

**Central Valley Salmonid Satellite Project Work Team:
Juvenile Monitoring**

Final Meeting Notes from May 17, 2007
Yolo Bypass Wildlife Area 10:30

Participants: Bill Poytress (Chair; USFWS), Erin Chappell (DWR), Pat Brandes (USFWS), Eric Volkmann (USFWS), Dennis Blakeman (CDFG), Robert Vinck (CDFG), Paul Cadrett (USFWS), Ken Newman (USFWS) and JD Wikert (USFWS/AFRP), Aric Lester (DWR), Tom Boullion (DWR) John Williams, and Andrea Fuller (FishBio).

I. Introductions and Announcements:

Welcome newest participants Ken Newman (USFWS) of the Stockton Fish and Wildlife Office and Tom Boullion (DWR) Red Bluff office.

NOAA Fisheries is having a Salmon and Steelhead Recovery Meeting May 22nd in Sacramento (Moss Federal Building) and on May 24th in Redding (Holliday Inn). See announcement: http://calwater.ca.gov/Fisheries/Workshops/Reclamation_Workshops_5-22-24-07.pdf Workshop is free but registration is required.

II. Group Discussion: *Juvenile Monitoring Updates*

B. Poytress: A three year CalFed/DFG Directed Action proposal to continue monitoring at RBDD was ratified in late February. The screw trap project will continue to sample year round through June 30, 2009. Catch has been dropping and the RBDD gates were lowered for an emergency closure for 6 days (due to water demands that could not be met through pumping alone), raised for 5 days, and lowered for the season on May 15th. The largest juvenile sturgeon captured in May of 10+ years of sampling (49 mm; assumed to be green) was captured during the 5 day gates open period.

R. Vincik: Catch at Knight's Landing screw traps has been winding down with adclips from CNFH fall production release captured intermittently. Traps will be pulled off the river for the season June 30, 2007 or when a catch of 0.00 is attained for an entire week.

JD Wikert: CAMP funding is currently being used to operate a screw trap on the Merced River (RM 2.0); few fish have been captured. On the Stanislaus, (aka the Caswell site), another trap is being operated whereby fish captured in the trap are being coded wire tagged. Catch has been low even with the addition of a third screw trap. Results thus far include: 800 fish tagged with 1 recapture at the Delta pumping facilities and 1 recaptured at the Chipps Island Trawl site. The purpose of the CWT study is to obtain information on fry and smolt survival under differing annual flow conditions. There have been some disease issues this year which may affect the study (*columnaris*).

E. Chappell: VAMP project is under way with combined State and Federal pumping at 1,500 cfs proposed until 5/22/07 for the protection of San Joaquin fall-run Chinook. The

Delta Smelt Working Group may recommend keeping exports at the same level after VAMP ends to protect larval smelt. Some larval smelt have been detected recently at the Delta Fish Facilities.

E. Volkmann: FWS is conducting 24hr/day trawling effort at Sacramento Site. Many tagged fish are being captured, otherwise catch is diminishing. Juvenile fish rearing in Liberty Island study in cooperation with Wildlands Inc. to continue.

A. Fuller: A screw trap on the Tuolumne at Waterford is in operation; catch is low. A second Tuolumne River trap at Grayson has captured a season total of 27 fish. A trap on the Stanislaus at Oakdale is in operation with catch of 100-200 fish/day. A trap on the Calaveras @ Shelton Rd. is capturing relatively large Chinook and Rainbow trout.

A. Lester: A study to perform juvenile fish monitoring between GCID and Knight's Landing is being worked on with Fish and Game.

P. Brandes: On May 3rd, 4th, 10th and 11th, 492 HTI acoustic tagged Merced River hatchery fall Chinook smolts (105-125mm) were released in various locations on the San Joaquin. Fish are expected to be detected via 12 receivers positioned throughout the south Delta with flows targeted at 3,200 cfs on the San Joaquin during VAMP. Some receivers experienced interference from USGS equipment ("boomers") at the onset, but the issues were resolved. All control fish held survived with dummy implants 48 hours after experimental fish were released indicating excellent survival of implanted fish. Results from the study will be presented at the 2007 AFS National Conference in San Francisco.

III. Modify/Adopt agenda – Agenda was altered by the chair by moving project updates to follow Introductions and Announcements.

IV. Modify/Adopt draft meeting notes from 2/21/07 - The previous meeting notes were adopted with edits turned in by Pat Brandes and a clarification from Robert Vincik. The final notes will be available on the IEP PWT website:

http://www.iep.ca.gov/central_valley_salmon/

V. Featured Discussion Topic: Review of Chapter 15 "Monitoring" of John Williams' CALFED white paper, *Central Valley Salmon: A Perspective on Chinook and Steelhead in the Central Valley of California*

John Williams began discussing the monitoring chapter by noting that he began working on monitoring issues as a result of litigation on the American River. He noted that monitoring gets experimental results and should evaluate the condition of organisms as well as the populations and habitats used. He pointed out a useful guide to monitoring emphasizing concepts and applications, (even though it involves coastal environments) titled, "*Detecting Ecological Impacts*" by Russell Schmidt and Craig Osenberg. Overall, John believes that natural fish populations should be emphasized in research and monitoring over hatchery fish strains.

John noted that monitoring programs should address specific questions to answer and that these questions need to be incorporated when addressing management questions that typically are the impetus for monitoring (i.e. conduct research in addition to monitoring for management purposes).

John notes that biologists should be using professional graphics software such as SigmaPlot or Grapher as opposed to Excel. Additionally, people need to take advantage of computers to perform advanced procedures such as simulations or modeling and to employ estimators such as that used in Darr 2.0 (Bjorkstedt 2005) to calculate confidence intervals around point estimates. Typically, many groups are using calculator based statistics instead of employing superior computer based methods. **K. Newman** added that he is planning on holding an “R” workshop at the Stockton office in June. Also, he has conducted a couple of workshops on the use of Stats software at the Bay Delta office in recent months. Ken noted that true graphics software can often display data in a more meaningful way, for example density plots can be created as a better alternative to histograms.

John pointed out that monitoring projects should be evaluated using simulations as this will show the true variability of data, can indicate how best to analyze the data and can be used to figure out appropriate samples sizes for various data. Additionally, monitoring should be complemented by descriptive mathematical modeling.

John emphasized that monitoring programs should budget in the expense of sampling unusual events as these events can provide significant data. The question was raised about how much of project budgets are to conduct analysis and most figured it was very little. This is unfortunate but a consequence of the competition to obtain funds to do even the most basic of operations. More emphasis should be placed on obtaining funds or illuminating the true costs of the analysis portion of the budget when writing proposals. **K. Newman** also mentioned the use of the FWS STEP/SCEP programs to hire students to perform specific analysis related projects.

Finally, John pointed out that sampling bias and uncertainty need to be taken into account and described (i.e. show variability, derive confidence intervals). He notes that data needs to be utilized fully to get the most out of data collected. Also, monitoring programs need to be assessed periodically (Botkin et al 2000).

References:

Bjorkstedt, Eric P. 2005. DARR 2.0: updated software for estimating abundance from stratified mark-recapture data. NOAA Technical Memorandum, NMFS-SWFSC-368.

Botkin, DB, D. L. Peterson, Calhoun, JM. 2000. The scientific basis for validation monitoring of salmon for conservation and restoration plans. Forks, Washington: University of Washington, Olympic Natural Resources Center. Olympic Natural Resources Technical Report.

VI. Next Meeting Information: Tentatively set for August 22, 2007, 10:30 to 1:30 at YBWA. The topic, under development, will be appropriate data to collect on fish condition while juvenile monitoring. The hope is to have guest speakers such as Bruce MacFarlane (NOAA) and/or Scott Foote (USFWS-CNFHO) to speak about methods and utility of condition data that could be collected during juvenile monitoring activities.