News for Immediate Release

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Delta Water Exports Could Be Reduced By Up to 50 Percent Under New Federal Biological Opinion

DWR Director Snow Responds to Delta Smelt Biological Opinion

SACRAMENTO – State Water Project (SWP) deliveries throughout California could be permanently reduced by up to 50 percent under a new Delta smelt Biological Opinion issued today. Water deliveries to cities, farms and businesses throughout much of the state will be reduced about 20 to 30 percent on average, but cuts could be even greater under certain hydrologic conditions.

The opinion, released today by the U.S. Fish and Wildlife Service, will continue reductions in SWP and federal Central Valley Project Delta water exports in effect since a December 2007 federal court order to protect Delta smelt.

Department of Water Resources (DWR) Director Lester Snow issued the following statement in response to the opinion:

> "DWR has long been committed to implementing effective environmental protections, as well as ensuring reliable water supplies for all Californians. But I am concerned that this new Biological Opinion fails to apply a comprehensive approach in dealing with at-risk fish species in the Delta. We know there are many stressors causing havoc in the Delta – including toxic pollutants, invasive species, climate impacts, power plant operations, illegal diversions and overall loss of habitat and food. Today's action by the federal government looks only to the water projects rather than having a complete view of all causes for Delta fish decline.
>
> We expect that the U.S. Bureau of Reclamation will seek additional clarification on the proposed fall actions in the Biological Opinion. These actions would have the most severe reductions in State Water Project water exports in dry years, when the water is needed most.
>
> A long-term approach for the conservation of all at-risk fish species in the Delta,

like that being developed under the Bay Delta Conservation Plan, is clearly our best and most effective solution to reduce the conflicts between maintaining a reliable water supply and restoring the Delta ecosystem.

The crisis in the Delta is having real-time impacts on California's economy and must be addressed comprehensively. As Gov. Schwarzenegger has said, new storage, improved conveyance and increased water conservation are all necessary so that we may contribute to the conservation and recovery of the Delta as a whole."

The most recent scientific studies indicate that entrainment in SWP pumps is not the greatest factor in reducing Delta smelt population. The Biological Opinion also calls for increased reservoir releases in the fall of some years to reduce salinity. This may be in direct conflict with a Biological Opinion to protect salmon that is expected in March 2009.

Given California's drought conditions, an agricultural water crisis, and various urban water cutbacks, California cannot afford further pumping restrictions without careful coordination.

Delta Smelt

Delta smelt are native to and found only in the Sacramento-San Joaquin Delta. The rapid decline of Delta smelt and other Delta fish indicate the Delta ecosystem is troubled. Factors such as reduced food sources for fish due to invasive species, increased water temperatures due to rising air temperatures, and increased discharges of ammonia and other toxics are all implicated in adversely affecting the ecosystem. However, the fishery agencies continue to only focus on actions related to pumping to solve this complex problem. Until more holistic approaches are taken to address all these environmental stressors, the delta ecosystem will continue to not improve.

The Delta smelt was listed as threatened under the Endangered Species Act in 1993, and is currently being considered for listing under the "endangered" status. Actions to protect the fish have already resulted in pumping reductions and a complete 12-day halt in SWP exports during June 2007.

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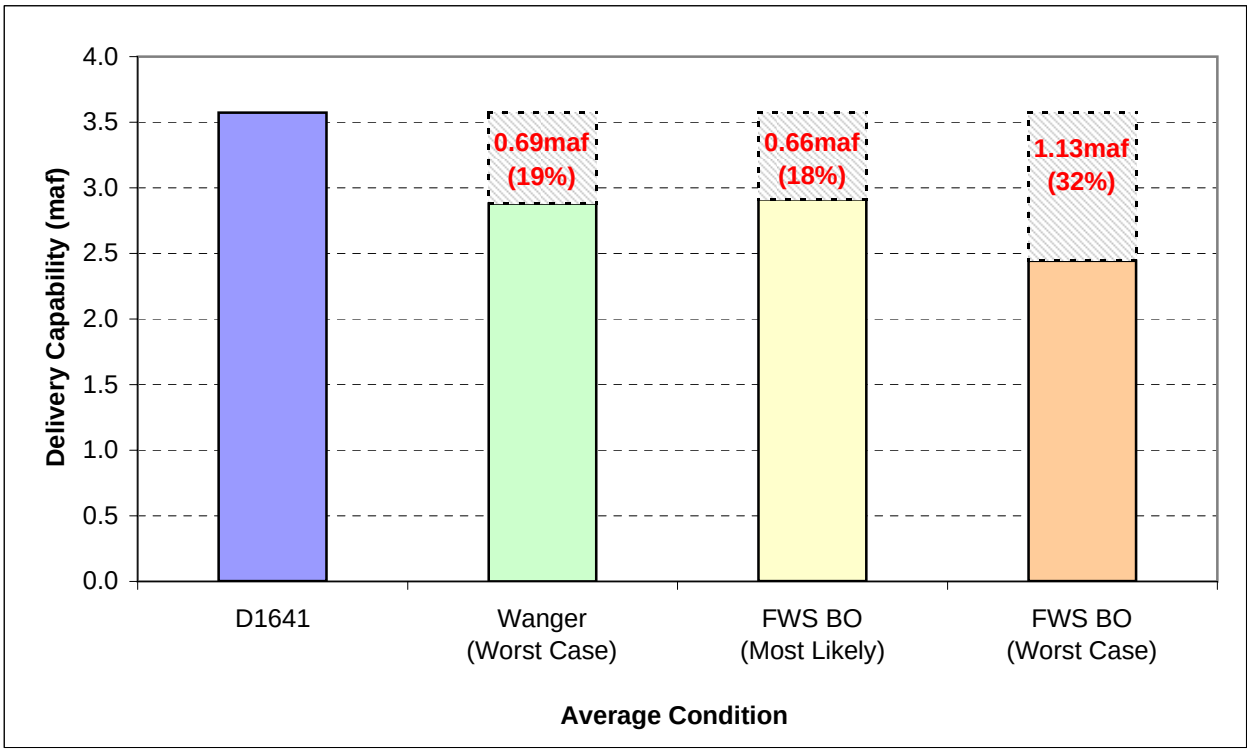
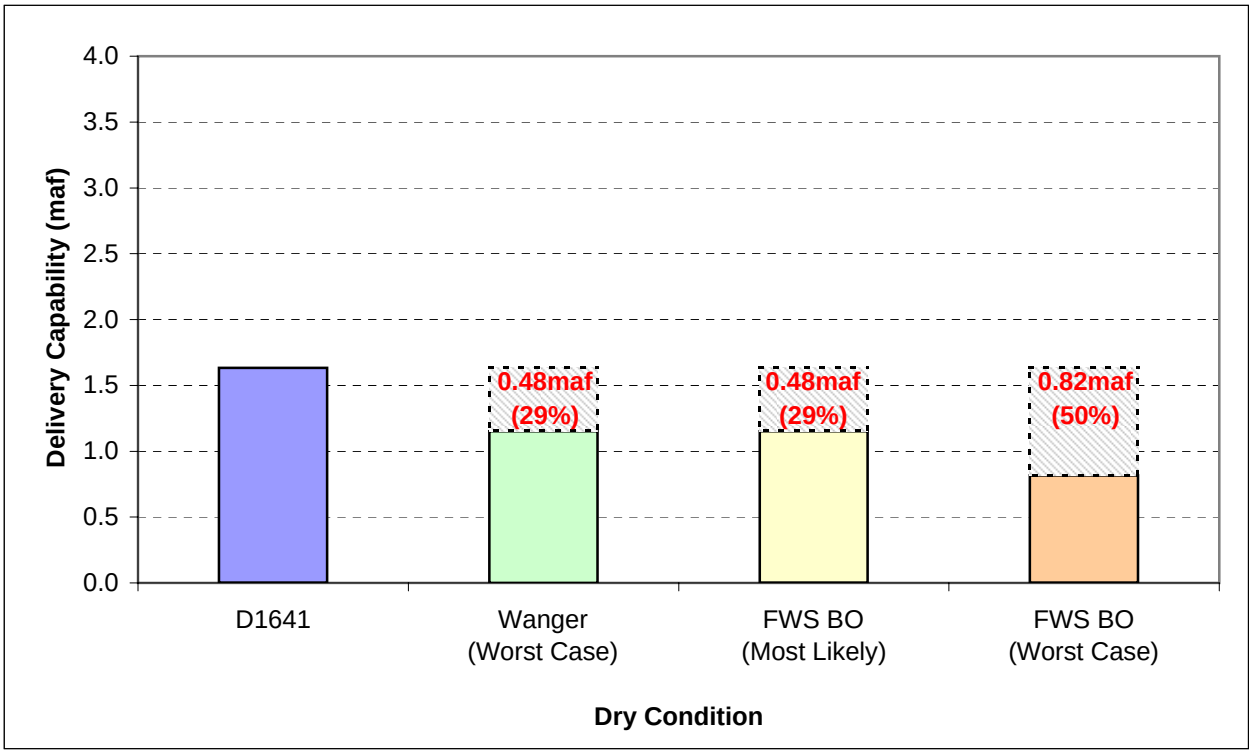
The Department of Water Resources operates and maintains the State Water Project, provides dam safety and flood control and inspection services, assists local water districts in water management and water conservation planning, and plans for future statewide water needs.

Estimated SWP Delivery Impacts
(Reduction from pre-Wanger regulation (D-1641))





maf = Million acre feet

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IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF CALIFORNIA

NATURAL RESOURCES DEFENSE COUNCIL, et al.,

Plaintiffs,

v.

DIRK KEMPTHORNE, in his official capacity as Secretary of the Interior, et al.,

Defendants,

SAN LUIS & DELTA-MENDOTA WATER AUTHORITY and WESTLANDS WATER DISTRICT; CALIFORNIA FARM BUREAU FEDERATION; GLENN-COLUSA IRRIGATION DISTRICT, et al.; CALIFORNIA DEPARTMENT OF WATER RESOURCES, and STATE WATER CONTRACTORS,

Defendant-Intervenors.

05 CV 01207 OWW (LJO)

DECLARATION OF JOHN LEAHIGH IN SUPPORT OF THE CALIFORNIA DEPARTMENT OF WATER RESOURCES' PROPOSED INTERIM REMEDY

Hearing: August 21, 2007
Time: 9:00 a.m.
Courtroom: 3
Judge: Hon. Oliver W. Wanger

I, John Leahigh, declare as follows:

1. I am employed by the Department of Water Resources (DWR) as Chief of the Project Operations Planning Branch (POPB) within the Division of Operations and Maintenance. I have been in my current position since March 2005.

2. I am responsible for short-term planning of water operations for the State Water Project (SWP). These planning responsibilities include the estimation of delivery capabilities of the SWP and forecasted water export operations from the Sacramento/San Joaquin Delta (Delta) through the Harvey O. Banks Delta Pumping Plant (Banks), Skinner Fish Protection Facility (Skinner), and Clifton Court Forebay (CCF).

3. Prior to taking the position of Chief of the POPB, I worked within the branch in various engineering classifications from November 1996 through February 2005. I have worked for DWR since May 1992. I received a Bachelor's degree in Civil Engineering from the University of New Mexico in 1989 and a Master's degree in Civil Engineering with emphasis on Water Resources Engineering from California State University at Sacramento in 1999. I am a registered Civil Engineer in the State of California.

4. One of my responsibilities as Chief of the POPB is to supervise the work of engineering staff that develop and monitor studies, projections and delivery capabilities of the SWP. I coordinate with a team of engineers to plan and schedule water export operations based on water availability, water permit/quality restrictions, environmental needs, and projected hydrology.

5. I have personal knowledge of the facts stated herein, and, if called to do so, could and would testify competently thereto.

6. I am familiar with and contributed to the development of the proposed remedy actions, set forth in the Delta Smelt Action Matrix for Water Year 2008 (Action Matrix)[1/], proposed by the United States Fish and Wildlife Service (USFWS), as supported by DWR. The Action Matrix has been developed to minimize and prevent adverse impacts to delta smelt and its habitat from SWP and CVP operations during the interim period pending completion of the consultation on the delta smelt with USFWS. I am informed and believe that the USFWS will complete the consultation and issue its biological opinion before August 2008.

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1. A copy of the Action Matrix is attached as Exhibit A to the Declaration of Jerry Johns in Support of the California Department of Water Resources' Proposed Interim Remedy, filed concurrently herewith.

7. I have worked with POPB staff to develop an estimate of the water costs associated with implementation of the Action Matrix through July 2008.

8. For the purposes of the following analysis, "water costs" are defined as the estimated export reductions and the estimated reductions in deliveries of water to CVP/SWP contractors for 2008 as a result of implementing the actions described in the Action Matrix.

9. The term baseline" is defined as the expected delivery of water without implementing the Actions proposed in the USFWS remedy matrix. Baseline water deliveries often vary depending on hydrology and the costs estimates are based on two different hydrology assumptions, as described in detail below.

10. Water supply forecasting requires a projection of initial reservoir storages and forecasted runoff as a foundation to delivery estimates. Reliable projections are available for the initial reservoir storages going into 2008, but the forecasted runoff is largely dependent on the amount of precipitation that will be experienced next year, which is unknown and could vary greatly. Water supply costs were analyzed for 2008 with two different assumptions on the amount of precipitation that may be experienced in 2008: dry and average.

11. A year with low precipitation or a "dry year" for the purposes of my analysis assumes the amount of precipitation in 2008 will be equal to the amount of precipitation that was exceeded 90% of the time over the past 85 years.

12. A year with average precipitation or an "average year" for the purposes of my analysis assumes the amount of precipitation in 2008 will be equal to the amount of precipitation that was exceeded 50% of the time over the past 85 years.

13. Although many different assumptions could be made for the amount of precipitation that could occur in any year, assumptions of precipitation at a 90% and 50% chance of exceedence are the most widely used water supply forecasting assumptions. These two hydrologic assumptions generally give a good analytical range for project operations.

EXISTING RESTRICTIONS ON WATER DELIVERIES

14. DWR provides water to twenty-nine (29) contractors throughout California under water right permits issued by the State Water Resources Control Board (SWRCB). These permits

include restrictions on water exports. The DWR permit most recently issued by the SWRCB resulted in a SWRCB decision, known as Water Rights Decision 1641 (D-1641). Details of the decision can be found at 14. DWR provides water to twenty-nine (29) contractors throughout California under water right permits issued by the State Water Resources Control Board (SWRCB). These permits include restrictions on water exports. The DWR permit most recently issued by the SWRCB resulted in a SWRCB decision, known as Water Rights Decision 1641 (D-1641). Details of the decision can be found at http://www.waterrights.ca.gov/baydelta/d1641.htm.

15. The water costs associated with the Action Matrix are measured against allowable deliveries under baseline operations, considering all flow and water quality objectives required by D-1641. Through D-1641, the SWRCB assigns responsibility for meeting water quality objectives adopted in the Water Quality Control Plan ("WQCP") for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. These WQCP objectives protect fish and wildlife, and the agricultural, municipal and industrial uses of water.

16. The WQCP was updated in 2006. The new plan did not result in any changes in the requirements of D-1641. The new WQCP can be found at http://www.waterrights.ca.gov/baydelta/docs/rev2006wqcp.pdf.

17. A team of engineers and I took into account the restrictions imposed by meeting the objectives of the WQCP when developing the estimates for water costs associated with the implementation of the Action Matrix.

ASSUMPTIONS FOR THE IMPLEMENTATION OF ACTIONS

18. I assumed in the analysis that Action 1 would be triggered and implemented as of December 25, 2007 and continue through January 3, 2008. December 25 is described as the first possible day to trigger this 10-day Action in the Action Matrix.

19. I assumed in the analysis that delta smelt spawning will occur on February 20, 2008. February 20 is the date on which DWR biologists have estimated that spawning has begun historically. This assumption establishes the durations of Actions 2 and 3, which could vary significantly. The end of Action 2 and the trigger for the start of Action 3 is the onset spawning

as described in the Action Matrix.

20. In the Action Matrix, Actions 3 and 4 assume a range of flow objectives. A range of Old and Middle River upstream flows between 0 and 4000 cubic feet per second (cfs) is explicitly described and assumed for analyzing Action 3.

21. Action 4 does not have targeted flow but allows a range similar to Action 3 (from zero to approximately 4000 cfs).

22. Because the Action Matrix describes Actions 3 and 4 flow objectives as a range I assumed a range for water costs as well. The high end of this range assumes that the Old and Middle River objective is 0 cfs for both Actions 3 and 4. For determining the lower costs in the range I assumed that Action 3 is implemented at the 4000 cfs flow objective and Action 4 is not triggered, resulting is no water costs.

23. This range of cost was necessary as part of the analysis because of the uncertainty related to the real-time distribution of delta smelt and the susceptibility of this distribution to the exports as noted in footnotes of the Action Matrix.

ESTIMATED EXPORT REDUCTIONS ASSOCIATED WITH THE USFWS'S REMEDY PROPOSAL

24. Implementation of flow objectives in the Action Matrix will require reductions in export operations by the SWP and CVP. My team of engineers and I estimated ranges of export reductions associated with each Action in the Action Matrix. The ranges are based on 2008 being dry or having average precipitation as defined earlier. In addition, Actions 3 and 4 have sub-ranges due to their adaptive nature.

25. Action 1 - Winter Pulse Flow to Benefit Adult Spawning: CVP and SWP target upstream Old and Middle River flow not to exceed 2,000 cfs for a 10-day period during late December or early January. This action is estimated to reduce combined project exports by 100 thousand acre-feet (taf) in a dry year and 160 taf in an average year.

26. Action 2 - Adult Salvage Minimized: CVP and SWP target upstream Old and Middle River flow not to exceed 4,500 cfs from early January to late February. This action is estimated to reduce combined project exports by 150 taf in a dry year and 500 taf in an average year.

27. Action 3 – Larval and Juvenile Protection: CVP and SWP target upstream Old and Middle River flow between 4,000 cfs to 0 cfs from late February through the end of May. This action is estimated to reduce combined project exports by 60 taf to 500 taf in a dry year and 640 taf to 1.3 million-acre feet (maf) in an average year.

28. Action 4 – Juvenile Protection: If triggered, the CVP and SWP may target upstream Old and Middle River flow of up to 0 cfs in June. This action is estimated to reduce combined project exports up to 130 taf in a dry year and up to 350 taf in an average year.

29. Action 5 - Barrier Operations: There were no additional export reductions associated with this action.

COMBINED SWP/CVP ESTIMATED DELIVERY REDUCTIONS

30. I assumed in my analysis that both the SWP and CVP are equally responsible for meeting the objectives in the Action Matrix. The estimated delivery reductions provided below represent combined CVP/SWP delivery reductions.

31. Export reductions do not result in a one-for-one impact on deliveries because of a multitude of complicating factors including system constraints, runoff patterns, annual delivery patterns, and operational flexibility.

32. The export reductions for each action were entered into an operational spreadsheet model developed by DWR staff that estimates the delivery capabilities of the SWP and CVP. We modeled the remedy period with the implementation of the Action Matrix and without implementation of the Action Matrix. A comparison of model output indicates what annual delivery reduction could occur in 2008 if all proposed actions are implemented.

33. The resulting delivery reductions are expressed as a range for each hydrologic assumption for the same reason that the export reductions were expressed as a range. Actions 3 and 4 of the Action Matrix have an adaptive management process that will vary the flow objective.

34. The conclusion of the analysis is that the sum of all these export reductions in a dry year is expected to decrease combined 2008 deliveries of the SWP and CVP by 6% (183 taf) to 25% (814 taf) from a baseline delivery of 3.2 maf.

35. In an average year, the delivery reductions are expected to be between 14% (820 taf) to 37% (2.17 maf) from a baseline delivery of 5.9 maf.

SWP SHARE OF ESTIMATED DELIVERY REDUCTIONS

36. The analysis showed that the SWP 2008 annual deliveries would be reduced 8% (91 taf) to 27% (305 taf) from a baseline delivery of 1.15 maf in a dry year.

37. In an average year, SWP 2008 annual deliveries would be reduced 8% (252 taf) to 31% (940 taf) from a baseline delivery of 3 maf.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this 9th day of July, 2007 at Sacramento, California

JOHN LEAHIGH, Declarant.

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF CALIFORNIA
FRESNO DIVISION

PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATION/INSTITUTE FOR FISHERIES RESOURCES, et al,

Plaintiffs,

v.

CARLOS M. GUTIERREZ, et al.,

Defendants.

SAN LUIS & DELTA MENDOTA WATER AUTHORITY, WESTLANDS WATER DISTRICT, CALIFORNIA FARM BUREAU FEDERATION, AND GLENN-COLUSA IRRIGATION DISTRICT, et al. and STATE WATER CONTRACTORS, THE CALIFORNIA DEPARTMENT OF WATER RESOURCES.

Interveners-Defendants.

Case No. 1:06-CV-00245-OWW-GSA

DECLARATION OF JOHN LEAHIGH IN SUPPORT OF DEFENDANT-INTERVENER DEPARTMENT OF WATER RESOURCES' OPENING REMEDIES SUBMITTAL

Date: June 6, 2008
Time: 12:15 p.m.
Judge: The Honorable Oliver W. Wanger
Court Rm: No. 3

I, John Leahigh declare as follows:

1. I am employed by the Department of Water Resources (DWR) as Chief of the Project Operations Planning Branch (POPB) within the Division of Operations and Maintenance (O&M). I have been in my current position since March 2005.

2. I lead the POPB, which is responsible for the short-term planning of water operations for the State Water Project (SWP). These planning responsibilities include forecasting water releases from Lake Oroville to the lower Feather River (releases) and water export operations (exports) from the Sacramento/San Joaquin Delta (Delta) through the Harvey O. Banks Delta Pumping Plant (Banks), Skinner Fish Protection Facility (Skinner), and Clifton Court Forebay (CCF). These forecasts include operational compliance for protected species, water quality standards, and water level requirements.

3. Prior to taking the position of Chief of the POPB, I worked within the branch in various engineering classifications since November 1996. I have worked for DWR since May 1992. I received a Bachelor's degree in Civil Engineering from the University of New Mexico in 1989 and a Master's degree in Civil Engineering with emphasis on Water Resources Engineering from California State University at Sacramento in 1999. I am a registered Civil Engineer in the State of California.

4. This declaration is based on my personal knowledge, my familiarity with the regulatory, legal and operational requirements for the SWP, my familiarity with the various documents referenced in this declaration, and on information provided to me by DWR staff. If called as a witness, I could and would testify consistently with this declaration.

I. Planning Process for SWP Operations

5. At its most basic level, the short-term water operations planning process relies on forecasts for water supply; delivery demand patterns; and the physical and regulatory constraints on the SWP water delivery system.

6. A considerable amount of uncertainty exists in the water operations planning process, with the greatest amount in the forecasted water supply. Available SWP water supply is primarily a function of carryover storage in SWP reservoirs and forecasted hydrology.

Forecasted hydrology is based primarily on observed snow pack, future precipitation probabilities, antecedent watershed conditions, and third party water use.

7. Although some uncertainty exists year round when forecasting and planning for water supply, the highest uncertainty occurs during the rainy season roughly between November and May.

8. DWR estimates future demand for SWP water from information received from the SWP water supply contractors. The water supply contractors demand patterns are generally projected in monthly increments and are related to farming schedules, access to alternative water supplies, anticipated seasonal weather effects on demand, and allocated deliveries by DWR.

9. The SWP water delivery system is subject to certain physical constraints. For example, any major planned outages and estimates on forced outages to system pumps and generators are incorporated into the SWP operations plan.

10. The SWP water delivery system is also subject to certain regulatory constraints. These constraints are often linked to hydrology, which as discussed earlier, introduces a high degree of uncertainty in forecasting water operations. In addition, when new regulatory constraints are instituted, such as the remedial actions in litigation related to endangered species protection and the issuance of new Biological Opinions, the level of uncertainty in planning for water supply operations increases.

11. Many types of regulatory restrictions affect project operations, including those for flood protection, power generation, navigation, water quality standards for municipal, industrial, and agricultural use as well as water quality and flow requirements for fish and wildlife protection.

12. The SWP operates to these regulatory requirements as described in various agreements, licenses, permits, water rights terms and conditions, and biological opinions.

II. Regulatory Restrictions of DWR Oroville Feather River Operations for Fishery Protection

13. DWR operates and maintains the Oroville Dam and related facilities (Oroville Facilities), located on the Feather River, subject to requirements of licenses, permits, and

agreements, including: the Federal Energy Regulatory Commission (FERC) license, the State Water Resources Control Board water rights permits, the 1983 Department of Fish and Game Agreement (1983 DFG Agreement), and Biological Opinions (BiOps) issued by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS).

14. DWR operations at the Oroville Facilities include protections for two federally listed anadromous fish species that occur on the Feather River, the Central Valley spring-run Chinook salmon (spring-run salmon) and Central Valley (steelhead). The federally listed Sacramento River winter-run Chinook salmon do not occur in the Feather River watershed.

15. For operational and regulatory purposes, the Feather River below the Oroville Dam is partitioned into two reaches. (A map of Oroville and Lower Feather River is attached as Exhibit 1-A.) The first reach, known as the Low Flow Channel (LFC), begins at the Fish Barrier Dam below Oroville Dam and continues eight miles downriver to the Thermalito Afterbay Outlet. The second reach, known as the High Flow Channel (HFC), begins at the Thermalito Afterbay Outlet and continues 59 miles to the confluence of the Sacramento River at Verona. (A map of the Low flow and High Flow Channels on the Lower Feather River is attached as Exhibit 1-B.) The LFC is the main spawning habitat in the Feather River for spring-run Chinook salmon and steelhead.

16. DWR operates the Oroville Facilities subject to a FERC license for power generation which includes environmental and recreational requirements pursuant to the Federal Power Act. Currently, DWR operates under an annual FERC license pending completion of the FERC relicensing process.

17. Since 2001, DWR has been in the process of relicensing the Oroville Facilities. DWR organized and participated in a comprehensive, collaborative relicensing process involving a large group of stakeholders, including federal and State resource agencies (including NMFS, USFWS and DFG), local governments, and nongovernmental organizations that resulted in a comprehensive Settlement Agreement that has been submitted to FERC as a proposed action for the new license.

18. The issuance of a new license by FERC is a federal action requiring consultation under the Endangered Species Act. FERC requested consultation with NMFS on the proposed issuance

of a new license for the Oroville Facilities based upon implementation of the Settlement Agreement and related Federal and State actions. In June 2007, DWR submitted a Biological Assessment for Federally Listed Anadromous fishes for Oroville Facilities Relicensing (Oroville BA) to FERC and NMFS. NMFS is expected to issue a final BiOp on the Oroville BA in the summer of 2008, which will become effective upon issuance of the new FERC license, which is anticipated in 2009.

19. The current FERC license requires DWR to comply with the 1983 DFG Agreement. The DFG Agreement includes water temperature requirements at the Feather River Fish Hatchery and flow requirements on the Feather River to protect fish, including spring-run Chinook salmon and steelhead. The DFG Agreement requires DWR to maintain specified temperatures at the Fish Hatchery each month during the year, varying between 51°F to 60°F, depending on the season. The lowest temperature of 51°F is required from October through November and from April to mid-May. Higher temperatures are specified in the summer months. A deviation of plus or minus four degrees (± 4°F) is allowed April through November. In addition, the Agreement requires DWR to maintain minimum flows of 600 cfs in the LFC. The Agreement also requires DWR to maintain minimum flows in the HFC and to comply with gradual ramping of changes in flow releases in the HFC.

20. The 2004 NMFS BiOp requires DWR to implement reasonable and prudent measures that include temperature and flow requirements for the Feather River that are in addtion to those in the 1983 DFG Agreement. (See 2004 NMFS BiOp. p. 228-229.) The additional temperature measures require DWR to manage Oroville cold water storage and releases to meet specified cold water temperatures at Robinson Riffle. Robinson Riffle is located approximately five miles downstream of the Fish Hatchery. DWR must maintain water temperatures at Robinson Riffle at less than or equal to 65°F on a daily average basis from June 1 through September 30. The BiOp also includes gradual ramping of flow changes in the LFC, which are in addition to the ramping requirements in the HFC under the DFG Agreement. The gradual ramping of changes in flow releases prevent rapid reductions in water levels that could potentially cause dewatering of salmon redds and stranding of juvenile salmonids.

21. In order to meet the temperature requirements, DWR withdraws water from Lake Oroville at depths that will provide sufficiently cold water. The reservoir depth from which water is released initially determines the river temperatures, but atmospheric conditions, which fluctuate from day to day, modify downstream river temperatures. Altering the reservoir release depth requires installation or removal of shutters at the intake structures. To conserve cold water, shutters are held at the minimum depth necessary to release water that meets the Feather River Fish Hatchery and Robinson Riffle criteria. In addition, to conserve the coldwater pool during dry years and meet the Robinson Riffle temperature requirement, DWR may increase flows to the LFC rather than releasing colder water.

22. In addition to withdrawing water at appropriate depths from Lake Oroville, DWR also takes various temperature management actions to achieve the water temperature requirements, including curtailing pump-back operations, releasing flow through the river valves (for Feather River Fish Hatchery only), and redirecting flows at the fish barrier dam to the LFC (for Robinson Riffle only).

III. Regulatory Restrictions on Delta Exports for Fishery Protection

23. Numerous flow and salinity standards are mandated as part of the State Water Resource Control Board (Board) water rights Decision 1641 (D-1641). Generally, these standards vary by month and by year type. There are five year types classified by D-1641: Wet, Above Normal, Below Normal, Dry, and Critically Dry. A complete summary of all D-1641 standards, with footnotes, is attached as Exhibit 2.

24. The Bureau of Reclamation (Bureau) and DWR are responsible for meeting certain D-1641 requirements, which they share pursuant to the 1986 Coordinated Operating Agreement for the Central Valley Project (CVP) and SWP.

25. Bureau and DWR operate the CVP and SWP (Projects) in coordination to meet Delta outflow standards from D-1641 and biological opinions. To meet the standards, they decrease Project exports or increase Project releases from upstream reservoirs, and usually use a combination of both actions.

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26. The D-1641 Bay-Delta standards include a minimum Delta outflow, commonly referred to as the "X2" standard, for February through June. This standard requires a salinity of 2 parts per thousand at various stations between the confluence of the Sacramento and San Joaquin Rivers and the Susuin Bay for a given number of days per month. The number of days at which these conditions are required to be met at each station is conditioned upon the "X2" position and estimated unimpaired river flow into the Sacramento and San Joaquin River basins in the previous month. The wetter the previous month, the farther west the X2 position must be located. SWP and CVP comply with the X2 standard by making upstream releases from their reservoirs and/or reducing their export pumping in the south Delta.

27. D-1641 imposes additional standards affecting Delta outflow from July through January, filling out the calendar with flow requirements that benefit fishery that reside in or migrate through the Delta.

28. In addition to the Delta outflow standards, there are flow requirements on the lower Sacramento River at Rio Vista to provide attraction flows for salmon from September through December. These Rio Vista flow standards can only be met by increasing Project releases from upstream reservoirs.

29. In addition to the flow standards, the Project exports are constrained year round by a D-1641 standard restricting the percent of Delta inflow that can be exported by the Projects (known as the Export to Inflow Ratio or E/I Ratio). During February through June, which is considered the most sensitive period for fish in the Delta, the Projects are limited to exporting 35% of Delta inflow. During the remainder of the year the Projects are restricted to exporting 65% of Delta inflow.

30. The D-1641 E/I Ratio was instituted as a benefit to all listed fish species in the Delta.

IV. Planned Operations of the State Water Project through September 2008

31. The forecasted runoff in the Sacramento-San Joaquin River Basin is currently between 54% and 69% of average through the end of the water year, September 30, 2008. This water year is classified as a critically dry year as defined in D-1641. Due to these dry conditions and the impacts of the Delta smelt remedial actions on SWP operations this spring, current allocation to

the SWP water users is only 35% of requested demand.

A. Planned Feather River Releases Through September 2008

32. Because of the low water supply this year, (storage in Lake Oroville is currently 58% of average) the vast majority of the water released from Lake Oroville this summer will be used for local agricultural demand and for environmental requirements in the lower Feather River and Sacramento-San Joaquin River Delta.

33. Releases from Lake Oroville beyond those necessary to meet Feather River minimum flow requirements will likely be required to meet the X2 Delta requirements in late May and June.

34. Releases from Lake Oroville beyond those necessary to meet Feather River minimum flow requirements in July through September will likely be necessary for other Delta outflow standards required for fishery enhancement

B. Planned Pumping at Banks Through September 2008

35. Banks pumping will be controlled by the 31-day Vernalis Adaptive Management Plan (VAMP) export/flow period through May 22. During this period, the target for combined water exports from the SWP and CVP is 1500 cfs as defined in the VAMP experimental design.

36. From May 23 through June 20 SWP exports are expected to be limited by the interim delta smelt remedial order entered on December 14, 2007 in *NRDC v. Norton*, Case No. 05-CV-01207, which limits the negative flow of Old and Middle Rivers for the protection of juvenile delta smelt. The actual rate of pumping will be based on the flows in Old and Middle Rivers necessary for the protection of delta smelt and longfin smelt, as determined by the USFWS and DFG, respectively. SWP exports likely will be relatively low, in an estimated range of between 300 cfs to 2000 cfs.

37. In addition, the X2 standard and the E/I standard are expected to limit SWP exports beginning May 23 through the end of June to an estimated range of between 1000 and 2000 cfs.

38. From July through September, minimal SWP water supply would be available from Oroville storage to pump at Banks. However, to augment this year's very low allocation of 35% of requested SWP deliveries, the SWP contractors have arranged several water transfer

agreements with parties north of the Delta to deliver water south of the Delta at Banks, primarily during the summer months.

39. Based on operational studies, total pumping at Banks in July, August, and September is estimated to be significantly less than normal with an estimated monthly pumping rate of between 2000 cfs and 4000 cfs. In comparison, pumping during the summer months of 2007 averaged 6200 cfs and in 2006 averaged 7000 cfs because hydrological conditions permitted higher rates.

V. Planned Operations of the State Water Project October 2008 through March 2009

40. Although operations for the upcoming summer months have a fair amount of certainty associated with them, once the rainy season begins in late fall the level of uncertainty increases significantly and a reliable forecast of Project operations is not possible.

41. A forecast of the range of possible SWP operations can be estimated, however. The range can be indicated by book-ends of possible Project operations with some level of probabilistic forecasting on where operations might be within that broad range. The lower end of the range, or bookend, will be driven by available water supply and the upper end driven by physical and regulatory limits on the operations of the project.

A. Planned Feather River Releases October 2008 Through March 2009

42. Because of the low storage in Lake Oroville, the majority of the water released from Lake Oroville this fall will be used for local agricultural demand and for environmental requirements in the Feather River and water quality requirements in the Delta. These conditions would likely result in less export pumping in the Delta than in years preceded by wetter conditions.

43. Because of the conditions in the 1983 DFG Agreement and low storage projected for Lake Oroville into the Fall, DWR's releases to the Feather River will likely range from 900 cfs to 1250 cfs for the months of October and November.

44. The rainy season is projected to begin in earnest in late November or December. However, because of dry conditions in the watershed, the first significant rain events are likely to be absorbed into the parched soil and upstream storage reservoirs resulting in modest amounts of

inflow into Lake Oroville. In addition, because of the low storage in Lake Oroville, there will be significant reservoir space to absorb significant inflow events until flood release requirements would be required.

45. Flow and salinity requirements for the Delta are minimal in December and January; therefore flows in the lower Feather River would likely remain at similar levels as the preceding two months.

46. Because of low storage in Lake Oroville, the 2008-2009 winter precipitation would have to be significantly wetter than average to result in flood concerns and a need to make releases required under the United States Army Corps of Engineers (Corps) flood manual. The Corps requirements for flood control releases are in place beyond March.

47. Because of current dry hydrology, DWR would likely need to make higher releases from Oroville in February and March than the minimum Feather River flows needed under the 1983 DFG Agreement in order to meet X2 standards for salinity and outflow in the Delta. At this time, it is impossible to predict what those X2 requirements will be given that they will be based upon river flows in the previous month, which will be highly dependent upon the weather occurring at that time.

B. Planned Pumping at Banks October 2008 Through March 2009

48. Again, because of the critically dry conditions this year, SWP exports are expected to be relatively low prior to the first substantial rains in late fall or winter. Pumping rates at Banks are likely to average less than 2500 cfs from the beginning of October until the first substantial rains.

49. Although dry conditions that have occurred over the past two years will tend to bias hydrologic forecasts toward the drier side next year, natural weather variation precludes any reliable projection for river flows next winter and spring.

50. The Corps permits a maximum allowable export rate at CCF from mid-December through mid-March of 6680 cfs plus one-third of the San Joaquin River flow as measured at Vernalis.

/ / /

51. SWP exports likely will be operated at the maximum allowable rate under the Corps for some time during the winter months. The frequency and duration of this maximum allowable pumping will be impossible to predict because it will be coincident with a significant rain event, which cannot be forecasted this far in advance. Conditions such as these would occur in the vast majority of years at some point during the rainy season .

52. However, if dry conditions persist through the end of calendar year 2008 and into early 2009, or if the December 14, 2007 interim remedial order to protect Delta smelt is still in effect, SWP exports will likely remain significantly lower than this maximum allowable rate. For example, both of these conditions existed this past winter and SWP exports averaged less than 2800 cfs from December 2007 through March 2008.

53. In February and March, exports may be further constrained by the restrictions imposed by the E/I ratio explained in paragraph 37.

VI. Planned Temporary Rock Barrier Operation through March 2009

A. History of Temporary Barriers Project

54. In 1991, DWR initiated the South Delta Temporary Barriers Project (TBP) under a permit from the Corps for seasonal installation of four rock barriers in three channels of the south Delta. Attached as Exhibit 3 are two maps of the Delta showing the locations of the three agricultural barriers and the Head of Old River Barrier. Permit extensions were granted in 1996, 2001, and 2008 with current authorization through 2010.

55. The TBP improves water level, circulation, water quality, and San Joaquin River salmon migration in the south Delta.

56. DWR has proposed replacing the TBP with permanent operable gates as part of the South Delta Improvements Program.

B. Standard Installation and Operation of the Temporary Barriers

57. The TBP consists of four rock barriers seasonally installed and removed across three south Delta channels at the following locations:

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· Middle River near Victoria Canal

· Grant Line Canal near Tracy Boulevard Bridge

· Old River near Tracy and the Delta Mendota Canal intake

· The head of Old River at the confluence of Old River and San Joaquin River (HOR barrier)

58. The barriers on Middle River, Old River near Tracy, and Grant Line Canal (the agricultural barriers) are flow control facilities designed to improve water levels and circulation for agricultural diversions. DWR installs these barriers during the agricultural growing season.

59. Under the USFWS and NMFS BiOps for the TBP, operation of the agricultural barriers can begin May 15, or as early as April 15 if the spring HOR barrier is installed at the same time.

60. From May 16 to May 31, if the HOR barrier is removed, the tide gates are tied open in the agricultural barriers to permit additional increased flows for delta smelt and may be untied during this time only if warranted due to low water levels and with the approval of USFWS and NMFS.

61. After May 31, the agricultural barriers are permitted to be fully operational (flap gates unconstrained) until they are completely removed by November 30.

62. During the spring, the HOR barrier is designed to reduce the number of out-migrating salmon smolts entering Old River. During the fall, the HOR barrier is designed to improve flow and Dissolved Oxygen conditions in the San Joaquin River for the immigration of adult fall-run Chinook salmon.

63. The HOR barrier is typically in place during the 31-day VAMP period mid-April to mid-May and between early September to late November for the fall. Installation and operation of the HOR barrier also depends on San Joaquin flow conditions. DWR did not install the HOR barrier in spring of 2008.

C. 2008 Installation and Operations of the Temporary Barriers

64. The December 14, 2007 interim remedial order to protect Delta smelt prohibited the installation of the HOR barrier in the spring of 2008. As a result, the agricultural barriers installations were postponed until May in accordance with the Corps permit and biological

opinions for the TBP.

65. In the summer, DWR will conduct standard operations of the agricultural barriers during the irrigation season to ensure water levels are maintained as high as possible to benefit local agricultural diversions in the south Delta. The operations are passive, with flap gates on the barrier culverts opening and closing automatically when tides change from low to high and back again. Occasionally the flap gates may be opened or closed manually whenever water quality upstream of the Old River near Tracy barrier becomes poor and conditions can possibly be improved by manually operating the flap gates. All the agricultural barriers are notched in the center of each weir by September 15 to provide improved passage for adult fall-run Chinook salmon that might stray into the south Delta on their migration up the San Joaquin River.

66. The fall HOR barrier is not constrained by the December 14, 2007 interim remedial order. This barrier operates from about mid-September to late November, which is not a period that is sensitive to delta smelt. The barrier is designed to increase flows in the San Joaquin River downstream of its confluence with Old River in order to improve dissolved oxygen levels in the San Joaquin River near Stockton. This improvement benefits the adult Chinook salmon that are migrating up the San Joaquin River during the fall.

D. Future Operations in 2009

67. The December 14, 2007 interim remedial order for delta smelt protection prohibits the 2008 installation of the spring HOR barrier. This interim remedial order may or may not effect 2009 operations, depending upon if USFWS has issued its new Biological Opinion, due in September 2008, and if it has included this measure in its opinion.

VII. Historical Impacts at the SWP Delta Pumping Facility to Listed Salmonids

68. The graphs attached as Exhibit 4 show the losses of winter-run salmon and spring-run Chinook salmon from 1992 through 2007 and the salvage of steelhead from 1998 through 2007 at the SWP Delta Banks Pumping facility. As demonstrated by the graphs, listed salmonids have historically not been taken at the SWP exports in any great numbers during July through

/ / /

November. These salmonids are predominantly taken at the SWP during December through June. In the last few years, very few salmonids have been taken during June.

I declare under penalty of perjury of the state of California that the foregoing is true and correct.

Executed this 15 day of May, 2008 in Sacramento, CA.

John Leahigh, Declarant

40253170.wpd
SA2007302949

Exhibit 1

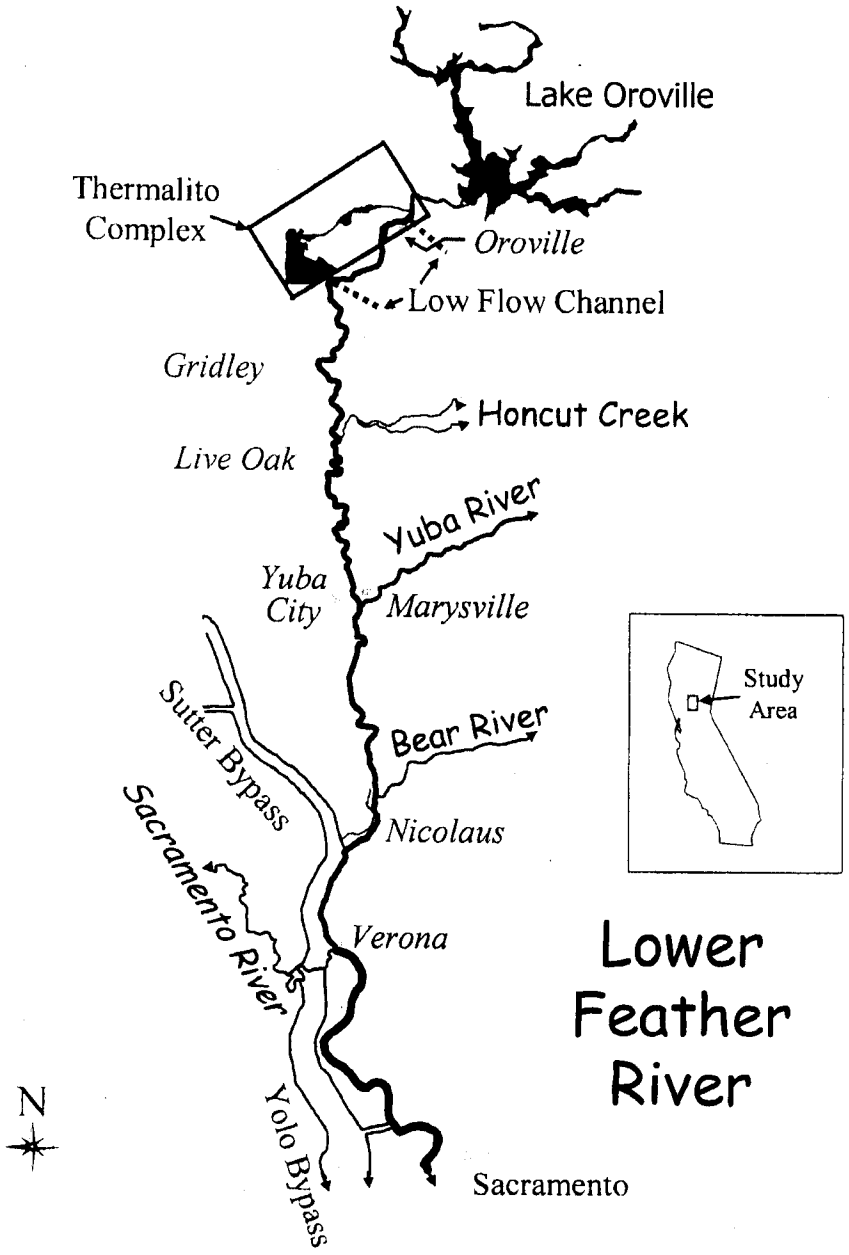


Figure 1. Map of the Lower Feather River

Exhibit 1-A

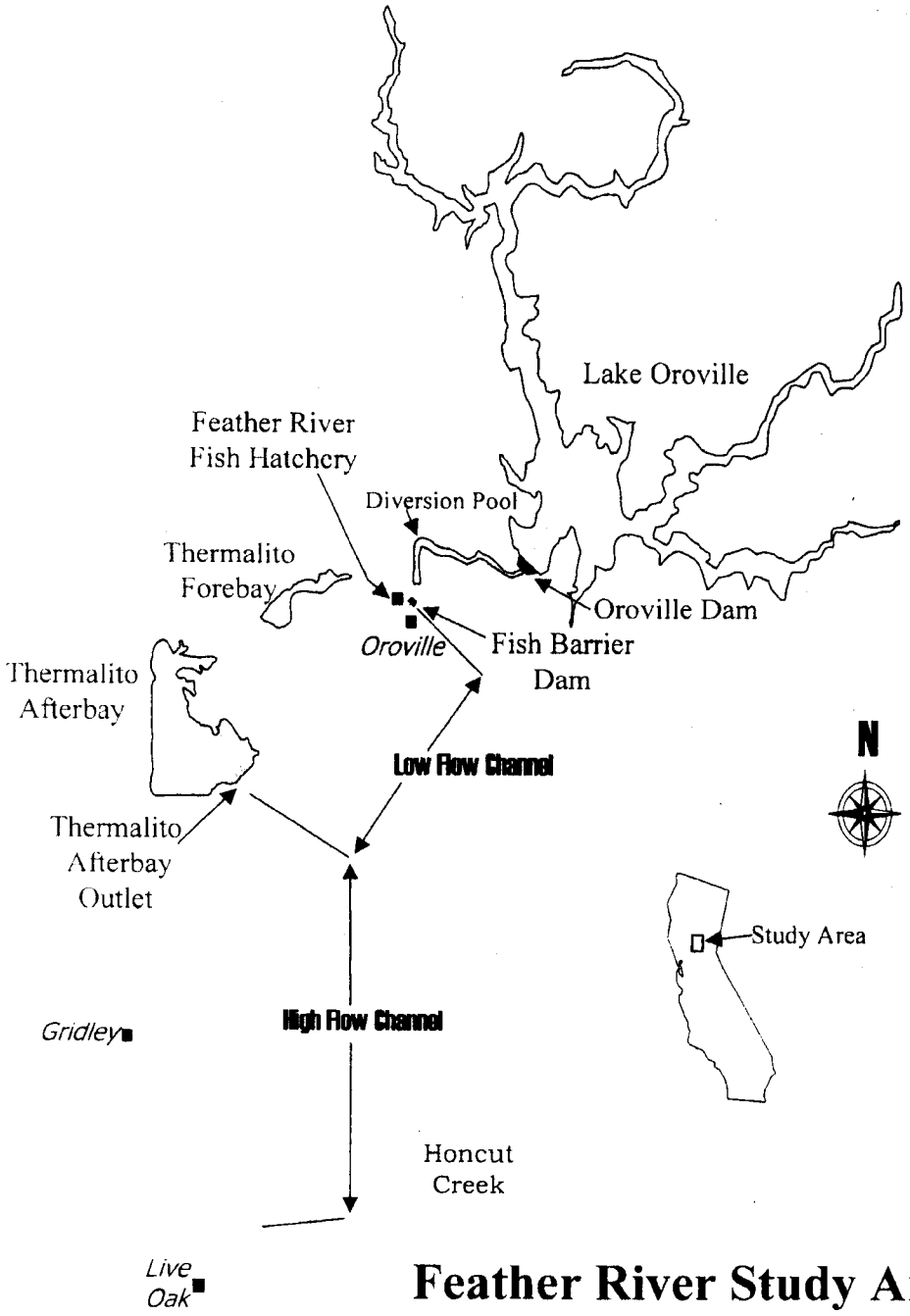


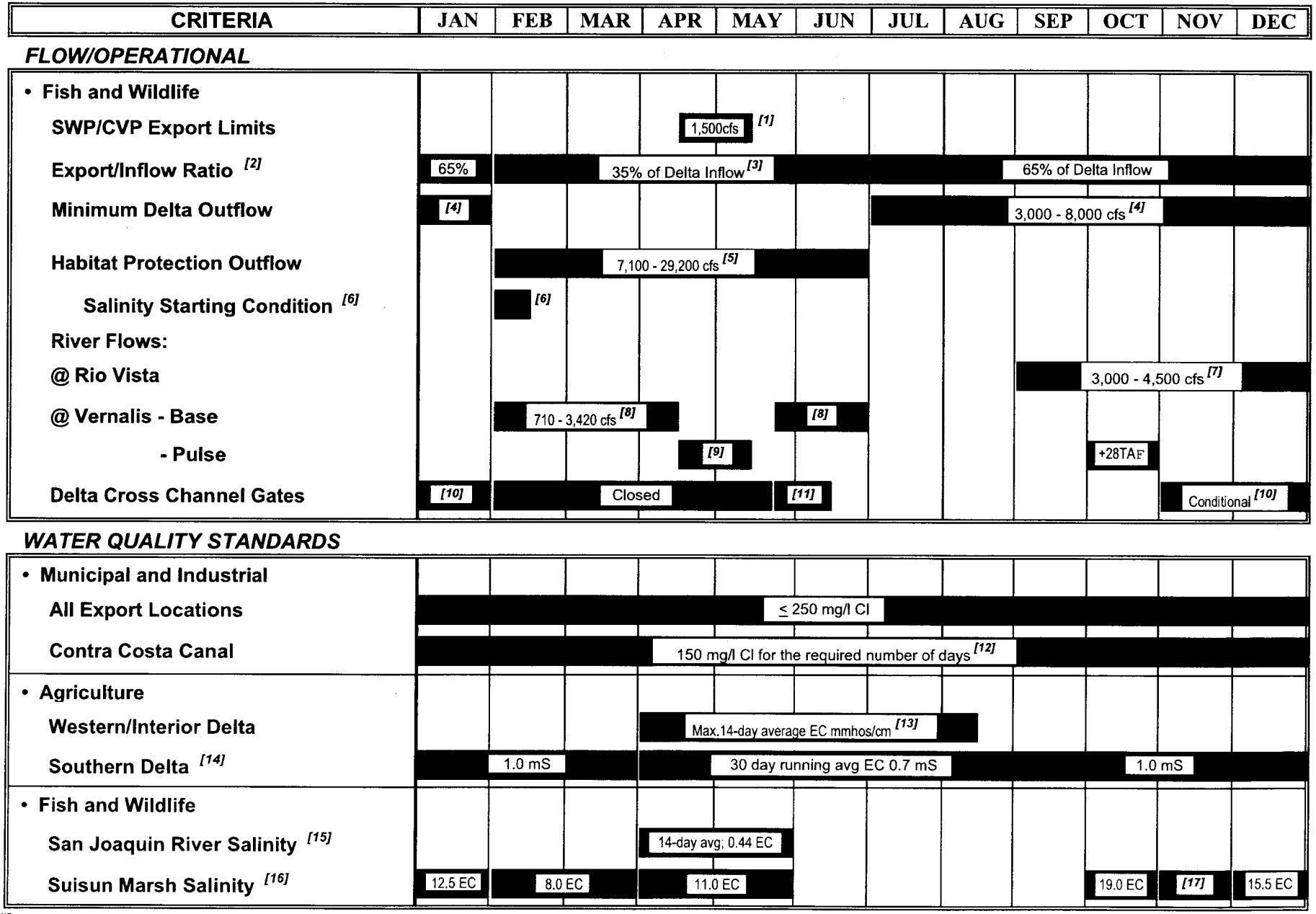
Figure 2. Map of the Feather River Study Area.

Exhibit 1-B

Exhibit 2

Bay-Delta Standards

Contained in D-1641



[#] See Footnotes

Footnotes

[1] Maximum 3-day running average of combined export rate (cfs) which includes Tracy Pumping Plant and Clifton Court Forebay Inflow less Byron-Bethany pumping.

Year Type	All
Apr15 - May15*	The greater of 1,500 or 100% of 3-day avg. Vernalis flow

* This time period may need to be adjusted to coincide with fish migration. Maximum export rate may be varied by CalFed Op's group.

[2] The maximum percentage of average Delta inflow (use 3-day average for balanced conditions with storage withdrawal, otherwise use 14-day average) diverted at Clifton Court Forebay (excluding Byron-Bethany pumping) and Tracy Pumping Plant using a 3-day average. (These percentages may be adjusted upward or downward depending on biological conditions, providing there is no net water cost.)

[3] The maximum percent Delta inflow diverted for Feb may vary depending on the January 8RI.

Jan 8RI	Feb exp. limit
≤ 1.0 MAF	45%
between 1.0 & 1.5 MAF	35%-45%
> 1.5 MAF	35%

[4] Minimum monthly average Delta outflow (cfs). If monthly standard ≤ 5,000 cfs, then the 7-day average must be within 1,000 cfs of standard; if monthly standard > 5,000 cfs, then the 7-day average must be ≥ 80% of standard.

Year Type	All	W	AN	BN	D	C
Jan	4,500*					
Jul		8,000	8,000	6,500	5,000	4,000
Aug		4,000	4,000	4,000	3,500	3,000
Sep	3,000					
Oct		4,000	4,000	4,000	4,000	3,000
Nov-Dec		4,500	4,500	4,500	4,500	3,500

* Increase to 6,000 if the Dec 8RI is greater than 800 TAF

[5] Minimum 3-day running average of daily Delta outflow of 7,100 cfs OR: either the daily average or 14-day running average EC at Collinsville is less than 2.64 mmhos/cm (This standard for March may be relaxed if the Feb 8RI is less than 500 TAF. The standard does not apply in May and June if the May estimate of the SRI IS < 8.1 MAF at the 90% exceedence level in which case a minimum 14-day running average flow of 4,000 cfs is required.) For additional Delta outflow objectives, see **TABLE A.**

[6] February starting salinity: If Jan 8RI > 900 TAF, then the daily or 14-day running average EC @ Collinsville must be ≤ 2.64 mmhos/cm for at least one day between Feb 1-14. If Jan 8RI is between 650 TAF and 900 TAF, then the CalFed Op's group will determine if this requirement must be met.

[7] Rio Vista minimum monthly average flow rate in cfs (the 7-day running average shall not be less than 1,000 below the monthly objective).

Year Type	All	W	AN	BN	D	C
Sep	3,000					
Oct		4,000	4,000	4,000	4,000	3,000
Nov-Dec		4,500	4,500	4,500	4,500	3,500

[8] BASE Vernalis minimum monthly average flow rate in cfs (the 7-day running average shall not be less than 20% below the objective). Take the higher objective if X2 is required to be west of Chipps Island.

Year Type	All	W	AN	BN	D	C
Feb-Apr14 and May16-Jun		2,130 or 3,420	2,130 or 3,420	1,420 or 2,280	1,420 or 2,280	710 or 1,140

[9] PULSE Vernalis minimum monthly average flow rate in cfs. Take the higher objective if X2 is required to be at or west of Chipps Island.

Year Type	All	W	AN	BN	D	C
Apr15 - May15		7,330 or 8,620	5,730 or 7,020	4,620 or 5,480	4,020 or 4,880	3,110 or 3,540
Oct	1,000*					

* Up to an additional 28 TAF pulse/attraction flow to bring flows up to a monthly average of 2,000 cfs except for a critical year following a critical year. Time period based on real-time monitoring and determined by CalFed Op's group.

[10] For the Nov-Jan period, Delta Cross Channel gates may be closed for up to a total of 45 days.

[11] For the May 21-June 15 period, close Delta Cross Channel gates for a total of 14 days per CALFED Op's group. During the period the Delta cross channel gates may close 4 consecutive days each week, excluding weekends.

[12] Minimum # of days that the mean daily chlorides ≤ 150 mg/l must be provided in intervals of not less than 2 weeks duration. Standard applies at Contra Costa Canal Intake or Antioch Water Works intake.

Year Type	W	AN	BN	D	C
# Days	240	190	175	165	155

[13] The maximum14-day running average of mean daily EC (mmhos/cm) depends on water year type.

	WESTERN DELTA				INTERIOR DELTA			
	Sac River @ Emmaton		SJR @ Jersey Point		Mokelumne R @ Terminous		SJR @ San Andreas	
Year Type	0.45 EC from April 1 to date shown	EC value from date shown to Aug15 *	0.45 EC from April 1 to date shown	EC value from date shown to Aug15 *	0.45 EC from April 1 to date shown	EC value from date shown to Aug15 *	0.45 EC from April 1 to date shown	EC value from date shown to Aug15 *
W	Aug 15		Aug 15		Aug 15		Aug 15	
AN	Jul 1	0.63	Aug 15		Aug 15		Aug 15	
BN	Jun 20	1.14	Jun 20	0.74	Aug 15		Aug 15	
D	Jun 15	1.67	Jun 15	1.35	Aug 15		Jun 25	0.58
C		2.78		2.20		0.54		0.87

* When no date is shown, EC limit continues from April 1.

[14] As per D-1641, for San Joaquin River at Vernalis: however, the April through August maximum 30- day running average EC for San Joaquin River at Brandt Bridge,Old River near Middle River, and Old River at Tracy Road Bridge shall be 1.0 EC until April 1, 2005 when the value will be 0.7 EC.

[15] Compliance will be determined between Jersey Point & Prisoners Point. Does not apply in critical years or in May when the May 90% forecast of SRI ≤ 8.1 MAF.

[16] During deficiency period, the maximum monthly average mhtEC at Western Suisun Marsh stations as per SMPA is:

Month	mhtEC
Oct	19.0
Nov	16.5
Dec-Mar	15.6
Apr	14.0
May	12.5

[17] In November, maximum monthly average mhtEC = 16.5 for Western Marsh stations and maximum monthly average mhtEC = 15.5 for Eastern Marsh stations in all periods types.

TABLE A

Number of Days When Max. Daily Average Electrical Conductivity of 2.64 mmhos/cm Must Be Maintained at Chipps Island and Port Chicago. (This can also be met with a maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average Delta outflows of 11,400 cfs and 29,200 cfs, respectively.) Port Chicago Standard is triggered only when the 14-day average EC for the last day of the previous month is 2.64 mmhos/cm or less. PMI is previous month's 8RI. If salinity/flow objectives are met for a greater number of days than required for any month, the excess days shall be applied towards the following month's requirement. The number of day's for values of the PMI between those specified below shall be determined by linear interpolation.

PMI (TAF)	Chipps Island (Chipps Island Station D10) FEB	MAR	APR	MAY	JUN
≤ 500	0	0	0	0	0
750	0	0	0	0	0
1000	28*	12	2	0	0
1250	28	31	6	0	0
1500	28	31	13	0	0
1750	28	31	20	0	0
2000	28	31	25	1	0
2250	28	31	27	3	0
2500	28	31	29	11	1
2750	28	31	29	20	2
3000	28	31	30	27	4
3250	28	31	30	29	8
3500	28	31	30	30	13
3750	28	31	30	31	18
4000	28	31	30	31	23
4250	28	31	30	31	25
4500	28	31	30	31	27
4750	28	31	30	31	28
5000	28	31	30	31	29
5250	28	31	30	31	29
≥ 5500	28	31	30	31	30

*When 800 TAF < PMI < 1000 TAF, the number of days is determined by linear interpolation between 0 and 28 days.

PMI (TAF)	Port Chicago (continuous recorder at Port Chicago) FEB	MAR	APR	MAY	JUN
0	0	0	0	0	0
250	1	0	0	0	0
500	4	1	0	0	0
750	8	2	0	0	0
1000	12	4	0	0	0
1250	15	6	1	0	0
1500	18	9	1	0	0
1750	20	12	2	0	0
2000	21	15	4	0	0
2250	22	17	5	1	0
2500	23	19	8	1	0
2750	24	21	10	2	0
3000	25	23	12	4	0
3250	25	24	14	6	0
3500	25	25	16	9	0
3750	26	26	18	12	0
4000	26	27	20	15	0
4250	26	27	21	18	1
4500	26	28	23	21	2
4750	27	28	24	23	3
5000	27	28	25	25	4
5250	27	29	25	26	6
5500	27	29	26	28	9
5750	27	29	27	28	13
6000	27	29	27	29	16
6250	27	30	27	29	19
6500	27	30	28	30	22
6750	27	30	28	30	24
7000	27	30	28	30	26
7250	27	30	28	30	27
7500	27	30	29	30	28
7750	27	30	29	31	28
8000	27	30	29	31	29
8250	28	30	29	31	29
8500	28	30	29	31	29
8750	28	30	29	31	30
9000	28	30	29	31	30
9250	28	30	29	31	30
9500	28	31	29	31	30
9750	28	31	29	31	30
10000	28	31	30	31	30
> 10000	28	31	30	31	30

Exhibit 3

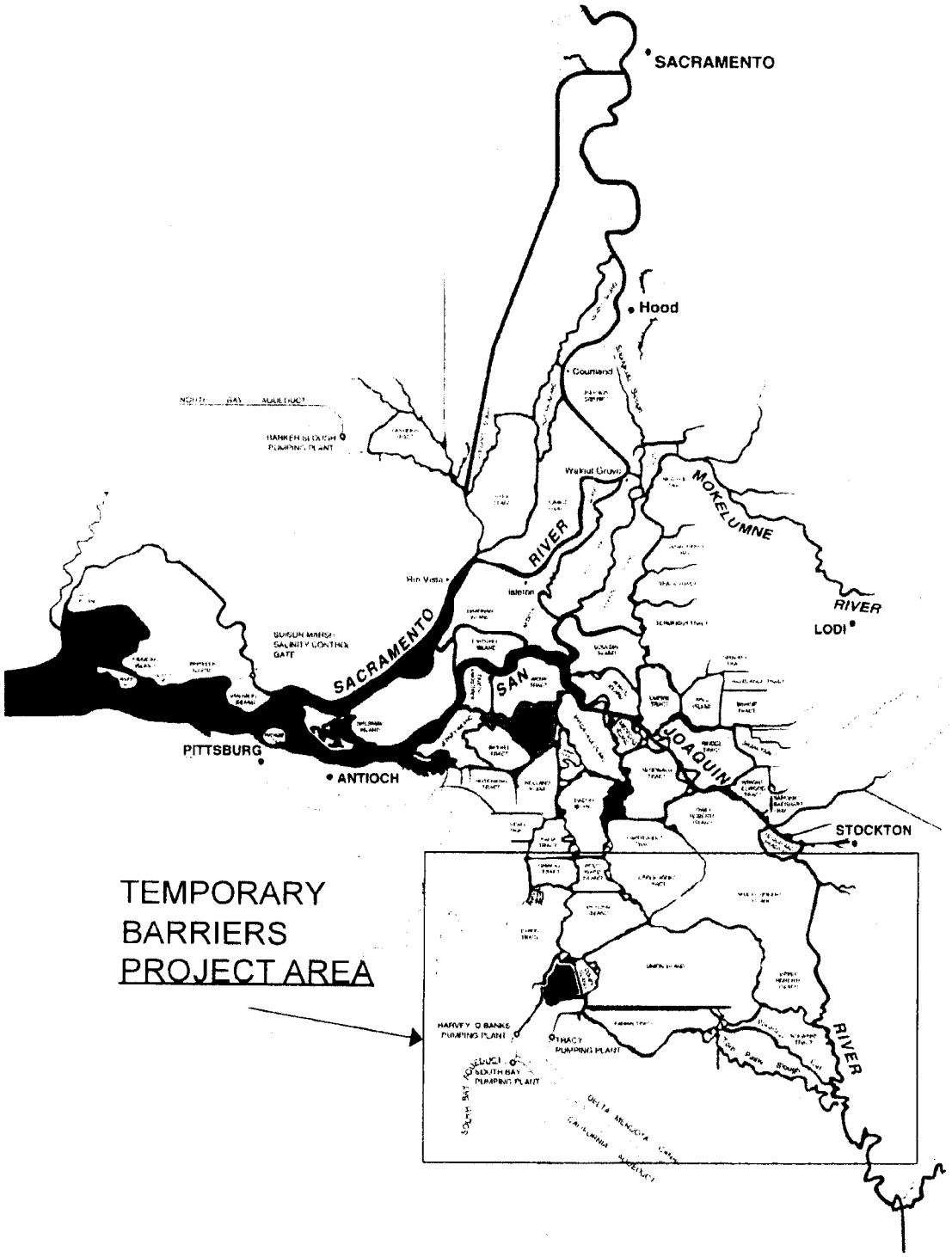
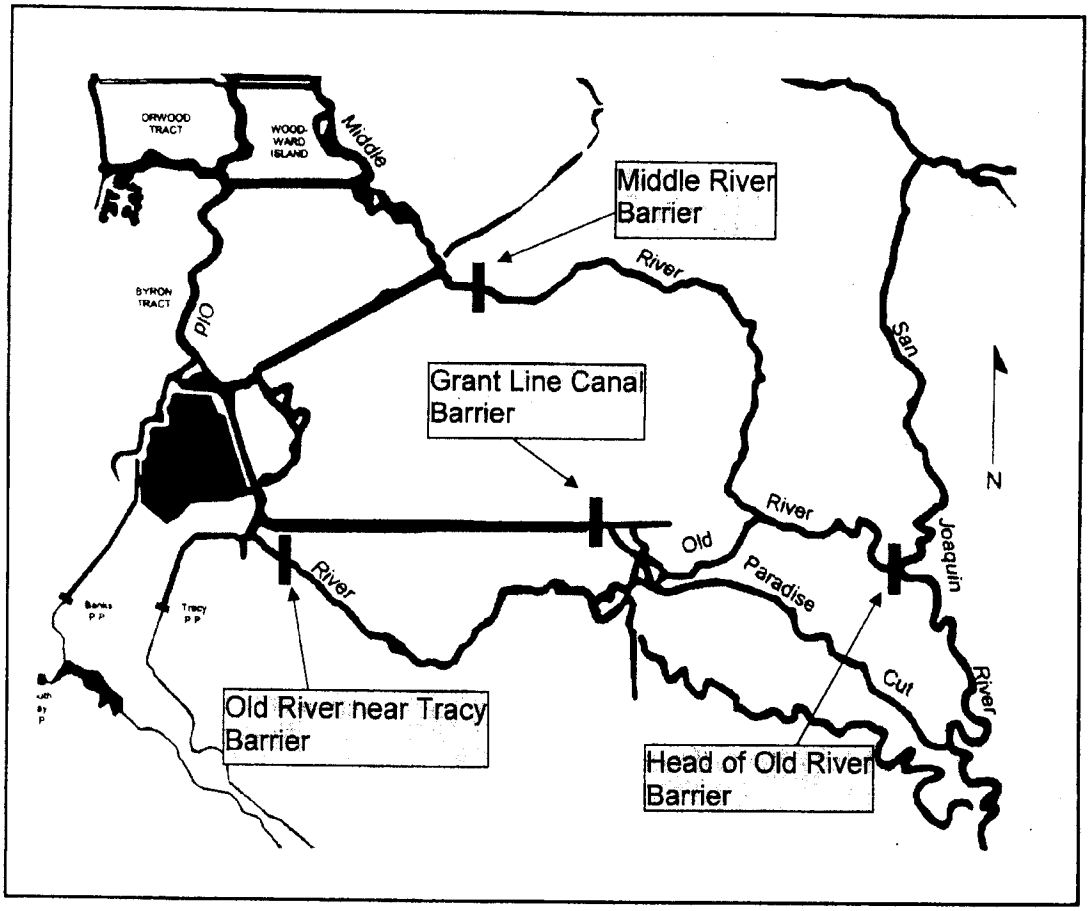

SACRAMENTO
Hood
Courtland
Walnut Grove
MOKELUMNE
RIVER
LODI
SACRAMENTO
RIVER
SAN
JOAQUIN
PITTSBURG
ANTIOCH
STOCKTON
TEMPORARY
BARRIERS
PROJECT AREA
HARVEY O BANKS
PUMPING PLANT
TRACY
PUMPING PLANT
SOUTH BAY
PUMPING PLANT
RIVER

Exhibit 3-A



Temporary Barriers Locations

Exhibit 3-B

Exhibit 4

Average Juvenile Winter Run Loss
Winter Run Length/Date Criteria
Non-Clipped Juveniles Only

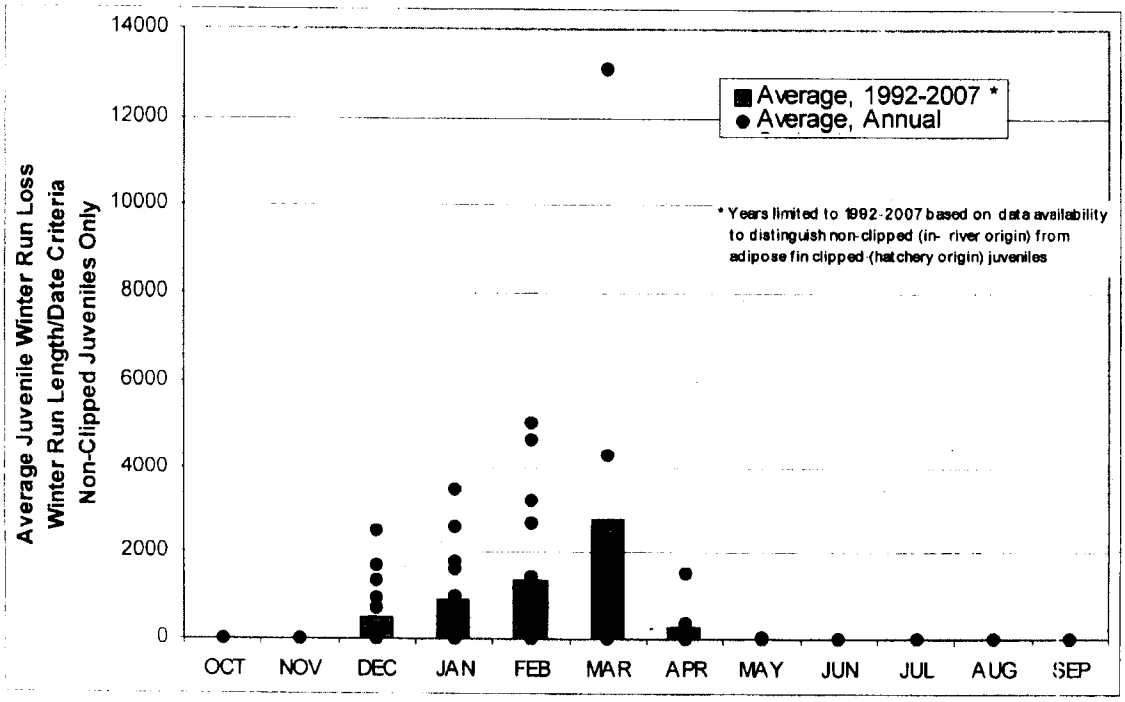


Exhibit 4-A

Average % Yearling Spring Run Loss
Coleman Hatchery Juvenile Surrogates

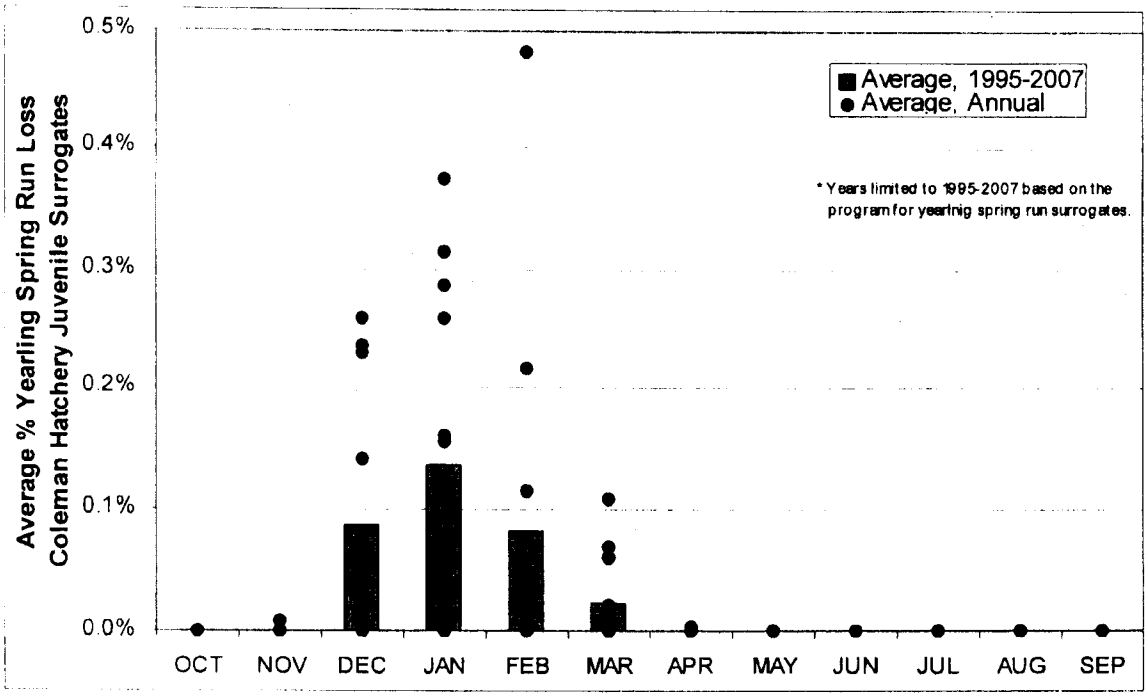


Exhibit 4-B

Average Juvenile Steelhead Salvage
Non-Clipped Juveniles Only

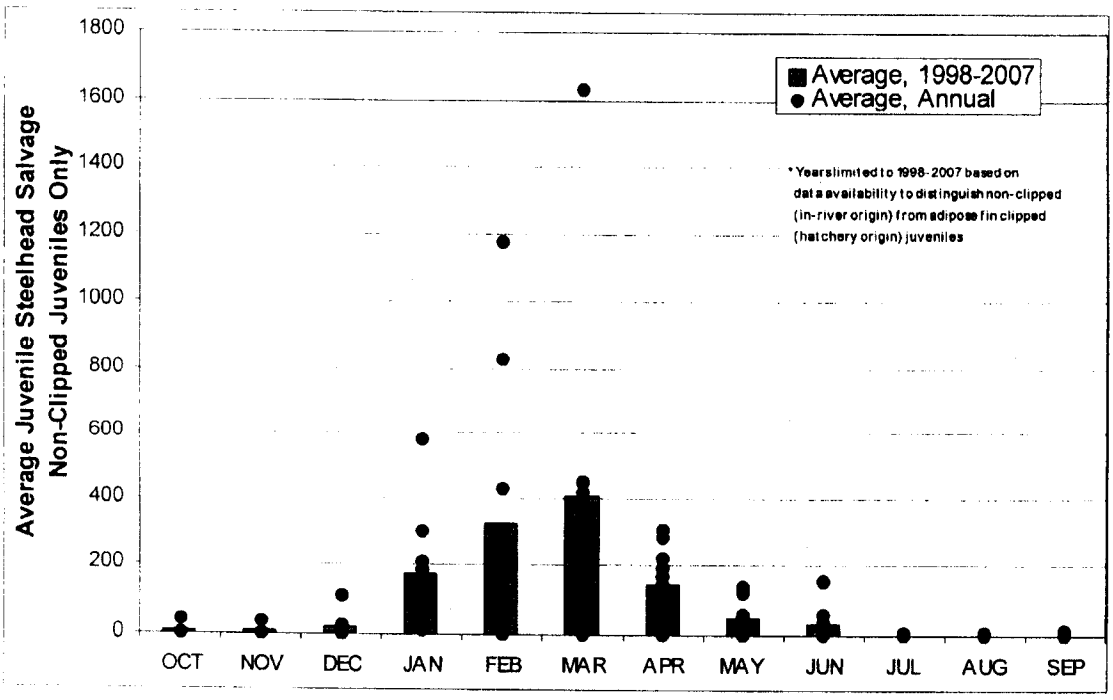


Exhibit 4-C