproduced above. Note that during the depicted survey, outflow had been high after earlier storms and was about 6,000 cfs. The X2 location was to the west in Suisun Bay (blue line). If the outflow were to be reduced to 3000 cfs this summer, X2 and the concentration of Longfin Smelt would move upstream to Three Mile Slough (red line). The use of this survey data to portray the expected distribution of Longfin Smelt under the Order is inappropriate.

- "Given the limited distribution of larvae and juveniles in the Central and South Delta, the proposed action will likely not substantially affect entrainment risk of the Longfin Smelt population. Additionally, larval Longfin Smelt salvage decreases as water temperatures rise in the spring months, so salvage is likely to continue declining through the action period regardless of operations. Overall, potential increased entrainment effects on Longfin Smelt resulting from the proposed actions will be limited, although a demonstrated positive relationship between Longfin Smelt abundance and winter-spring Delta outflow (Kimmerer

2002; Rosenfeld and Baxter 2007) suggests reduced outflow in April under the proposed action will result in some reduction in overall abundance. The modifications proposed are not likely to result in a substantial degradation of rearing habitat for Longfin Smelt over conditions that would be experienced in a dry year. There is a low level of uncertainty about this conclusion." (Page 13, Paragraph 2)

First, salvage is a poor indicator of risk or effect. Second, movement of X2 upstream, as in Figure 16, is clearly a substantial degradation of Longfin Smelt rearing habitat.

USFWS Concurrence Letter

"Although the proposed departure from D-1641 was not anticipated in the Project Description of the BiOp, or the modeling in the biological assessment, the proposed relaxations, based on the provisions provided in the TUC Order, as amended, and existing hydrologic and biological conditions for June through November appear to be within the range of effects previously analyzed in the 2008 BiOp. The Service, therefore, concurs with Reclamation's determination that the proposed modifications for June through November will have no additional adverse effects on delta smelt or its critical habitat."

This statement simply contradicts the conclusion in the FWS biological opinion that includes the following specific objective for summer rearing of young delta smelt:

"The objective of this RPA component (which corresponds to Action 3 in Attachment B), is to improve flow conditions in the Central and South Delta so that larval and juvenile delta smelt can successfully rear in the Central Delta and move downstream when appropriate."

FWS believes their OMR requirements through June will protect smelt, and that they are not found in the Delta in summer and do not need protection from exports; when in fact, with 3000 cfs outflow, most of the Delta Smelt (and Longfin Smelt) will be in the Central Delta and subject to Delta exports (especially enhanced exports from water transfers allowed under the Order). The FWS BiOp does describe the following further goal:

"3. Implementation of the proposed action (i.e., projects operations) is expected to perpetuate the very limited co-occurrence of PCEs at appropriate places and times by: (a) altering hydrologic conditions in a manner that adversely affects the distribution of abiotic factors such as turbidity and contaminants; (b) altering river flows to an extent that increases delta smelt entrainment at Banks and Jones, as well as reduces habitat suitability in the Central and South Delta; and (c) altering the natural pattern of seasonal upstream movement of the LSZ

to an extent that is likely to reduce available habitat for the delta smelt within areas designated as critical habitat.”

The proposed changes in flows will further reduce the smelt populations by increasing risk to exports and reducing habitat quantity and quality.