

Battle Creek Watershed: November 2009 Update
U.S. Fish & Wildlife Service Activities

RED BLUFF FISH & WILDLIFE OFFICE **JIM SMITH, PROJECT LEADER**

Hatchery Evaluation Program: Kevin Niemela

Fish Marking and Tagging

Fall Chinook: The California Department of Fish and Game (DFG), U.S. Fish and Wildlife Service (FWS), and the Pacific States Marine Fisheries Commission **completed the third year of the Constant Fractional Marking program**, whereby 25% of the production releases of fall-run Chinook salmon from Central Valley hatcheries will be marked with an adipose fin clip and coded-wire tagged.

Late-fall Chinook: Marking and tagging all juvenile late-fall Chinook at the Coleman NFH was **completed in July**. This work was conducted using the automated marking and tagging trailers.

Steelhead: Marking (adipose fin-clip) of all juvenile steelhead at the Coleman NFH was **completed in July**. This work was conducted using the automated marking and tagging trailers.

Battle Creek Video Monitoring

Monitoring of fall Chinook in lower Battle Creek at the video weir fish counting station (stream mile 2) **began on August 19, 2009**. This project is a cooperative effort of DFG and the FWS. Data generated from this project are used to estimate escapement to Battle Creek and to guide hatchery broodstock collection activities.

Sacramento River Winter Chinook Carcass Survey

DFG and FWS have **completed** the 2009 winter Chinook carcass survey. The survey was conducted daily from May 4 to August 28. The cooperating agencies are currently using information gathered on this project to estimate the abundance of winter Chinook spawners.

Anadromous Fish Restoration Program:

Tricia Parker

Exclusion Fencing:

Funding provided to BLM in 2008 was used to fence 19,000 lineal feet of riparian area near lower Battle Creek.

Headgate on Irrigation Diversion:

Funds have been provided to the DFG screenshop to complete this project on the Orwick Diversion. Construction and installation of the new headgate occurred in June 2008. Monitoring of flows and diversion rates at the site has been performed by DFG.

Battle Creek Monitoring

Jess Newton/Matt Brown

We conducted a radio telemetry study to track salmon passage through the new Coleman National Fish Hatchery fish ladder. We captured adult late-fall Chinook salmon after they entered CNFH through the new fish ladder. We then implanted radio transmitters into the salmon and released them about a quarter mile downstream of the fish ladder and tracked their movements as they ascended the fish ladder a second time. A total of 61 Chinook were tracked through the ladder during February-April, 2009. Once the salmon arrived in the vicinity of the barrier weir, the median time required to locate and enter the fish ladder was 2.75 hrs (average: 13.75 hrs). Once salmon entered the fish ladder, the median time required to ascend the first

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section and arrive in the middle ladder was 9 minutes (average: 14 min.). Zero tagged salmon circumvented the fish ladder by jumping the barrier weir. Results of year one of this two-year study indicate that late-fall Chinook salmon quickly located and ascended the new fish ladder.

This year, we are evaluating video motion detection technology for monitoring passage. Preliminary results indicate that motion detection is capturing nearly 100% of passage.

Preliminary data

Adult fish: upstream passage	unclipped			clipped		
	'09	'08	'07	'09	'08	'07
Chinook (potential spring-run)	195	105	291	8	5	
steelhead/rainbow trout	133	120	217	20	2	

Juvenile Production Estimates (upstream of Coleman NFH) Nov 12, 2008 – June 30, 2009	
BY 08 Spring Chinook	16,000
BY 09 late fall Chinook	1,000
BY 09 steelhead/rainbow trout	2,100

Only two snorkel surveys were conducted in 2009 due to the suspension of California bond-funded-grants. We counted a total of 88 spring Chinook redds.

We conducted seven fish rescues (May-August 2009) during construction of the Coleman NFH Intake Improvement Project. Construction activities appeared to have minimal impact on salmonids because only 15 rainbow trout/steelhead and zero Chinook salmon were captured/rescued. Other species that were rescued included California roach, Sacramento sucker, Sacramento pikeminnow, hardhead, western brook lamprey, Pacific lamprey, riffle sculpin, threespine stickleback, tule perch, green sunfish, and smallmouth bass.

Annual monitoring reports can be downloaded at <http://www.fws.gov/redbluff/cvpia.html>

COLEMAN NAT'L FISH HATCHERY COMPLEX SCOTT HAMELBERG, PROJECT LDR

Livingston Stone NFH (winter Chinook)

John Rueth, Assistant Hatchery Manager

For the 2009 season, adult fish were trapped at Keswick Dam between March and June. A total of 120 adults were retained for the production program. Prespawn mortality was very low at 3.33 % (i.e. 4 fish). A total of 324,000 eggs were taken with an eye-up of 93.29%. The fry were put into tanks in early August. During the 2008 season, 101 adult winter run were retained which produced approx 150,000 juveniles. The juveniles were tagged in mid December, then released as pre-smolts into the mainstem Sacramento River in late January.

CNFH Intake Improvements

Co-lead: Hank Harrington, USBR

Phase I: **Construction** to screen intake #3, expand intake #1 and install new pipeline between intake #1 and #3 **is completed**. Phase II, the screening/modification of Intake #2, is not funded at this time.