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By email and postal delivery

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Joseph L. Campbell
President

Elizabeth R. Anello
Vice President

Bette Boatman
John A. Burgh
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Walter J. Bishop
General Manager

January 11, 2008

Ms. Tam M. Doduc, Chair
and Members of the
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Subject: Pelagic Organism Decline Workshop - January 22, 2008

Dear Chair Doduc and Members of the State Water Resources Control Board:

Contra Costa Water District ("CCWD") appreciates this opportunity to provide information on the Pelagic Organism Decline in the San Francisco Bay / Sacramento-San Joaquin Delta Estuary. CCWD supports efforts of the State Water Resources Control Board ("State Board") to collect the latest scientific research and investigate actions that may be taken to improve fishery resources.

In support of the State Board's efforts, we offer the following discussion on the relationship between flows in Old and Middle River, export pumping, and direct mortality of delta smelt at the export pumps. We also provide a summary of proven fish protection actions that CCWD has implemented for your information as you consider requirements for fishery protection.

Recent Research on Delta Smelt and Old and Middle River Flow

The recent decision by Judge Wanger (*NRDC v Kempthorne*) imposes restrictions on instream flow in Old and Middle River based upon the link between the average Old and Middle River flow in January and February and direct mortality of delta smelt in those months at the Banks and Jones pumping plants (indicated by salvage counts). However, the direct cause of delta smelt mortality at the export pumps is high export levels. This is illustrated in a relationship between exports, adjusted for San Joaquin River flow, and delta smelt salvage that has an improved correlation and level of significance compared to the analogous relationship with Old and Middle River flows. Salvage and average flow in Old and Middle River are correlated, but the reason for this is that exports cause both salvage and flow changes in Old and Middle River.

Furthermore, fish and other aquatic species do not experience the average instream flow, but rather are subject to the tidal velocities, which vary spatially by location within the channel and continuously throughout the day. While net channel flow (for example, daily Delta outflow or Old and Middle River average flow) has been used as a parameter for characterizing flow conditions, aquatic species in the water column do not experience the net flow or velocities related to the net flow.

The State Board should take action to address the direct cause of fish mortality, and not rely on the surrogate measure of average Old and Middle River flow. Reliance on the surrogate measure adds confusion and complexity to the issue. Average Old and Middle River flow, dominated by export pumping, is also affected by the natural tides, changes in barometric pressure as weather systems pass through the region, and other water diversions. However, there is no evidence that these factors affect mortality at the export pumps. As indicated above, there is a stronger correlation between salvage and exports directly, than between salvage and the indirect measure of net flow in Old and Middle Rivers.

Example Protective Actions Taken by CCWD

CCWD has undertaken substantial measures to ensure our water diversions are environmentally responsible. These actions have proven successful (during the ten years since the Los Vaqueros Project was constructed, CCWD has taken only two delta smelt at its Delta pump plants) and may be of some use to the State Board in formulating its regulations regarding fishery protections.

- CCWD installed a positive barrier fish screen on its Los Vaqueros intake on Old River; research indicates this type of physical barrier is highly effective at preventing entrainment of fish greater than 5mm.
- As required by our biological opinions and included in the terms and conditions of our water rights, CCWD curtails Delta diversions for 75 days and ceases all Delta diversions for 30 days of each year during sensitive fish periods by meeting water demands with stored water from Los Vaqueros Reservoir. CCWD consults with resource agencies annually to determine the timing of the cessation to best benefit delta smelt and winter-run salmon.
- CCWD has a successful water conservation program. In the last twenty years, CCWD's diversions have decreased 15 percent (from 140,000 acre-feet per year to less than 120,000 acre-feet per year) despite a 40 percent increase in population within CCWD's service area.

More information on CCWD's actions to protect Delta fisheries is provided in the September 19, 2007 response from CCWD to the State Board concerning diversion curtailment in spring 2007, enclosed herein.

Finally, CCWD is planning a new state-of-the-art screened intake at a Delta location that will allow CCWD to shift the timing of some diversions from winter/spring to fall (when fish are less vulnerable). With this new intake, CCWD will be diverting a greater percentage of our total diversions through a screened intake without increasing total annual diversions.

If you have any questions, please call me at (925) 688-8100.

Sincerely,

A handwritten signature in blue ink, appearing to read "Greg Gartrell".

^{for}
Greg Gartrell
Assistant General Manager

GG/DS:wec

Enclosure: September 19, 2007 letter from CCWD to the State Board



**CONTRA COSTA
WATER DISTRICT**

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September 19, 2007

Sacramento-San Joaquin Delta Diversion Survey
Division of Water Rights
P.O. Box 2000
Sacramento, CA 95812

Subject: Actions taken for fish protection during spring 2007

Dear Division of Water Rights:

Contra Costa Water District (CCWD) respectfully submits the following information to the State Water Resources Control Board (State Water Board) in response to the request for information from Victoria A. Whitney, dated July 13, 2007.

During the critical time period identified by the California Department of Fish and Game (DFG), June 1 to July 9, CCWD was not diverting under the two water right permits referenced by the State Water Board survey forms (Permits 20749 and 20750), but rather taking delivery of Central Valley Project (CVP) water. Therefore, the survey forms as provided limit the information on the actions taken by CCWD. However, CCWD would like to make you aware of the fish protection measures CCWD has implemented in the south Delta, and inform you that CCWD took immediate further action to reduce diversions, taken under CVP water rights, in the affected area upon receipt of the DFG request. Information about these actions is provided in this letter and attachments.

CCWD has implemented a number of measures to provide protection for Delta fish, including installation of the *only* positive barrier fish screen in the central and south Delta. With the construction of the Los Vaqueros reservoir, CCWD ceases all Delta diversions for 30 days of each year during sensitive fish periods by meeting water demands with stored water. CCWD consults with resource agencies annually to determine the timing of the cessation to best benefit delta smelt and winter-run salmon. This program has been successful and in the 10 years since the Los Vaqueros Project was constructed, CCWD has taken only two (2) delta smelt at its Delta pump plants.

In addition, CCWD has a very successful, ongoing conservation program. In the last twenty years, CCWD's diversions have decreased 15 percent (from 140,000 acre-feet per year to less than 120,000 acre-feet per year) despite a 40 percent increase in

population within CCWD's service area. CCWD's conservation and recycling efforts have saved approximately 400,000 acre-feet over the last 12 years. This reduction in diversions also has a positive impact for Delta fisheries.

Upon receipt of the request for diversion curtailments from DFG, CCWD immediately reduced diversions at the Old River intake, shifted pumping out of the south Delta, and actively engaged in a conservation campaign asking our customers to renew efforts to conserve water.

These actions were taken even though flows in Old River were positive (i.e., not reversed) according to USGS records¹. Recent letters from the Department of Water Resources claimed that DWR was unable to stop reverse flows in Old and Middle Rivers because of CCWD's and other south Delta diversions. A review of the data shows that the net flows in Old River at Bacon Island were, in fact, positive (northward, not reversed) during the shutdown of SWP pumping (even though Jones Pumping Plant continued to pump at 800 cfs) and that reverse flows just prior to and subsequent to the shutdown were the result of temporary barriers and SWP pumping. In any event, DWR's assertion that negative flows were the result of CCWD's actions is not supported by the data.

Details of CCWD's ongoing fishery protection and conservation efforts and of specific actions taken during this critical year are provided in attachments to this letter.

If you have any questions or concerns, please call Leah Orloff at (925) 688-8083.

Sincerely,


for Leaha Orloff
Senior Water Resources Specialist

Attachments

- A – CCWD's Fish Protections Actions
- B – CCWD's Conservation Actions

cc: Victoria A. Whitney, Division Chief

¹ http://waterdata.usgs.gov/nwis/dv?cb_72137=on&format=html&begin_date=2007-01-01&end_date=2007-08-21&site_no=11313405&referred_module=sw

CCWD's Old River intake has state-of-the art fish screens. The National Marine Fisheries Service approved the screen design as required by the United States Fish and Wildlife Service (USFWS) and DFG. CCWD has the only screened intake in the south Delta. CCWD conducts regular monitoring to evaluate the performance of the fish screens and reports this information along with water quality and diversion information to the fishery agencies. In over ten years of operation, CCWD has only taken one larval delta smelt and zero adult delta smelt at the Old River intake in the south Delta and one adult delta smelt at the Rock Slough intake in the central Delta. For reference, from 1997 to 2006 the State and Federal exports have "salvaged" approximately 470,000 delta smelt².

Reductions to Diversions and Fish Monitoring in 2007

- March 15 to March 30 CCWD reduced Delta diversions, restricting filling of Los Vaqueros reservoir. Despite excellent water quality, no water was diverted to storage during this sensitive fish period at the request of fishery agencies.
- April 1 to April 30 CCWD halted all Delta diversions for 30 days at the request of DFG, USFWS, and NMFS. CCWD met demands by releasing from storage in Los Vaqueros reservoir. During this time period, 24 delta smelt were salvaged at State and Federal south Delta export facilities. Zero delta smelt were detected at the Old River and Rock Slough intakes.
- May 1 to May 30 CCWD reduced Delta diversions, restricting filling of Los Vaqueros reservoir. Despite very good water quality, no water was diverted to storage during this sensitive fish period at the request of fishery agencies. During this time period, 428 delta smelt were salvaged at State and Federal south Delta export facilities. Zero delta smelt were detected at the Old River and Rock Slough intakes.
- June 6 to July 12 CCWD reduced diversions from the Old River intake immediately upon receipt of the request from DFG. Despite not detecting any delta smelt through the Old River fish screens, diversions remained reduced until July 12. During this time period, 2169 delta smelt were salvaged at State and Federal south Delta export facilities. Zero delta smelt were detected at the Old River and Rock Slough intakes.

While diversions from the State Water Project were shutdown and the Federal diversions at Tracy were maintained at 800 cfs from June 1 to June 11, 2007, the net flow in Old River at Bacon Island averaged more than +150 cfs (away from the exports)³ with a tidal maximum flow of approximately 11,000cfs.

² Data Source: <ftp://ftp.delta.dfg.ca.gov/salvage/>

³ http://waterdata.usgs.gov/nwis/dv?referred_module=sw&cb_72137=on&format=html&site_no=11313405

CCWD has an ongoing commitment to respond to dry weather conditions with conservation messages and implementation of a variety of programs to achieve long-term water savings, including surveys, education, technical advice, rebates and incentives. In the 1987-1989, CCWD customers averaged over 140,000 acre-feet of water use per year; current levels are less than 120,000 acre-feet per year despite an increase in population of over 40%. This success is due to increased conservation, increased and improved flow metering, reduction in unaccounted-for-water, recycling and increased customer awareness about the importance of conserving water. During this year, CCWD increased visibility of our Water Conservation Program, encouraging customers to renew their conservation efforts and ensure efficient water use. Conservation messages have been integrated into all of the District's communication tools.

The following is a partial list of outreach efforts conducted this year:

- CCWD expanded and updated the conservation pages on our website.⁴
- CCWD developed a Top Ten Tips fact sheet for conservation in the home and garden; the fact sheets were distributed at summer community events and fairs.
- On July 31, CCWD Board of Directors President Joseph Campbell gave a presentation to the Walnut Creek Rotary Club, highlighted CCWD's water conservation messages and distributing the Top Ten Tips fact sheet.
- CCWD issued a news release on May 3, 2007 to encourage customers to renew their efforts to conserve. This news release was followed by numerous articles in the Contra Costa Times, the San Francisco Chronicle, and the Oakland Tribune.
- CCWD placed a ¼ page advertisement in the Contra Costa Times to celebrate Drinking Water Week during May 6 to May 12, leading with messages to use water wisely.
- CCWD was featured in various media campaigns in May, June and July, including newspaper, radio and television segments on conservation.
 - CCWD conservation messages were featured in a May 22 television segment.⁵
 - A second television segment aired on June 6, featuring a CCWD conservation survey being conducted.⁶
 - CCWD staff was interviewed by numerous radio stations, including KGO, KCBS, KQED, and KFOG, which featured conservations messages in several radio spots.
- CCWD included conservation messages in direct mailings to our customers, including a message on each water bill, a bill insert with details on our rebate program for high-efficiency toilets, and our quarterly newsletter with tips for easy conservation measures.
- CCWD joined with other local water agencies in a regional conservation advertising campaign. The campaign features a "Water Saving Hero" showcasing how average residents are implementing water saving strategies.⁷

⁴ <http://www.ccwater.com/conserve/>

⁵ Television segment may be viewed at: http://cbs5.com/local/local_story_142222048.html

⁶ Television segment may be viewed at: http://cbs5.com/local/local_story_158213515.html

⁷ <http://www.watersavinghero.com/index.html>

Additionally, CCWD has implemented a variety of Incentive Programs designed to encourage customers to purchase and install water efficient equipment and devices and CCWD is active in promoting conservation legislation and appliance standards. The following provides a brief description of the conservation programs implemented by CCWD.

RESIDENTIAL ULFT DISTRIBUTION PROGRAM: The Residential Ultra Low Flow Toilet (ULFT) Distribution Program offered free high-quality ULFTs to eligible customers. The program targeted pre-1992 single family and multi-family housing. Since the beginning of the program, CCWD has replaced more than 37,000 toilets with ULFTs. Beginning in FY07, CCWD will begin a new High Efficiency Toilet Program.

RESIDENTIAL HIGH EFFICIENCY CLOTHES WASHER REBATE PROGRAM: The District, along with six other water agencies, implemented a Bay Area Regional Clothes Washer Rebate Program. This program offered \$50 and \$100 rebates to residential customers who purchased high efficiency clothes washers.

PRE-RINSE SPRAY NOZZLE REPLACEMENT PROGRAM: The Program was part of a statewide program implemented by the California Urban Water Conservation Council. The program offered and installed free pre-rinse nozzles in restaurants and other food industry businesses.

LIGHT WASH- COMMERCIAL HIGH EFFICIENCY CLOTHES WASHER REBATE PROGRAM: The program offered rebates to install commercial-grade high efficiency clothes washers in apartment common laundry facilities and in commercial laundromats.

SMART SPRINKLER TIMER REBATE PROGRAM: This program, which is part of a Bay Area regional effort, provided incentives to customers to install self-adjusting, weather-based sprinkler timers.

COMMERCIAL EQUIPMENT & IRRIGATION UPGRADE REBATES: The program included rebates for urinals, cooling tower retrofits, irrigation timers, sprinkler-to-drip retrofits, rain sensors, sprinkler head upgrades, and other water using fixtures.

WATER-WISE GARDENING CD-ROM: CCWD offered its customers a free Water-Wise Gardening CDROM. The CD-ROM is a photo-oriented plant and garden database designed to inspire customers to plant low water-needing gardens.

LARGE LANDSCAPE WATER BUDGETS: The Landscape Water Budget Program is directed to those commercial and multi-family sites with dedicated irrigation water accounts. Water Budgets are prepared using real-time local evapotranspiration data and actual landscape areas measurements from an aerial photo.

GREEN BUSINESS PROGRAM: The Green Business Program is a partnership of environmental agencies, professional associations, waste management agencies, utilities, and a concerned public, working together to recognize and assist business and government agencies that operate in an environmentally-friendly manner.

PUBLIC INFORMATION PROGRAM: The CCWD Public Affairs Department coordinates with the Water Conservation Office to promote water conservation messages and programs through a variety of media. Publications, website pages, presentations, booths at community events, direct mail pieces, newsletters, newspaper ads, and water education programs are all tools used to promote water conservation.

WATER EDUCATION PROGRAM: The goal of the Water Education Program (WEP) is to teach children the importance of water in our lives and the importance of conserving water. CCWD's WEP educates service area school students about CCWD's mission to deliver clean, safe water in an environmentally responsible manner.



State Water Resources Control Board



Linda S. Adams
Secretary for
Environmental Protection

Division of Water Rights
1001 I Street, 14th Floor ♦ Sacramento, California 95814 ♦ 916.341.5300
P.O. Box 2000 ♦ Sacramento, California 95812-2000
Fax: 916.341.5400 ♦ www.waterrights.ca.gov

Arnold Schwarzenegger
Governor

SACRAMENTO-SAN JOAQUIN DELTA DIVERSION SURVEY

Name: Water Resources Manager

Address: 1331 Concord Avenue

Concord, CA 94520

Daytime phone number: (925) 688-8022

Basis of Right:

License # _____ Permit # 20750 Statement # _____ Other A025516A

Name of the water body at the point of diversion Kellogg Creek

1. Did you receive a notice from Fish and Game? Yes No
 If yes, did you reduce or curtail your diversion? Yes No
 Water Savings _____ Acre-feet Gallons
 How was savings achieved and will you continue this on a temporary or permanent basis?

See Attachment B

2. If you have not already implemented water reduction or curtailment measures, do you plan to implement measures to temporarily reduce or curtail your diversion in order to conserve water, and protect instream beneficial uses?
 Yes No
 How would water savings be achieved?

Estimated Water Savings _____ Acre-feet Gallons

3. Is your diversion screened for the protection of aquatic resources?
 Yes No
 If so, please describe.

N/A

Screen Area _____ Screen Mesh Size _____

4. Is your diversion equipped with a measuring device? Yes No
 If so, what type? Stage gage with a calibrated stage-discharge relationship

California Environmental Protection Agency



5. Normal hours of pump operation (am/pm) no pump
6. Capacity of diversion N/A CFS GPM
7. Maximum Annual Diversion: 9,640 Acre-feet Gallons
8. Season of Diversion: Jan - Dec
9. Purpose of use: Irrigation Domestic Other
10. Crop Grown: _____ Acres _____

Comments or Recommendations based on your local knowledge or observations (Use this space to also identify any unauthorized diversions you believe the State Water Board should investigate):

Signature: *Lucinda Smith* Date: 9/18/07

Please use the enclosed return envelope or mail survey to:

Sacramento-San Joaquin Delta Diversion Survey
 Division of Water Rights
 P.O. Box 2000
 Sacramento, CA 95812

The State Water Board thanks you for your response and cooperation.



State Water Resources Control Board



Linda S. Adams
Secretary for
Environmental Protection

Division of Water Rights
1001 I Street, 14th Floor ♦ Sacramento, California 95814 ♦ 916.341.5300
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Arnold Schwarzenegger
Governor

SACRAMENTO-SAN JOAQUIN DELTA DIVERSION SURVEY

Name: Water Resources Manager

Address: 1331 Concord Avenue

Concord, CA 94520

Daytime phone number: (925) 688-8022

Basis of Right:

License # _____ Permit # 20749 Statement # _____ Other A020245

Name of the water body at the point of diversion Old River

1. Did you receive a notice from Fish and Game? Yes No
 If yes, did you reduce or curtail your diversion? Yes No
 Water Savings _____ Acre-feet Gallons
 How was savings achieved and will you continue this on a temporary or permanent basis?

See Attachment B

2. If you have not already implemented water reduction or curtailment measures, do you plan to implement measures to temporarily reduce or curtail your diversion in order to conserve water, and protect instream beneficial uses?
 Yes No
 How would water savings be achieved?

Estimated Water Savings _____ Acre-feet Gallons

3. Is your diversion screened for the protection of aquatic resources?
 Yes No
 If so, please describe.

State-of-the-art positive fish barrier

See Attachment A

Screen Area 750 square feet Screen Mesh Size 3/32 Inch

4. Is your diversion equipped with a measuring device? Yes No
 If so, what type? Doppler

California Environmental Protection Agency



