

# Implementation of the USFWS Biological Opinion in WY 2010

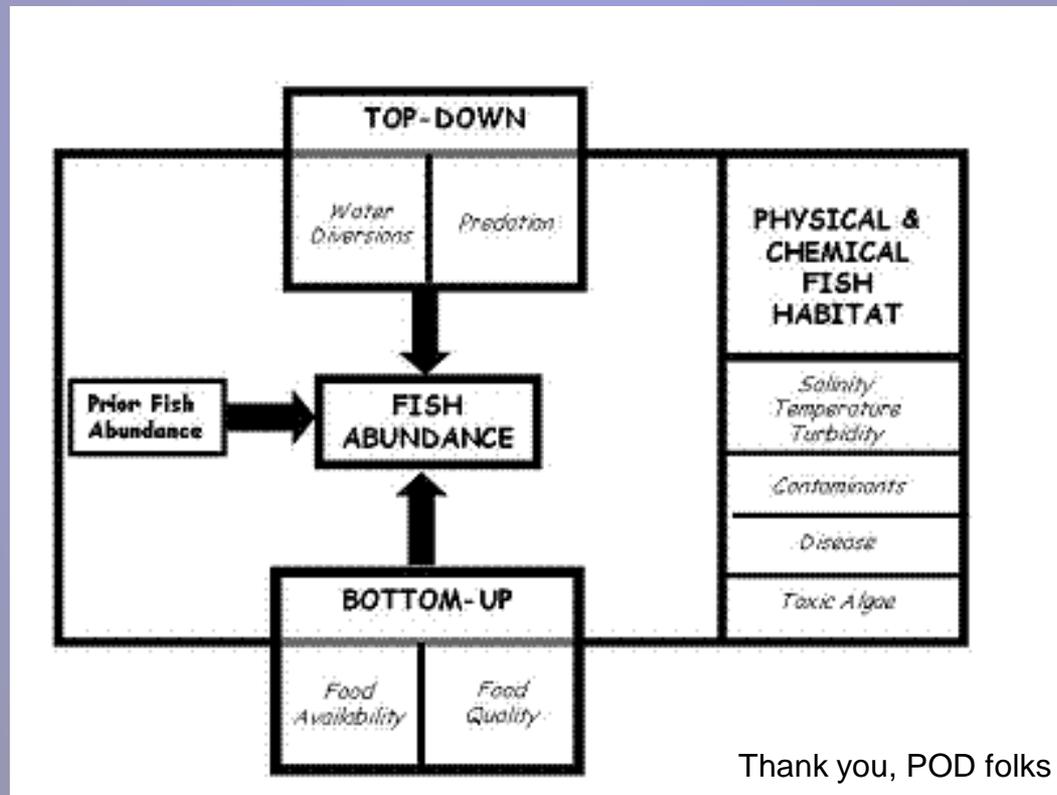
Victoria Poage, Bay-Delta Fish and Wildlife Office



“OCAP” Integrated Annual Review  
November 8-9, 2010

# Why are we “managing” delta smelt?

- Multiple, complex and interacting factors



# USFWS “OCAP” RPA

- Intent: to ensure that CVP/SWP operations do not jeopardize delta smelt or adversely modify its critical habitat
- Five Components
  1. Protection of adults
  2. Protection of larvae and juveniles
  3. Improve rearing habitat
  4. Habitat restoration
  5. Monitoring and reporting

# USFWS “OCAP” RPA

Component 1			Component 2
Action 1(a)	Action 1(b)	Action 2	Action 3
Dec 1-20			
	Dec 20-Action 2		
		Immed. Following Action 1	
			Onset of Spawning

# Component 1

- Intended to reduce entrainment and increase the suitability of spawning habitat
- Migrating and spawning delta smelt require
  - Freshwater inflow
  - Appropriate substrate
  - Low-salinity and freshwater habitats
  - Turbidity
  - Water temps below 20°C

# Action 1

- Objective: Protection during the “first flush”
- Action: limit OMR to -2000 cfs for 14 days
- Timing:
  - Dec 1-20, low entrainment risk period
  - After Dec 20, high entrainment risk period
- Criteria:
  - Turbidity
  - Salvage

# Action 2

- Objective: tailor protection to conditions following Action 1
- Action: OMR may range from -1250 to -5000 cfs
- Timing: immediately following Action 1
- Criteria: review of
  - Survey data, salvage data
  - Delta conditions
  - Modeling results, if available

# Action 2

- Guidance to the SWG
  1. Low entrainment risk scenario
    - Little or no movement; low turbidity; low salvage
    - OMR as negative as -5000 cfs
  2. High entrainment risk scenario
    - Evident movement; high turbidity; salvage
    - OMR -5000 cfs if salvage after Action 1 is zero
    - OMR -3500 cfs if salvage < during Action 1
    - OMR -2000 cfs if salvage  $\geq$  during Action 1

# Component 2

- Intended to protect larval and juvenile delta smelt
- Larvae and juveniles require:
  - Turbidity
  - Zooplankton
  - Salinity
  - Transport
  - Water temps  $< 25^{\circ}\text{C}$

# Action 3

- Objective: minimize larval entrainment and manage Delta hydrodynamics
- Action: net daily OMR flow no more negative than -5000 cfs
  - Low risk,  $\text{OMR} \geq -5000$  cfs
  - High risk,  $-1250 \geq \text{OMR} \geq -5000$
- Timing: onset of spawning
  - 3-station average temp of  $12^{\circ}\text{C}$
  - Collection of spent female in salvage or survey

# Smelt Working Group

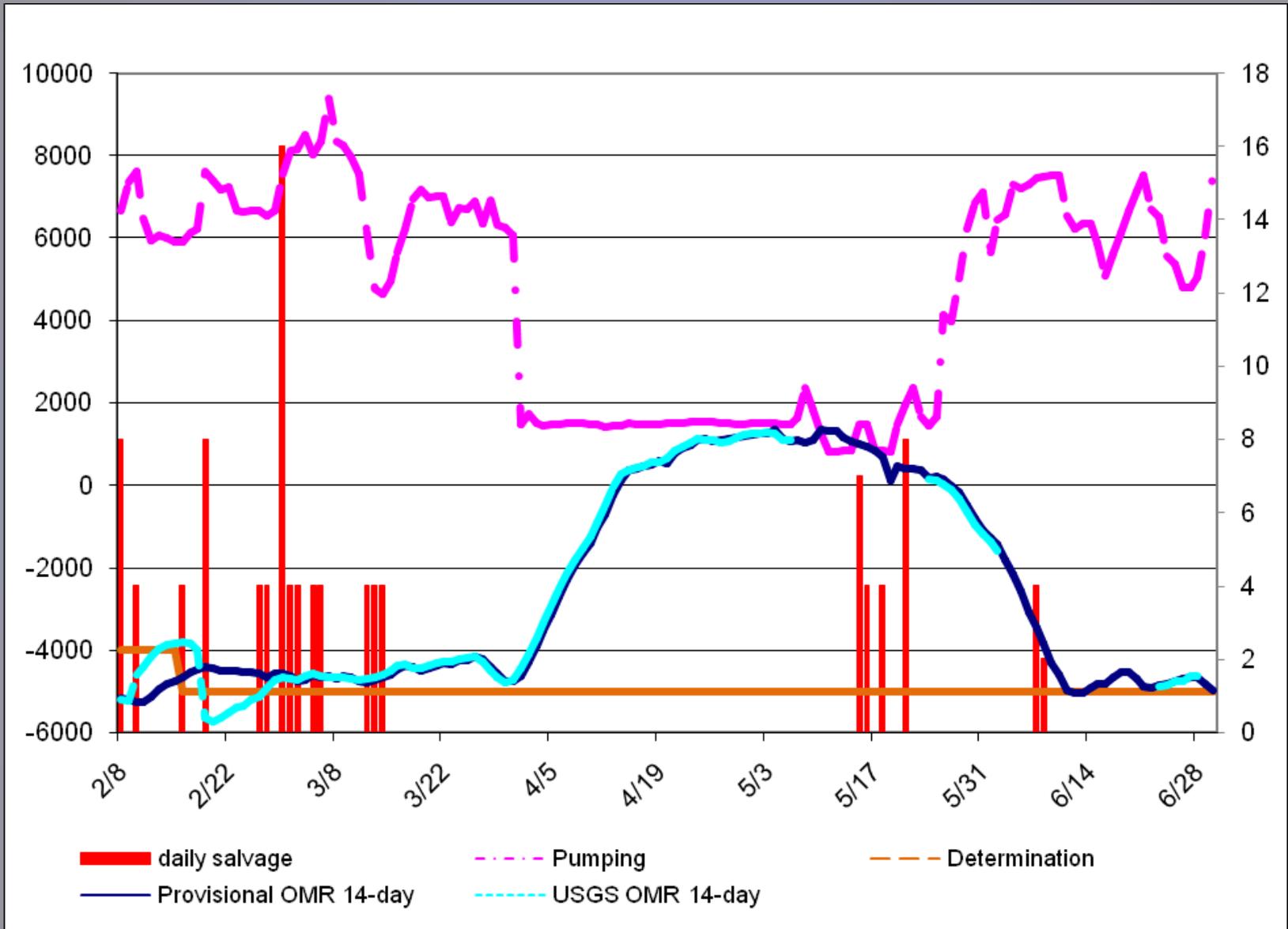
- Made up of agency experts in smelt biology, Delta ecology and project operations
- Low abundance and uncertainties indicate a need for an adaptive approach
- SWG reviews the physical, biological and technical data and provides advice to the Service
- Service makes the final determination

# Smelt Working Group

- Assesses risk of entrainment
  - Delta conditions
    - Flows, including OMR
    - Turbidity
    - Temperature
    - Location of X2
  - Forecasts of Project operations
  - Distribution of delta smelt
  - Modeled entrainment (if available)
- Recommends (or not) an action

# VERY Brief Summary of Actions Taken in WY 2010

- **February 8** – FWS began implementing RPA Action 2 as delta smelt were actively migrating
- **February 22** – FWS began implementing RPA Action 3 due to appropriate temperatures in the Delta and maturity of salvaged females
- **April 12 to May 24** – No recommendations made to the service from SWG regarding OMR flows, based on expected conditions under the VAMP experiment and NMFS RPA
- **May 24** – SWG recommended flows be no more negative than -5000 cfs
- **June 7-28** SWG recommended that OMR flow be no more negative than -5000 cfs



# Outcomes

- Incidental take of adults
  - “Concern Level” was reached on March 14 but never exceeded
- Incidental take of Juveniles
  - “Concern Levels” never reached
- Critical Habitat
  - Decreasing the reverse flows contributes to improved habitat values

# Making Progress

- Process – transparency and integration
  - February workshop
  - This formal review exercise
- Science – fill the gaps
  - Continued support of IEP/POD workplans
  - NAS Panel report

 *Near-Term Science Strategy*

# Near-Term Science Strategy

- DSM response to turbidity/first flush
  - Smelt distribution
  - Improved monitoring
- Tidally correct sampling data
- Studies of non-physical barriers
- Refine biological/ecological tools
  - Life cycle modeling
- Fall habitat evaluations

Questions?