RONALD J. TENPAS, Acting Assistant Attorney General

JEAN E. WILLIAMS, Section Chief
KEITH W. RIZZARDI, Trial Attorney (Fla. Bar No. 38237)
Environment & Natural Resources Division
U.S. Department of Justice
Benjamin Franklin Station, P.O. Box 7369
Washington, D.C. 20044-7369
Telephone: (202) 305-0209 / Facsimile:(202) 305-0275

Attorneys for the Federal Defendants

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA

NATURAL RESOURCES DEFENSE COUNCIL, CALIFORNIA TROUT, BAYKEEPER & ITS DELTAKEEPER CHAPTER, FRIENDS OF THE RIVER, and THE BAY INSTITUTE, all non-profit organizations, Plaintiffs, v. DIRK KEMPTHORNE, in his official capacity as Secretary of the Interior, and H. DALE HALL, in his official capacity as Director of the U.S. Fish and Wildlife Service, Defendants. SAN LUIS & DELTA MENDOTA WATER AUTHORITY, WESTLANDS WATER DISTRICT, CALIFORNIA FARM BUREAU FEDERATION, GLENN-COLUSA IRRIGATION DISTRICT, et al., CALIFORNIA DEPARTMENT OF WATER RESOURCES, STATE WATER CONTRACTORS; and KERN COUNTY WATER AGENCY. Intervenors/Defendants.	Case No.: 05-CV-01207 OWW LJO **DECLARATION OF CAY COLLETTE GOUDE**

I, Cay Collette Goude, declare as follows:

1. I am the Assistant Field Supervisor for the endangered species program in the Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service ("Service"). I have a BS in Renewable Natural Resources with an emphasis in fisheries biology from the University of California, Davis, and an MS in Biology, with an emphasis in fishery biology, from

California State University at Sacramento. One of my primary responsibilities includes the evaluation of the effects of federal actions within the Sacramento-San Joaquin River Delta ("Delta") upon listed species, including delta smelt, through the ESA §7 process. I have been working on actions involving the Delta and the delta smelt since 1984, including the development of the ESA § 4 rules listing the delta smelt as threatened, designating its critical habitat, and the most recent five-year status review.

2. The delta smelt currently are believed to be at one of the lowest levels of abundance on record. In addition, the water year type is dry on the Sacramento River and critical on the San Joaquin River system. The California Department of Fish and Game's 20 mm trawl indicates that the current center of distribution of this year's population of delta smelt, as of 6/23/07, is near the confluence of the Sacramento and San Joaquin Rivers. This is shown in Exhibit 1, attached hereto and incorporated herein.

3. An interagency team of biologists from the Service, National Marine Fisheries Service, California Department of Fish and Game, Department of Water Resources and U.S. Bureau of Reclamation worked on developing actions for this upcoming water year. These actions are intended to minimize or avoid take of the delta smelt from diversions of water in the south Delta by the Central Valley Project (CVP) and the State Water Project's (SWP) export facilities for those life stages of the delta smelt where they would otherwise potentially be subject to adverse effects from project operations. These actions were developed using the best available science. Exhibit 2, attached hereto and incorporated herein, provides the final list of actions that the Service has identified to minimize or avoid take of the delta smelt in the upcoming water year (water year 2008). This list was refined from the suite of possible actions identified by the interagency team.

4. Exhibit 2 identifies and describes the five actions to be taken from winter through summer for the upcoming water year. Exhibit 2 also identifies the delta smelt life stage that each action is intended to address, triggers that would begin the action, and the end point of each action. A description of how adverse effects upon delta smelt, which may result from CVP and SWP operations, are avoided or minimized are also provided along

with the supporting information in Exhibit 2 upon which the Service based our determination.

5. Actions 1 and 2 prescribe an upper boundary of Old and Middle River net upstream flow. Action 3 prescribes a target of daily net upstream Old and Middle River flow in the range from 0 to 4,000 cfs. The specific flow will be determined based on apparent distribution of delta smelt derived from survey data, hydrologic factors which would affect their habitat, and other biological information. Attachment A to Exhibit 2 provides the process for determining the appropriate flow target that would be within the above range.

6. Action 4 in Exhibit 2 provides flexibility to respond to variable conditions in the delta and real-time delta smelt distribution and abundance. Attachment B of Exhibit 2 provides a flow chart depicting the decision process for implementing action 4. Action 4 would result in modifications of project operations that would provide additional protection to juvenile smelt during the month of June. The biological information used to determine action 4 measures is similar to those utilized in establishing the flow targets for action 3.

7. Action 5 in Exhibit 2 consists of not installing the Head of Old River Barrier in the spring and tying open the flap gates on the south delta agricultural barriers. This action is to allow more smelt to move to the confluence of the Sacramento and San Joaquin Rivers by increasing the proportion of San Joaquin River flows into the South Delta. Not installing the Head of Old River Barrier may have a deleterious affect on juvenile fall run Chinook salmon emigrating from the San Joaquin. The fall run Chinook salmon is not listed under the ESA.

8. The Service is currently working on revising the existing 1996 Delta Smelt Recovery Plan. The Service has formed a recovery team to review all data and information on delta smelt and its habitat needs. This revised Recovery Plan will address numerous threats that are affecting delta smelt and their habitat as well as describe recovery actions expected to benefit the species. Some of the threats that will be addressed in the planning process include contaminants, invasive species, available spawning and rearing habitat,

and diversions of water (both consumptive use and cooling water for power plants).

9. In conclusion, implementation of the actions specified in Exhibit 2 are expected to adequately protect delta smelt from potential adverse effects associated with the diversion of water from the Delta by the CVP and SWP during the 2008 water year. The Service anticipates that, if the actions identified in Exhibit 2 are taken, adverse effects upon the delta smelt from the diversion of water by the export facilities will be minimized. The on-going reinitiation for delta smelt for the operation of the Central Valley and State Water Projects will evaluate all available information, data, and analysis of the effects on delta smelt as well as listed salmonids and green sturgeon.

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

Dated this 3rd day of July, 2007.

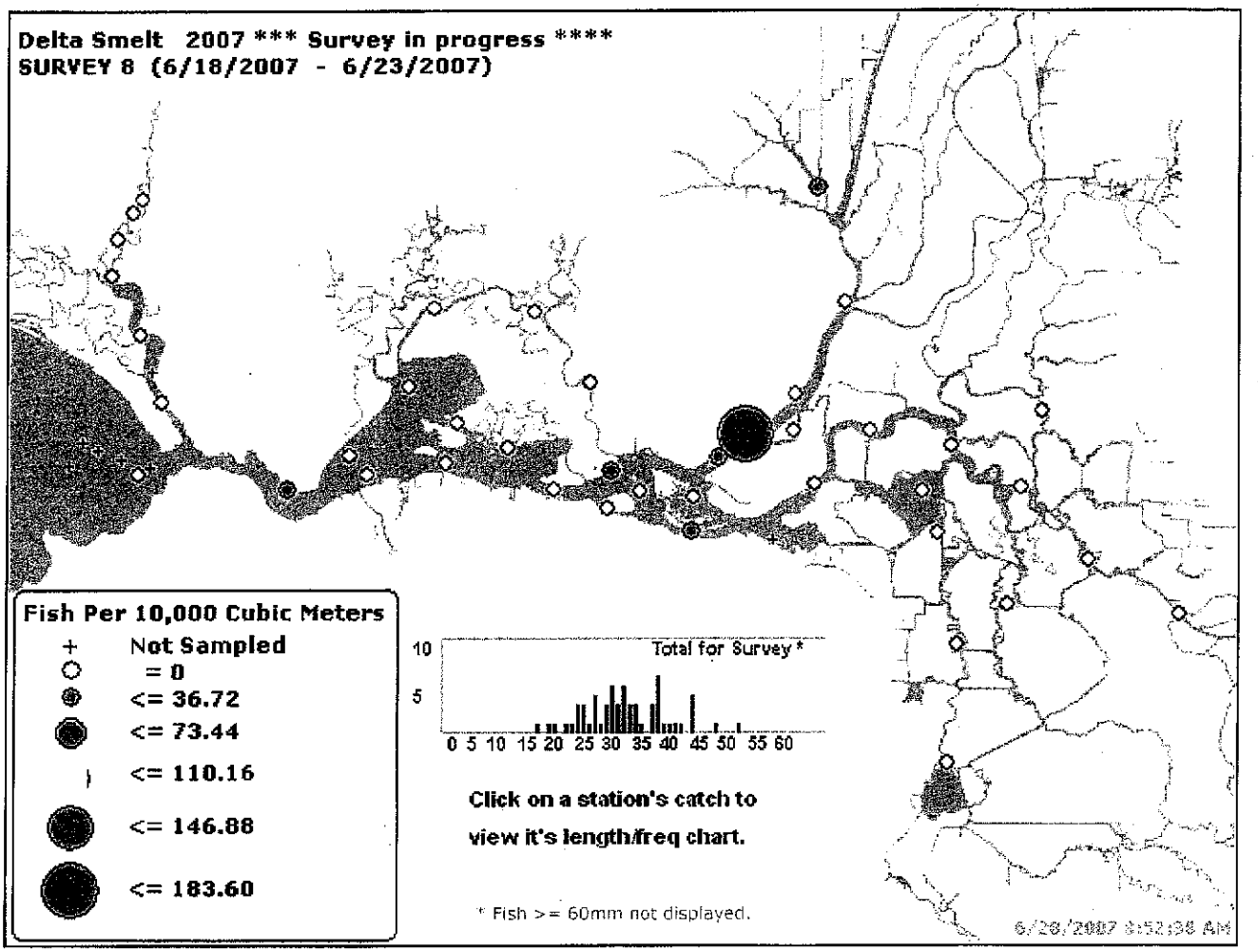
Cay Collette Goude
Assistant Field Supervisor, U.S. Fish and Wildlife Service

Exhibit 1

Exhibit 1

SELECT SPECIES	YEAR	SURVEY	View Station ID:	Optional Max Value : Values less than actual maximum will be ignored.
Delta Smelt	2007	8		Draw Map

Data Table Below Map



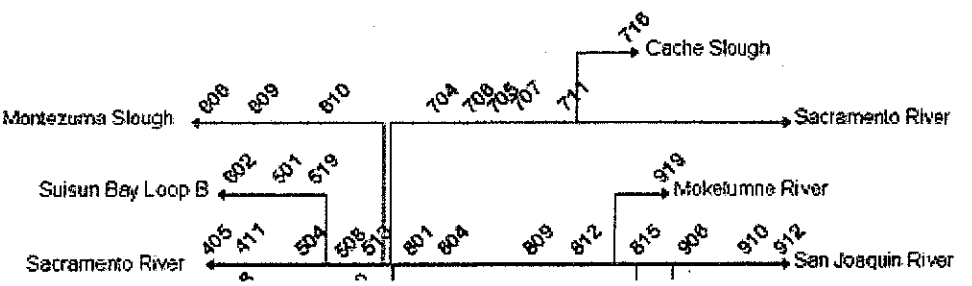


Exhibit 2

Exhibit 2 Delta Smelt Action Matrix for Water Year 2008 7/3/07

Action #	Timing	Life stage	Action	Triggers	End of Action	Benefits to delta smelt
1	Winter	Adults	Within 3 days of the trigger, achieve an average net daily upstream Old and Middle River (OMR) flow not to exceed 2,000 cfs for a 10-day period (one time action).[1]	On or after December 25 contingent on when turbidity threshold is greater than 12 Nephelometric Turbidity Unit at Prisoners Point, Holland Tract, or Victoria Island unless the three-day average Sacramento River flow at Freeport is greater than 80,000 cfs during the period	After 10 days or if the three-day Sacramento River flow at Freeport increases to greater than 80,000 cfs during the 10 days, or the onset of spawning[2] or when water temperature reach 12°C[3]	Pulse flow for pre-spawning adult smelt to minimize movement into the south delta where they would be entrained and their offspring would also be entrained.[4] The goal is to maximize the number of smelt that spawn north of the confluence where their offspring are less susceptible to entrainment at the facilities.
2	Winter	Adults	Daily net upstream OMR not to exceed 4,500 cfs[5]. The flow will be a 14-day running average. Simultaneously, the 7-day running average will not exceed 5,000 cfs.	Immediately following action #1 or beginning January 15 unless the three-day average Sacramento River flow at Freeport is greater than 80,000 cfs	The onset of spawning[2] or when delta water temperatures reach 12°C[3]	To minimize the number of pre-spawning adult smelt entrained at the facilities and to avoid spawning in the south delta where their offspring could be entrained.
3	Winter/ Spring	Larval/ Juvenile	Target daily net upstream OMR flow of 0-4,000 cfs[6]. As described in Attachment A to this Exhibit, actual flow to be determined based on the real-time data estimating spawning distribution and the susceptibility of a substantial portion of the population to the effects of Project operations based on particle tracking model results or other real time data. The flow will be a 14-day running average. Simultaneously, the 7-day running average shall be within 500 cfs of the applicable 14-day running average	Initiate the action at the onset of spawning[2] or when water temperatures reach 12°C[3] This action may be modified or unnecessary if the distribution of spawning delta smelt, larvae and juveniles is not occurring south or east of Frank's Tract and flows in the Yolo Bypass have reached the lower end of the Bypass.	Until entrainment risk is abated (see Attachment B to this Exhibit) or June 1, whichever occurs first[7]	To minimize the number of larval smelt entrained at the facilities.
4	Spring/ Summer	Juvenile	Evaluation of real-time delta smelt data to recommend an action to protect juvenile smelt.	Based on real-time information, starting June 1. Evaluation of conditions to start Action 4 will begin May 15.	Until entrainment risk abated (see Attachment B to this Exhibit) or June 30	Potentially provide additional protections to delta smelt. Effects to listed salmon, steelhead and green sturgeon will be incorporated into the decision making process
5	Spring	Larval/ Juvenile	No installation of Spring Head of Old River Barrier and flap gates tied open on south delta agricultural barriers.	31 day period of increased San Joaquin River inflow and reduced export pumping outlined in Water Rights Decision 1641	End of VAMP[7]	To allow a greater proportion of the San Joaquin River to contribute to a more positive OMR flow to allow smelt to move to the confluence [8]

Exhibit 2 Delta Smelt Action Matrix for Water Year 2008 7/3/07

Footnotes:

1 Action #1 may be the first action or it may follow or be concurrent with Action #2.

2 The onset of spawning is indicated by the presence of spent females collected in Spring Kodiak Trawl OR at the salvage facilities.

3 Delta water temperature will be determined based on a three station average of the water temperatures at the Mossdale, Antioch and Rio Vista monitoring stations.

4 A pulse flow based on the "first flush" conceptual model, developed by the DSWG in meeting notes from 10/10/06 but based on salvage triggers (an analysis prepared by Dr. Mike Chotkowski, USBR unpublished data available from the author or from the Service) and Particle Tracking Modeling (PTM).

5 Net upstream OMR flow is based on Peter Smith's (PE, USGS) relationship (unpublished data available from the author or from the Service).

6 Typically, the range of 0 to 4,000 cfs would be the net upstream OMR flow.

7 VAMP conditions as described in Water Rights Decision 1641 are assumed to occur during this period.

8 Based on PTM produced for the DSWG by DWR modeling staff-see DSWG notes attached

Delta Smelt Working Group Meeting Notes

March 26, 2007

Participating: Mike Chotkowski (USBR), Kevin Fleming (CDFG), Lenny Grimaldo (CDWR), Bruce Herbold (EPA), Tracy Hinojosa (CDWR), Ted Sommer (CDWR), Kevin Sun (CDWR, guest), Ann Lubas-Williams (USBR), and Peter Johnsen (USFWS, convener and scribe)

For Discussion:

1. Latest delta smelt information
2. Previous PTM-runs
3. OMR flows and EWA update
4. Evaluation of current recommendation
5. Head-of-Old River barrier

Recommendation for WOMT:

No new recommendations at this time.

Meeting Notes:

1. The Delta Smelt Working Group reviewed the delta smelt distribution and maturity data from the second supplemental Spring Kodiak Trawl that was conducted on March 20 and 21. The 'Supplemental Survey' is designed to sample areas of high concentration intensively, to estimate the proportion of ripe, unripe, and spent delta smelt.

Water temperatures had cooled down the last few days and most areas of the Delta are near 16^0C. Percentage of mature delta smelt has increased compared to earlier surveys. Of the 93 delta smelt (61 females: 29 males: 3 undetermined) collected, about 39 and 41 percent of the females and males, respectively, were mature. One spent male was collected. The survey only included, and collected, fish from the Montezuma Slough, Suisun Bay, Sacramento River near the confluence with the San Joaquin River, Cache Slough, and the Sacramento River Deep Water Ship Channel (SRDWSC).

The Department of Fish and Game has also completed the first 20-mm survey. The survey was conducted from March 13 through March 17. The observed late gonadal maturation of delta smelt and the short period that temperatures have been above 13^oC suggests that spawning has just started. Larvae are therefore too small to be efficiently sampled by the gear used for the 20-mm survey. Nevertheless, larvae were sampled at stations in Montezuma Slough, the mouth of Sacramento River, and at the Sacramento River/San Joaquin River confluence. Delta smelt was not sampled at Cache Slough, in Sacramento River downstream of the SRDWSC, or from the Central or South Delta. Larvae lengths were measured to 5 millimeters.

DFG staff has posted the results of SKT and 20-mm sampling to the web (http://www.delta.dfg.ca.gov/).

Delta smelt was not salvaged at any of the facilities during the last two weeks and no observations incidental to salvage occurred. Cumulative salvage since the first salvage on February 20 is 36 delta smelt taken at the export facilities. Delta smelt have been observed incidental to the salvage three times since February 14.

2. The Working Group again reviewed the PTM-runs provided by DWR staff for the March 12, 2007, meeting. DWR staff informed the group that projected Sacramento River flows (projected at 13,000 cfs) are likely to be slightly lower than used in the PTM-runs while San Joaquin River flows (projected at 1,800 cfs) will be slightly higher than modeled. Nevertheless, the modeled dry year conditions (SacR @ 15,000 cfs and SJR @ 1,667 cfs) seems to reasonable captures projected hydrological conditions for April (see March 12, 2007, meeting notes for all assumptions used in the PTM-runs). Based on the projected dry April, the Working Group is concerned about larvae entrainment if OR/MR is low.

3. The Working Group discussed if the forgoing the installation of the Head-of-Old River Barrier is likely to provide additional protection to delta smelt larvae given what we know of the current delta smelt distribution. Some members of the Working Group expressed concerned that the SKT trawls have been deceiving and that enough production of larvae in the Central and South Delta may have occurred to be concerned. It was noted that delta smelt larvae have always been present in the Central/South Delta during dry years. The position of X2 was at 74 km just west of Chipps Island and the current increase in exports may have resulted in larvae being drawn into the Central Delta. The 20-mm survey will give a clearer picture of larvae distribution as spawning continues and larvae increase in size.

Earlier PTM-runs have shown that entrainment of particles injected at stations in the South and Central Delta increases substantially when the barrier is installed compared to when they are not installed. On the other hand, OR/MR flows are normally high during VAMP and that installment of the barriers will be of less concern. It was suggested that the group recommend that if the barriers (both the Head-of-Old River and agricultural barriers) were to be installed, they should only be installed during VAMP and then removed once VAMP is completed. However, the hydrology is expected to follow a dry year with San Joaquin River flows of 3,200 cfs and a combined export of 1,500 cfs during VAMP and no double step. The Working Group could not come to a conclusion if the barriers would affect entrainment of larvae originating in the Sacramento River Portion of the Delta given the projected conditions.

Though some larvae may be present in the Central and South Delta, the Working Group still believes that the majority of spawning will occur in the Sacramento River Portion of the Delta. The group therefore felt that any recommendation to WOMT should be concentrated on protecting larvae originating from Cache Slough, SRDWSC, and the Sacramento River downstream of the SRDWSC. Acknowledging that not enough information existed to evaluate how the barriers would affect entrainment during the projected dry conditions, the Working Group requested that DWR provide new PTM-runs for particles injected at Station 815, 711, and 704 with and without the barriers

installed. The Working Group agreed to meet again the next day at 11:00 am to discuss the installation of barriers.

Next meeting: Monday, March 27 at 3:00 pm via conference call.

Submitted,
PJ

Delta Smelt Working Group Meeting Notes

March 27, 2007

Participating: Mike Chotkowski (USBR), Kevin Fleming (CDFG), Lenny Grimaldo (CDWR), Bruce Herbold (EPA), Tracy Hinojosa (CDWR), Victoria Poage (USFWS), Jim White (CDFG), Ann Lubas-Williams (USBR), and Peter Johnsen (USFWS, convener and scribe)

For Discussion:

1. New PTM-runs
2. Head-of-Old River and agricultural barriers

Recommendation for WOMT:

The Working Group withdraws the earlier preliminary recommendation to forgo the installation of the Head-of-Old River barrier.

Meeting Notes:

1. Sacramento River flows are up and pumping on the CVP down to meet an Export/Inflow rate of 35 percent. Currently no additional EWA debt to DWR is accruing. This is expected to change as of April 1 when higher volumes of water will be released in Sacramento River to meet outflow standards and increase water exports. As of April the water year is expected to be characterized as a dry year and San Joaquin River flows are projected at 3,200 cfs during the VAMP period, which is scheduled to start on April 22.

Department of Water Resources' provided for the Working Group additional PTM-runs with the Head-of-Old River barrier installed and a 90 percent exceedence hydrology. Particles were injected at the same stations as in earlier runs without the barriers (stations 711, 704, and 815). In addition, DWR staff provided results for particles injected at another Central Delta station, station 809 (Table 1). The results did not show any substantial increase (all stations had less than one percent increase) in entrainment of particles injected at stations 711, 704, and 815 relative to PTM-runs without the barriers in place (Table 1). With the barriers installed, the percentage of particles injected at station 711 that were entrained at the export facilities increased from less than one percent to almost 5 percent for OR/MR flows of negative 2,000 cfs and negative 4,000 cfs, respectively. Particles injected at station 704 had a similar increase in the percentage of particles entrained at OR/MR flows of negative 4,000 cfs and negative 6,000 cfs, respectively (Table 1). These results were similar to results for PTM-runs without barriers installed.

Particles injected at station 815 (i.e., the Central Delta) had, as was seen with PTM-runs without the Head-of-Old River barriers installed, a substantial increase in percentage of entrained particles between OR/MR flows of negative 2,000 cfs and negative 4,000 cfs. At OR/MR flows of negative 4,000 cfs, the CVP and SWP facilities entrained 35.7 percent of particles injected at station 815. Comparably, without the barriers installed,

35.0 percent of particles injected at station 815 were entrained at an OR/MR flow of negative 4,000 cfs. For particles injected at station 809, a large increase in entrainment (from 3.6 % to 20.6 %) occurred when OR/MR flow was changed from negative 4,000 cfs to negative 6,000 cfs. However, particles were not injected at this station during previous PTM-runs, and the results can therefore not be compared with percent entrainment when barriers are not installed.

Table 1. Comparison of the CVP and SWP combined percentage of particles entrained with and without the Head-of-Old River barrier installed. PTM-run outputs showed particle fates over a 31-day period for five values of Old River/Middle River flow (cfs). All runs assume a 90 percent exceedens (i.e., dry year) hydrology

		Percent particles entrained at different OR/MR flows (cfs)				
Stations	**Barriers**	**0**	**-2000**	**-4000**	**-6000**	**-8000**
704	Without	0	0.3	0.7	4.4	17.5
704	With	0	0.3	0.8	4.6	18.1
711	Without	0	0.1	4.1	15	32.5
711	With	0	0.1	4.7	15.3	33.1
815	Without	0	7.2	35	74.6	91.1
815	With	0	8.7	35.7	75.1	91.5
809	Without	N/A	N/A	N/A	N/A	N/A
809	With	0	0.1	3.6	20.6	48.2

2. The Working Group discussed the barriers based on the previous and new PTM-run results. The group still has concerns with entrainment of larvae originating in the South or Central Delta, or of larva that may have been drawn into the Central Delta from the Sacramento River. Larvae are normally found in relative large numbers in the Central and South Delta during dry years. However, the Working Group believes that for this year very few larvae may be found in the Central Delta because of the current observed distribution of adult delta smelt.

Based on what is known about delta smelt distribution and results from PTM-runs, it seems that forgoing installation of the Head-of-Old River barrier during the VAMP experiment will not provide substantial additional protection of delta smelt. The Working Group therefore generally agreed to withdraw the previous recommendation not to install the Head-of-Old River barriers. However, the Working Group will continue to monitor 20-mm survey results and Delta hydrology to determine if removal of the barrier once VAMP is completed would provide additional protection of delta smelt.

Next meeting: Monday, April 02 at 3:00 pm via conference call.

Submitted,
PJ

Exhibit 2

Attachment A

Attachment A: Process for determining target Old and Middle River flow for Action #3

In order to determine the appropriate target between 0 and 4000 cfs Old and Middle River (OMR) net upstream flow to protect delta smelt under Action #3, the following process will be followed:

1. The Service will convene the Delta Smelt Working Group (DSWG) to provide biological information, including a preliminary recommendation, to the Service.

2. The DSWG will examine real time information on delta smelt and delta environmental conditions to determine what OMR flow would be adequate to protect delta smelt. The real time information to be considered will include:

a. Real time delta smelt distribution data from Spring Kodiak Trawl Survey sampling, 20 mm Survey sampling or other monitoring data,
b. Salvage information from the CVP and SWP facilities,
c. Particle tracking models based on delta smelt distribution as inferred from the most recent monitoring surveys, and the best available forecast of Delta hydrology, including projected river flows and export rates,
d. Delta temperature data: When delta water temperatures reach 12° C, this serves as an indicator of the onset of spawning. The time period that water temperatures are between 12° C and 18° C can give an indication of the length of the spawning window. The expected number of delta smelt cohorts for the year can be inferred from an examination of survey and temperature information,
e. Number and pattern of delta smelt collected in the monitoring surveys,
f. New biological information that may be developed as a result of ongoing studies.

The DSWG will determine based on this information where the majority of delta smelt are most likely to occur and the net OMR flow to avoid or minimize entrainment of delta smelt and provide a preliminary recommendation to the Service.

3. The Service will provide its preliminary recommendation to the Water Operations Management Team (WOMT) as to what OMR flow or other protective actions that would be needed to protect larval and juvenile delta smelt for discussion at WOMT. The WOMT includes the Department of Water Resources, the U.S. Bureau of Reclamation, the California Department of Fish and Game, and the National Marine Fisheries Service, and the Service, that are represented by each agency's director. Additional biological or hydrological information not described above may also be considered useful to the decision-making process by the Service in development of its preliminary recommendation to WOMT.

4. If WOMT agrees with the Service's recommendation, the Project Agencies implement the Service's recommendation. If WOMT does not agree with the Service's recommendation, WOMT will propose an operational response.

In the event of disagreement, the Project Agencies will provide additional information about operational constraints to the Service. Any WOMT agency can provide additional information to the Service.

The Service either concurs with the Project Agencies' proposed operations or notifies the Project Agencies that implementation of the Service-proposed modification of operations is necessary to adequately protect the delta smelt.

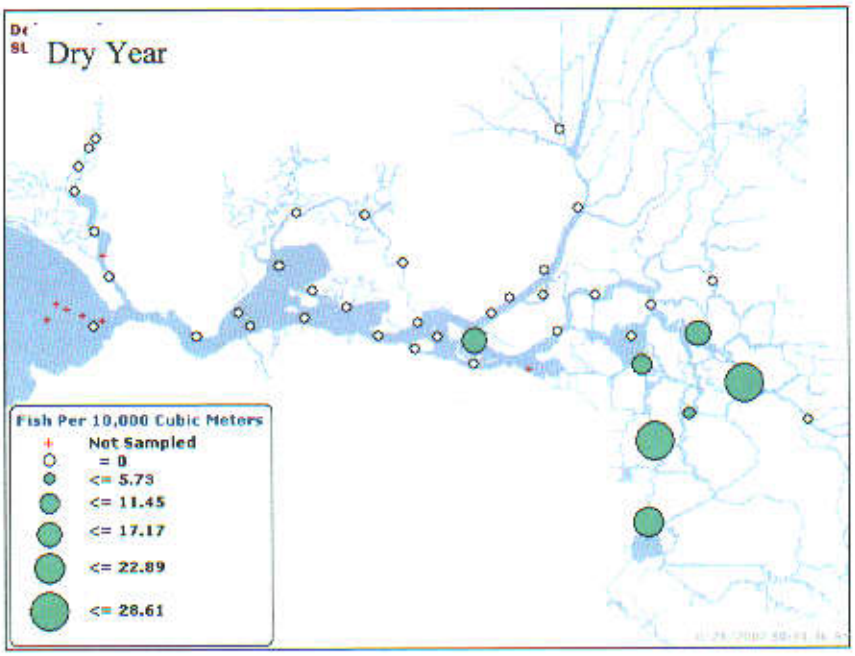
The Service retains the right to recommend additional actions based on real time conditions.

5. As conditions change, the DSWG and the Service will continuously evaluate conditions and reassess the operative OMR flow and the Service will adjust the requirement if it is determined that additional protection is needed or if less protection is warranted.

6. The following examples show three different distributions of delta smelt and generalized hydrologic conditions that illustrate the process for determining the approximate OMR flow necessary to avoid or minimize entrainment. The examples approximate a dry year, a moderate water year and a wet year. Please note that these examples are hyothetical and do not constitute an exhaustive description of conditions and recommendations that could be expected to occur.

Examples for Action 3

Example 1

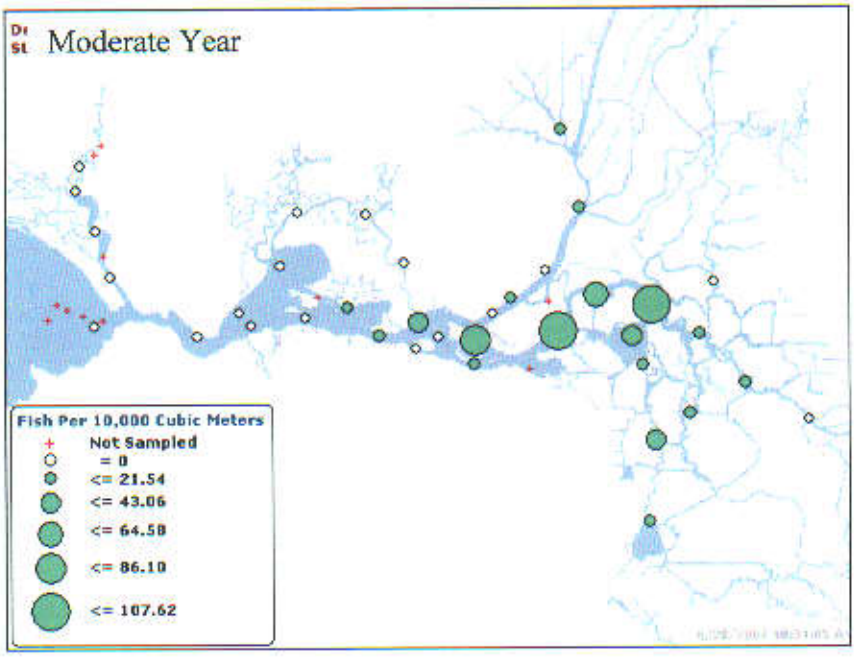


Hydrology:
Sacramento River Flow of 15,000 cfs
San Joaquin River Flow of 900 cfs

Assumptions:
Pumping rate of 6,000 combined exports
Previous fall midwater trawl recovery index: 45

Potential Actions:
Under this example, with a distribution centered in the central and south Delta and a low previous year's fall midwater trawl index, concern would be extremely high. Particle tracking modeling would likely predict a very high risk of entrainment at the facilities under these conditions, and a net upstream OMR flow closer to 0 would likely be recommended to avoid or minimize entrainment. Operational and hydrological limitations may limit the ability to fully meet this recommendation.

Example 2

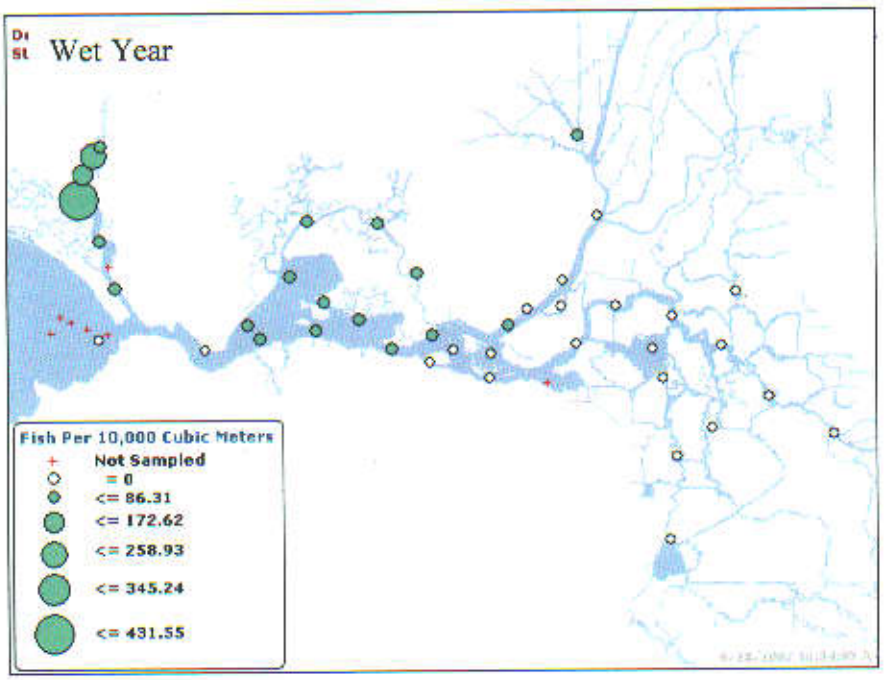


Hydrology:
Sacramento River Flow of 30,000 cfs
San Joaquin River Flow of 5,000 cfs

Assumptions:
Pumping rate of 8,000 combined exports
Previous fall midwater trawl recovery index: 45

Potential Actions:
Under this example, with a distribution centered in the central and south Delta and a low previous year's fall midwater trawl index, concern would be high. Particle tracking modeling would likely predict a moderate risk of entrainment at the facilities under these conditions, and a net upstream OMR flow around 0-2000 may be recommended to avoid or minimize entrainment. Another concern would arise if indirect effects of the export facilities resulted in the redistribution of delta smelt into the less productive south Delta. Although the Projects would be expected to entrain relatively fewer fish under this example, extending holding of delta smelt in the poorer habitat conditions in the south Delta would likely be of concern.

Example 3



Hydrology:
Sacramento River Flow of 80,000 cfs
San Joaquin River Flow of 8,000 cfs

Assumptions:
Pumping rate of 10,000 combined exports
Previous fall midwater trawl recovery index: 45

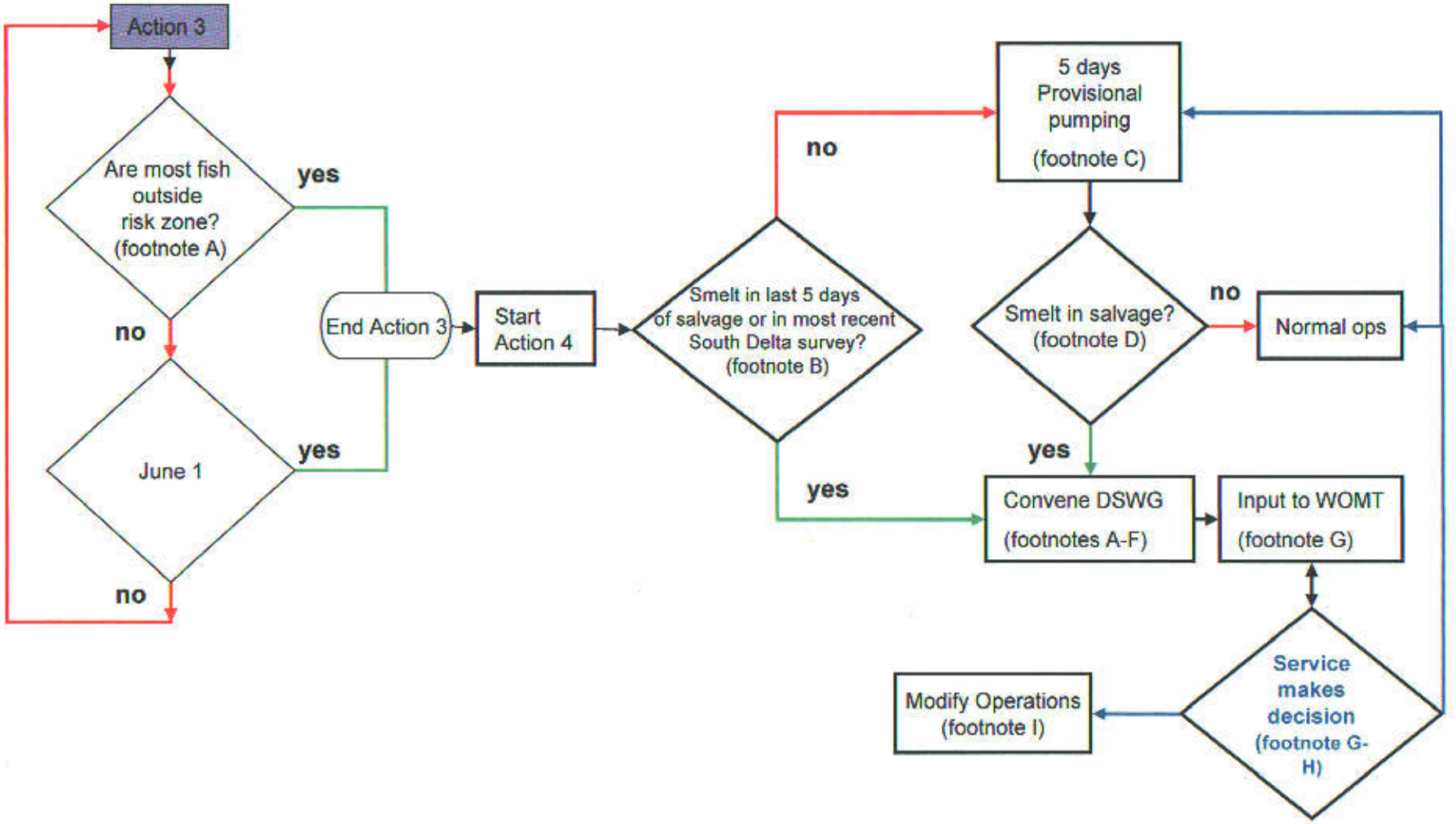
Potential Actions:
Under this example, with a distribution centered in Suisun Bay and a low previous year's fall midwater trawl index, concern would be low, relative to drier year types. Particle

tracking modeling would likely predict a low risk of entrainment at the facilities under these conditions and a net upstream OMR flow closer to 4,000 may be sufficient to protect delta smelt. Under this example, net upstream flows may be positive due to hydrology, and may end the action.

Exhibit 2

Attachment B

Attachment B: Process for ending Action 3 and Implementing Action Number 4.



See footnotes on next page

Footnotes for Attachment B of Exhibit 2

A. Particle tracking modeling will be used to estimate the intensity and spatial extent of the water export facilities' hydrological influence within the Delta at expected OMR flows under normal operations (i.e., "estimated risk zone"). Distribution of delta smelt will be estimated by using near real time data from delta smelt surveys, e.g. Spring Kodiak Trawl (SKT) and 20-mm surveys. Overlap between the "estimated risk zone" and the delta smelt distribution will then be used to evaluate potential larvae exposure to entrainment. See examples in Attachment A to Exhibit 2.

B. Delta smelt occurrence in the salvage or at any south Delta sampling stations for the most recent 20-mm or Summer Townet surveys.

C. Increased exports would be provisional based on continuing re-evaluation of the data at hand, which are the data evaluated for Action 3.

D. Observation of one (1) delta smelt in salvage at either water export facility will trigger a meeting of the DSWG.

E. Using data from surveys, the DSWG will draw preliminary conclusions regarding the relative abundance of delta smelt and their approximate distribution. This information will be used, along with the factors set out in Attachment A to Exhibit 2, to evaluate the potential for adverse effects to the year's delta smelt population from diversions by the projects and develop modifications to the projects' operations as necessary to minimize adverse effects upon the smelt population.

F. Historically, smelt were not found in the south Delta at surface temperatures above 25.6° C (CDFG) Also, salvage of delta smelt typically drops off after mean size ~40mm FL (based on review of historic 20-mm survey and/or Summer Townet survey data). DSWG will assess conditions using the data generated in the processes outlined in the above notes.

G. WOMT and Service decision process:

    a. DSWG provides biological information and analysis of condition of delta smelt to WOMT

    b. If WOMT agrees with the Service's recommendation, the Project Agencies implement the Service's recommendation. If WOMT does not agree with the Service's recommendation, WOMT will propose an operational response.

c. In the event of disagreement, the Project Agencies provide additional information about operational constraints to the Service. Any WOMT agency can provide additional information to the Service.

d. The Service either concurs with Project Agencies' proposed operations or notifies the Project Agencies that implementation of the Service-proposed modification of operations is necessary to adequately protect the delta smelt.

H. The Service retains the right to recommend additional actions based on real time conditions.

I. Operations of the two water export facilities will be modified in a manner similar to what is described in Action 3 of Exhibit 2. Other actions may be taken that are found to appropriately avoid or minimize entrainment effects at the water export facilities.