

# ANADROMOUS FISH RESTORATION PROGRAM

## CVPIA Section 3406 (b)(1)



Anadromous  
Fish  
Restoration  
Program



# AFRP



*"Building Partnerships  
to Restore Natural Production  
in Central Valley Streams"*



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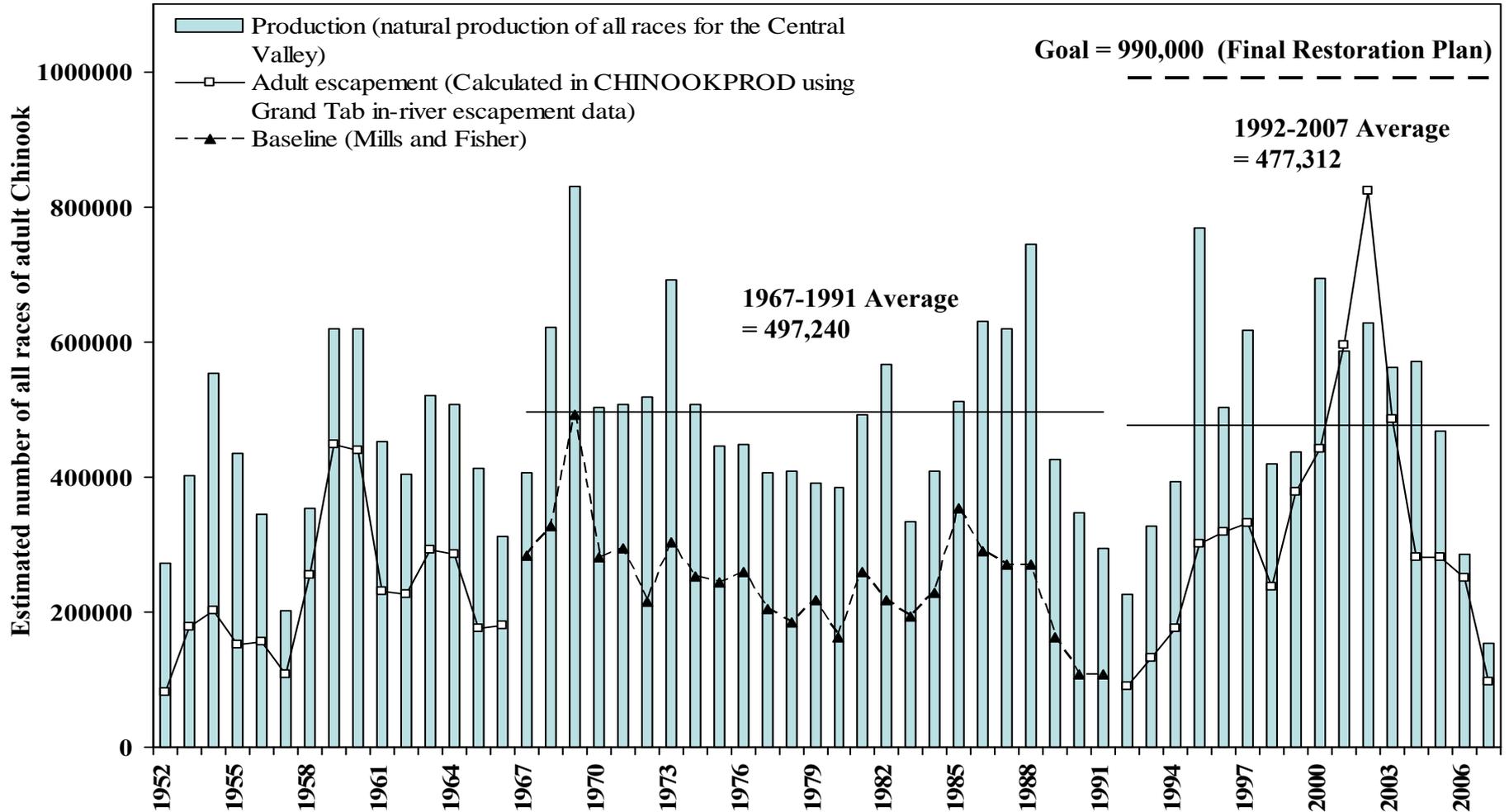
# Introduction

## (b)(1) Program Goal

- “Implement a program which makes all reasonable efforts to ensure that, by the year 2002, natural production of anadromous fish in Central Valley rivers and streams will be sustainable, on a long term basis, at levels not less than twice the average levels attained during the period of 1967-1991(Section 3406(b)(1) of the CVPIA).”



## Doubling Goal



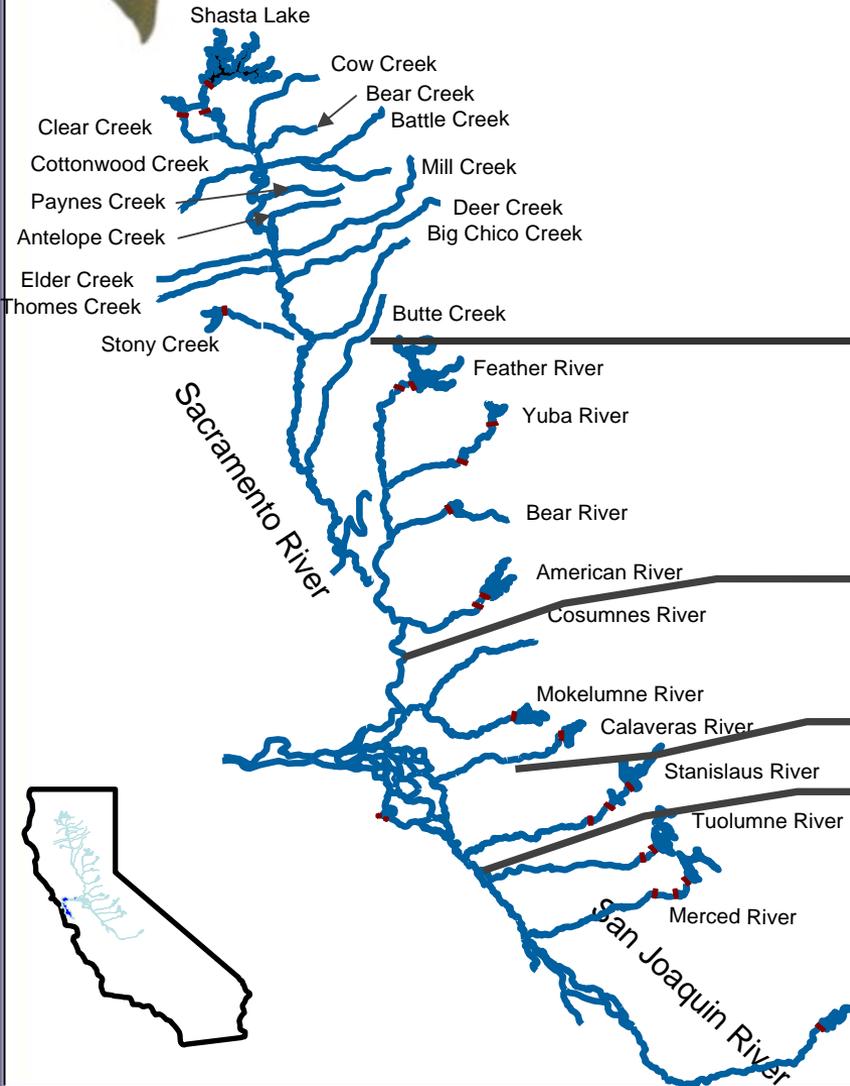


## **(b)(1) Objectives**

- Improve habitat for all life stages of anadromous fish through provisions of flows of suitable quality, quantity, and timing, and improved physical habitat.
- Improve survival rates by reducing or eliminating entrainment of juveniles at diversions.
- Improve the opportunity for adult fish to reach their spawning habitats in a timely manner.
- Collect fish population, health, and habitat data to facilitate evaluation of restoration actions.
- Integrate habitat restoration efforts with harvest and hatchery management.
- Involve partners in the implementation and evaluation of restoration actions.

# ANADROMOUS FISH RESTORATION PROGRAM

## Habitat Restoration Coordinators



### FWS

### DFG

**T. Parker/  
B. Olson**

**P. Bratcher**

**B. Campbell**

**M. Healey**

**Vice Hu**

**M. Healey**

**J. Wikert**

**P. Brantley**

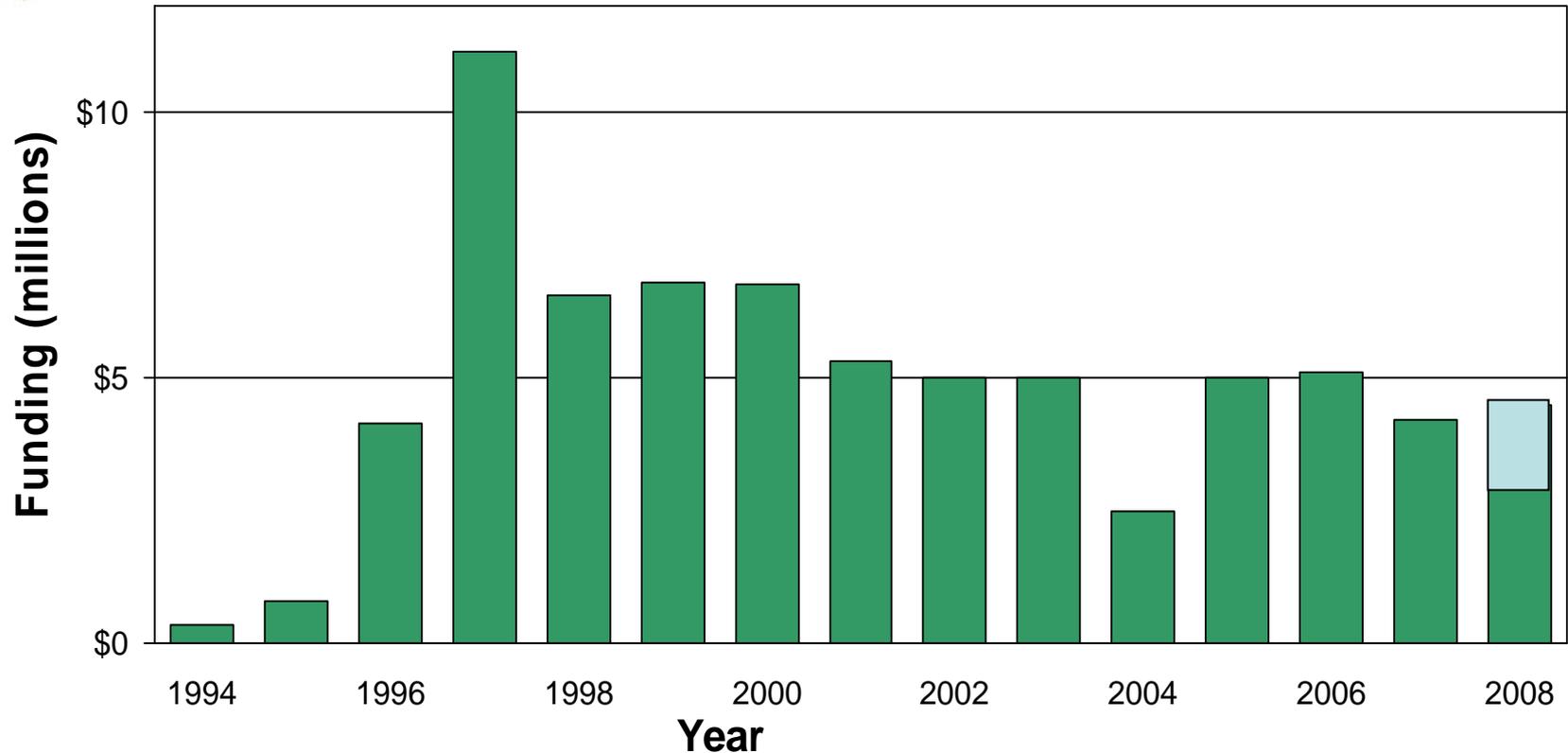
**Vice Mesick**

**P. Brantley**

**Z. Jackson**

**R. Burmester**

# PROGRAM FUNDING LEVELS



**FY08 Budget for AFRP was \$2.9 million**

# FY08 Program Accomplishments



**What are some recent project accomplishments?**

# FY08 Program Accomplishments



## Lower Butte Creek - White Mallard Dam

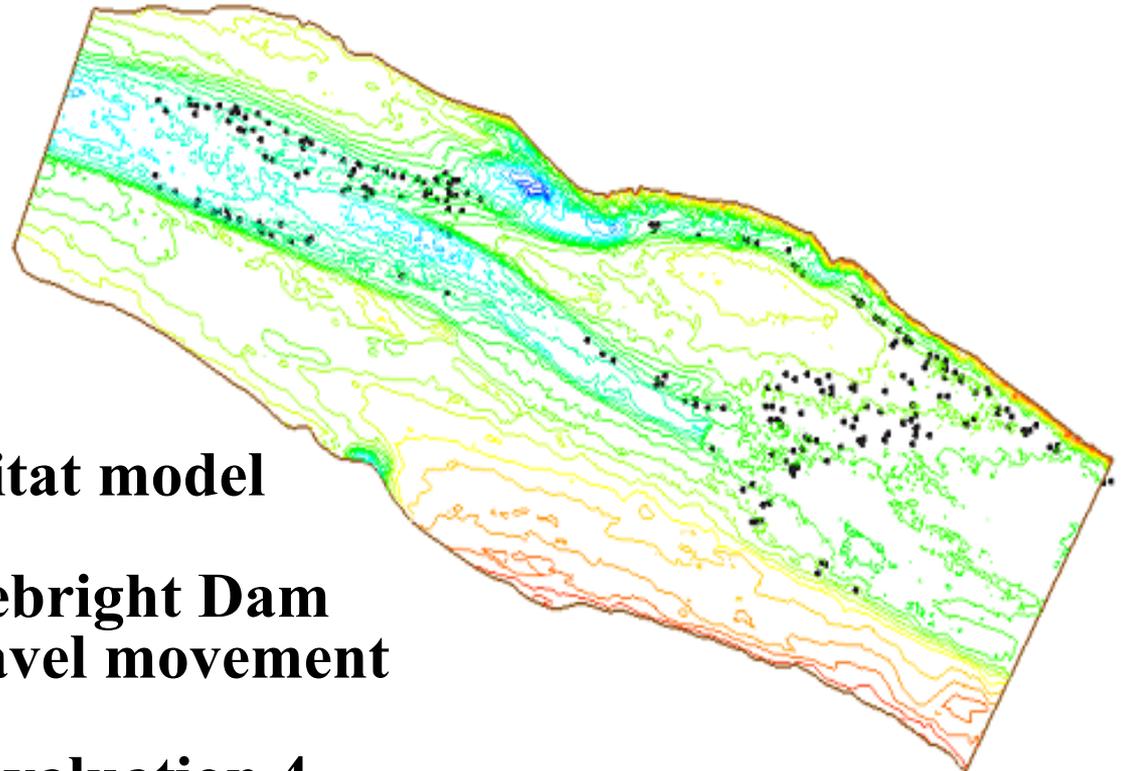
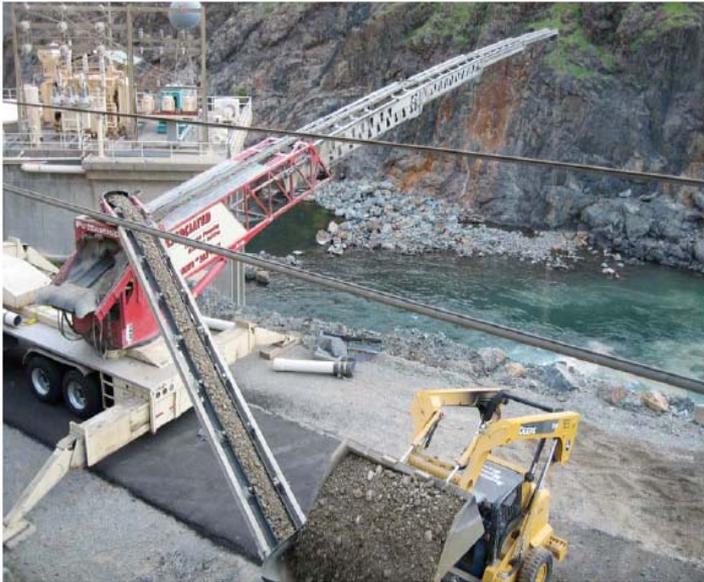
- Completed dam and fish ladder designs in 2006
- Construction completed in 2008
- Final Restoration Plan Action 18 (PART Accomplishment)



# FY08 Program Accomplishments



## Yuba River – SHIRA Habitat Model



- **Validated spawning habitat model**
- **Gravel injection at Englebright Dam (500 tons) to monitor gravel movement**
- **Final Restoration Plan Evaluation 4**



# **FY08 Program Accomplishments**

## **Spawning Gravel Projects**

### **Cosumnes River**

- **≈ 6000 tons of gravel**
- **FRP Action 6 and Evaluation 2**



### **Mokelumne River**

- **added 6,500 tons of spawning gravel**
- **added 30 tons of boulders**
- **FRP Actions 2 and 7**



# FY08 Program Accomplishments



## Tuolumne River – Bobcat Flat

- **Floodplain, riparian, and channel restoration**
- **Friends of the Tuolumne revegetated newly constructed floodway**
- **Total Project will restore 1.5 river miles and 332 acres of riparian habitat**
- **AFRP funds can potentially leverage \$3.4 million for this project**
- **FRP Action 2**





# FY08 Program Accomplishments

## Fish Passage

- **Antelope Creek Edwards Dam Fish Ladder**
- **Final Restoration Plan Action 1**

Before



After

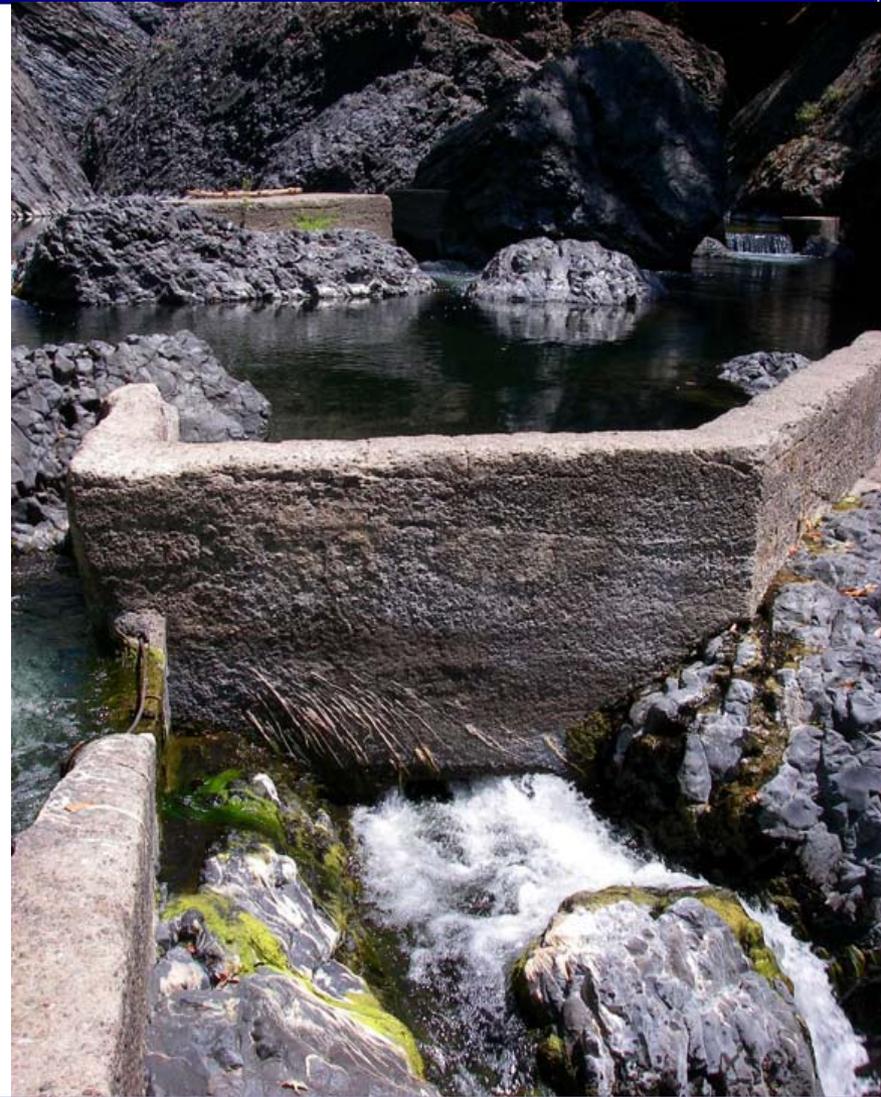


# **FY08 Program Accomplishments**



## **Fish Passage**

- **Big Chico Creek  
Iron Canyon Fish Ladder**
- **Design and Evaluation  
Completed in 2008**
- **Permitting will be completed in  
2009**
- **Provide access to 8 miles of  
quality spring-run Chinook  
salmon habitat**
- **FRP Action 2**





## Project Prioritization

### Criteria:

- Stream identified in the **Final Restoration Plan**?
- Project benefits **CV Anadromous Fish** or AFRP programmatic need?
- Project **Ready** for implementation this fiscal year?
- Will project contribute to population **Doubling Goal**?
- Is this a critical **Data Need**?
- Is this project an **Action/Evaluation** in the Final Restoration Plan?
- Will this project benefit an **ESA** listed species?
- Will this project contribute to a **Watershed Doubling** goal?
- Is this a **New Technology** that may improve efficiency or effectiveness?
- Does this project have significant **Stakeholder Support**?
- Are **Permits** ready?
- Is there **Cost Share**?
  
- RFP's are developed and advertised on Grants.gov
- Proposals are provided external technical review.

# ANADROMOUS FISH RESTORATION PROGRAM



## Projected AFRP Budget FY2009<sup>1</sup>

Tasks	Budget
Program Management	\$627,647
Program Support	\$1,679,919
Restoration Actions	\$2,164,176
Evaluation Studies, Investigations, and Modeling	\$540,000
Planning	\$308,225
Environmental Compliance	\$116,000
<b>Total</b>	<b>\$5,435,967</b>

<sup>1</sup>See the AFRP FY 2009 AWP for more detail on budget figures.



## FY2009 Activities

### Floodplain Restoration

- **Merced River**

- 3 proposed projects
- \$215,422

- **Stanislaus River**

- 2 proposed projects
- \$610,074

- **Tuolumne River**

- Bobcat Flat
- \$122,960





## FY2009 Activities

### Fish Passage Projects

- **Calaveras River (Budiselich Flashboard Dam)**
  - Design/Permitting
- **Cosumnes River (Rooney Dam)**
  - Implementation
- **Cottonwood Creek (ACID Siphon)**
  - Design/Permitting
- **Antelope Creek (Tehama Wildlife Area Road Crossing)**
  - Implementation





# AFRP Monitoring

## FY08 Monitoring Accomplishments

### (b)(1) Fish Restoration





# **(b)(1) Monitoring**

## **Habitat Restoration Monitoring**

- project specific
- evaluates restoration actions success (i.e. redd counts, snorkel surveys, environmental parameters, etc.)

## **Demonstration Projects**

- showcases new technologies or methodology through evaluations studies
- short term (1 to 3 years)
- data and reports are posted in the AFRP website and shared with CAMP and other stakeholders



# (b)(1) Monitoring

## Monitoring Equipment

- AFRP attempts to cost share operational costs of equipment or turn over monitoring to other agencies or groups via MOU or Letter of Agreements. We then utilize monitoring data to assist with program evaluation and identification of future restoration activity needs.

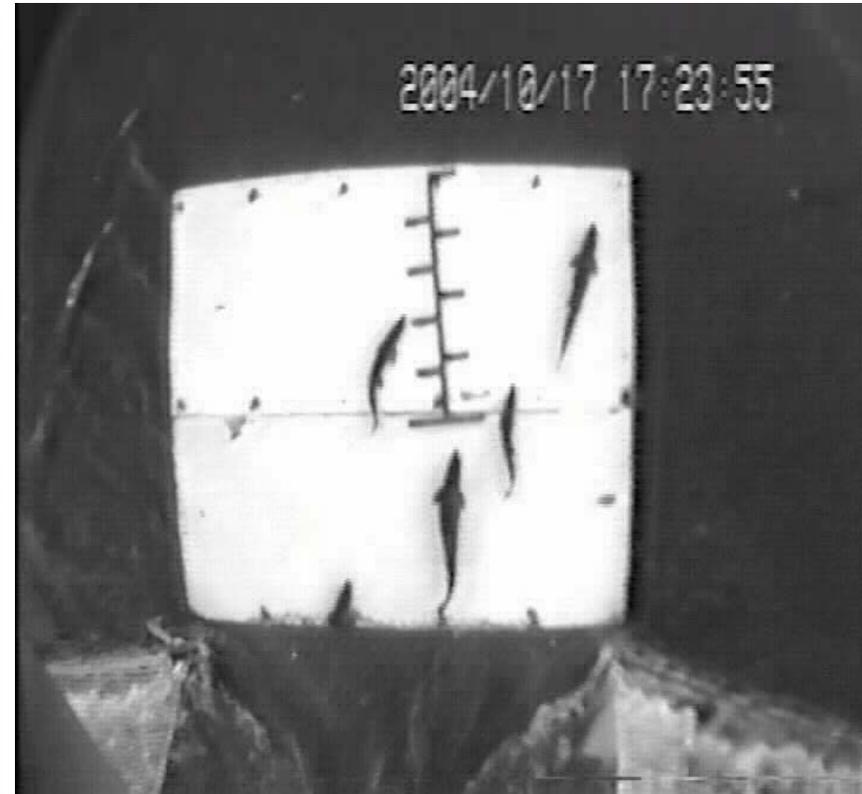




# (b)(1) Monitoring

## Fish Counting Video Weir

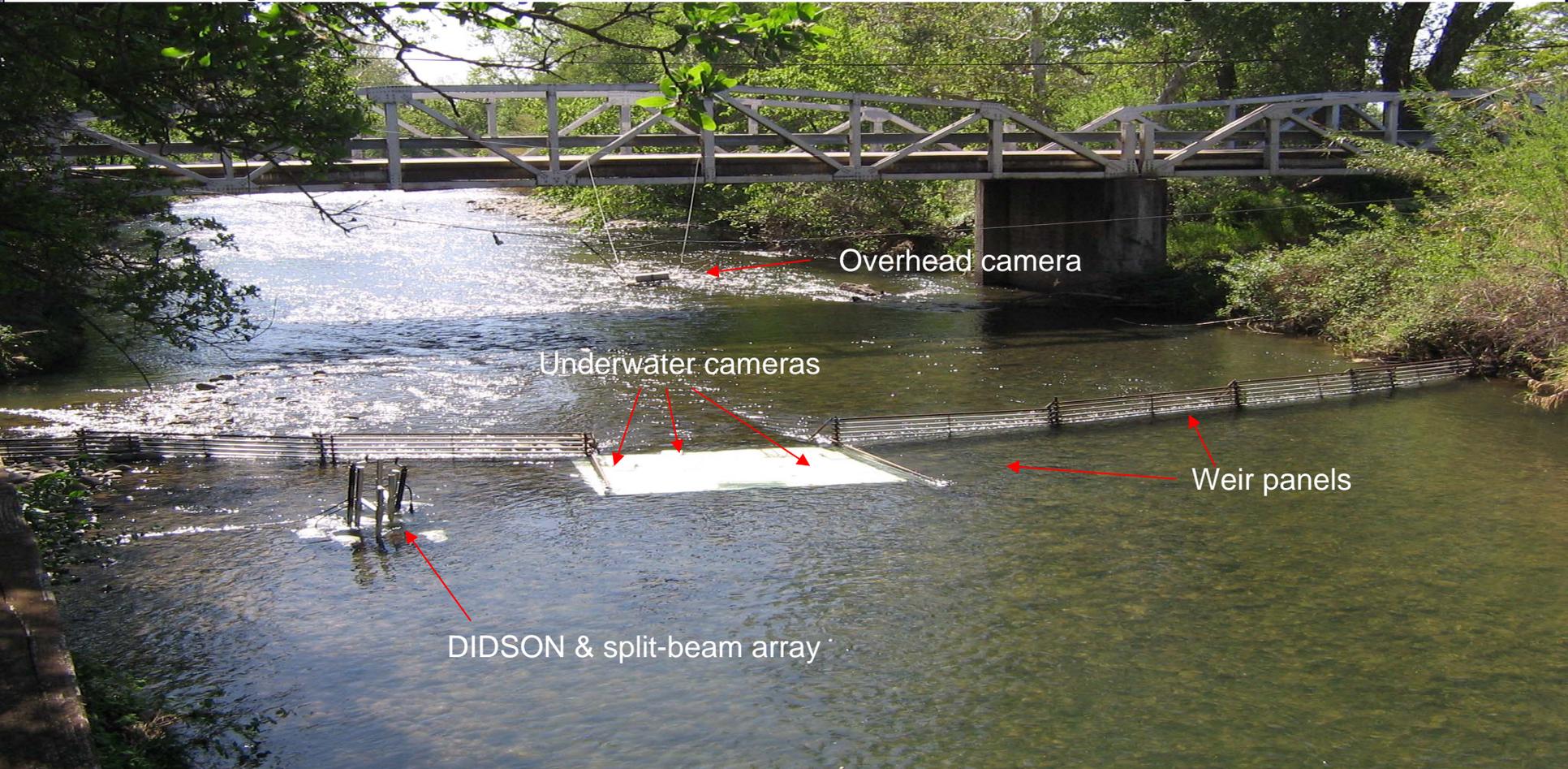
- Acquire accurate escapement estimates of adult fall-run Chinook salmon
- To determine if video recording could eventually be used as an alternative to the carcass survey.





# (b)(1) Monitoring

## Hydroacoustics DIDSON & DTx Systems



Overhead camera

Underwater cameras

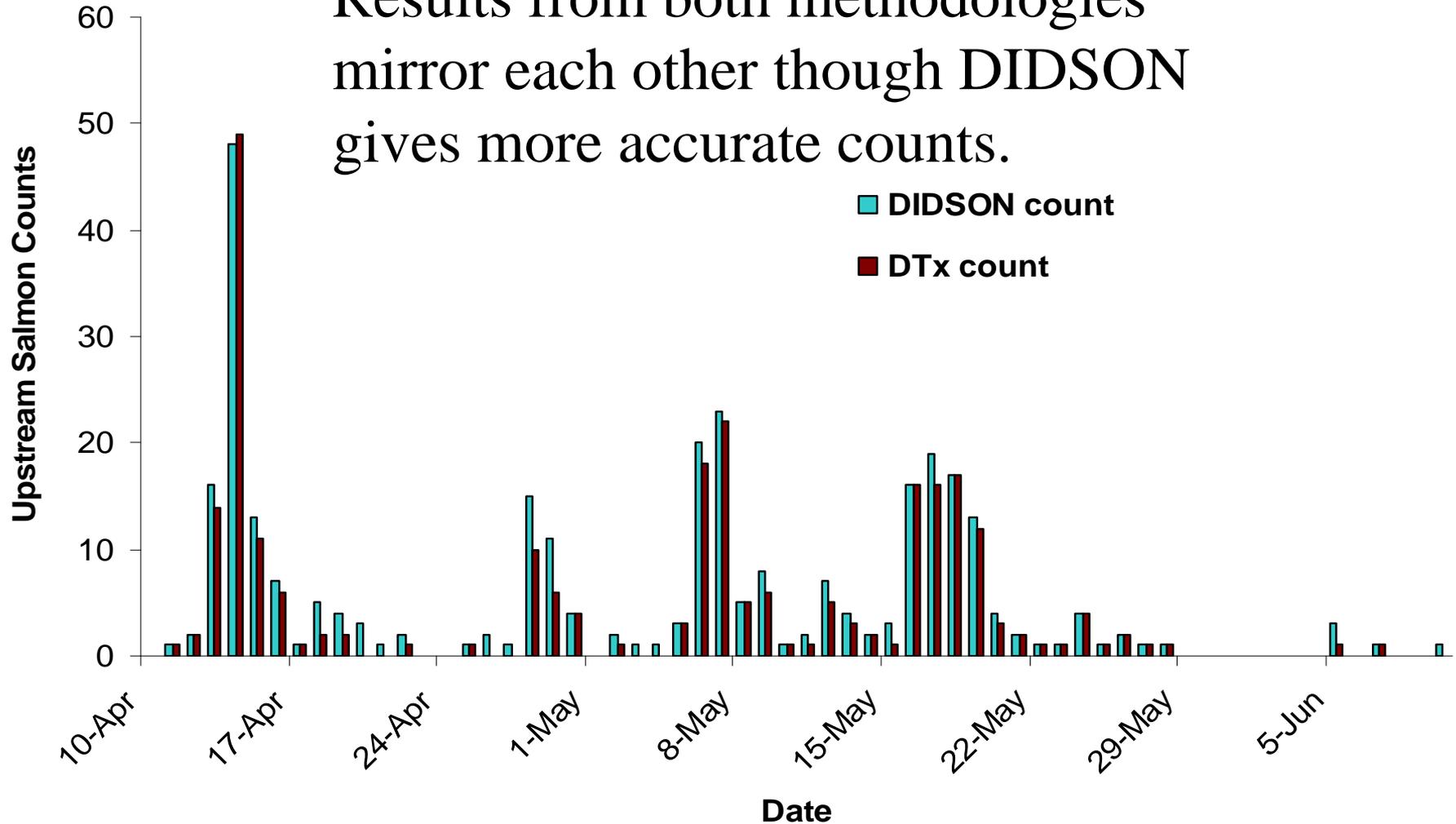
Weir panels

DIDSON & split-beam array



## (b)(1) Monitoring Results

Results from both methodologies mirror each other though DIDSON gives more accurate counts.





## **(b)(1) Monitoring**

### **VAKI Riverwatcher Fish Counting System**

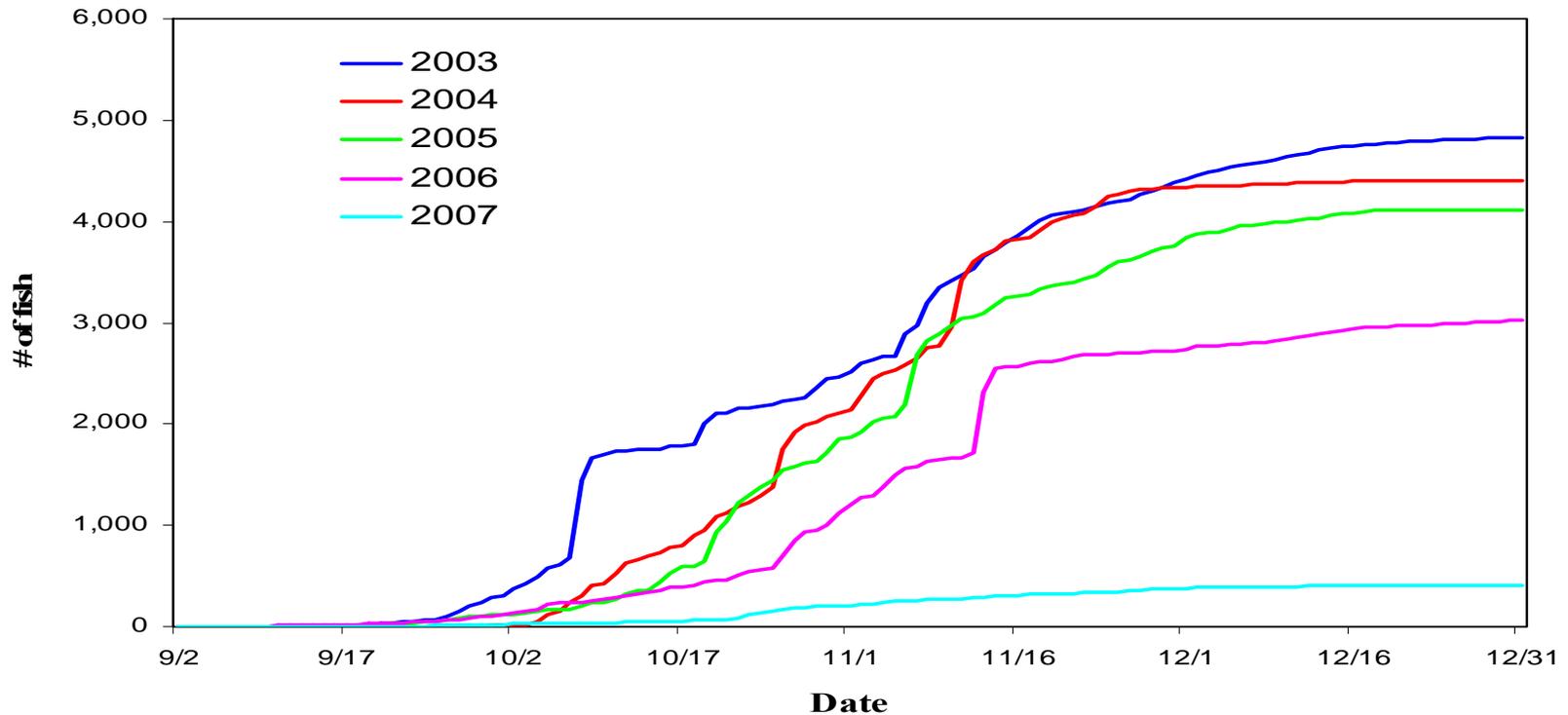
- **Currently have two AFRP VAKI Fish Counting Systems being operated by CDFG at the Daguerre Point Dam in the Yuba River and a fish counting weir with a VAKI system in the Stanislaus River operated by Tri-Dam.**





# (b)(1) Monitoring Results

## Cumulative Chinook Passage at the Stanislaus River Weir





# (b)(1) Monitoring

## Juvenile Out-migration Monitoring





# (b)(1) Monitoring Results

## Hatfield RST – Juvenile Outmigration

Mar 3 – Jun 6, 2008

Juvenile Chinook salmon estimated abundance:  
4,273 ( SE = 2,243) juvenile Chinook





## FY09 (b)(1) Monitoring Projects

- Identify sturgeon spawning habitat and use in the Feather and Yuba rivers with sonic telemetry (Evaluation 1.5.1).
- Quantify adult Chinook salmon escapement from the Bear, Cottonwood, and Cow creeks with a fish counting video weir (Evaluation 1.5.2).

# Contact Information



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GREEN STURGEON (Adult and Juvenile)



WHITE STURGEON (Adult and Juvenile)

