



## Meeting Summary

Fisheries Management Technical Feedback Group Meeting  
Thursday, April 17, 2014

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**CSU Stanislaus**  
**1 University Circle, Turlock, CA 95382**  
**Room MSR 130**  
**DRAFT: 2014.05.22**

### Attendees

Paul Adelizi, California Department of Fish and Wildlife  
Matt Bigelow, California Department of Fish and Wildlife  
Steve Blumenshire, CSU Fresno  
Matt Cover, CSU Stanislaus  
Jason Faridi, Fishbio  
Elif Fehm-Sullivan, National Marine Fisheries Service  
Carlos Garza, National Marine Fisheries Service  
Ben Gettleman, Kearns & West  
Gerald Hatler, California Department of Fish and Wildlife (phone)

Tom Johnson, SJRRP Restoration Administrator (phone)  
Bill Luce, Friant Water Authority  
Palmer McCoy, Henry Miller Reclamation District  
Tracy McReynolds, California Department of Fish and Wildlife (phone)  
Joe Merz, Cramer Fish Sciences (phone)  
Don Portz, U.S. Bureau of Reclamation  
Rhonda Reed, National Marine Fisheries Service (phone)  
Janet Thomson, Kearns & West

### Introductions, Meeting Purpose, Agenda Review

Ben Gettleman, facilitator, reviewed the meeting objectives, which included updates on spring-run Chinook salmon (spring-run) reintroduction rules, results from recent fisheries-related studies, and information about upcoming fisheries-related studies.

### Update on Spring-run Reintroduction Rules and Permits

Elif Fehm-Sullivan, National Marine Fisheries Service (NMFS), provided an update on the status of the experimental population rule under Endangered Species Act (ESA) section 10(j) and the associated ESA section 10(a)(1)(A) permit for collecting and propagating fish. Ms. Fehm-Sullivan noted that the San Joaquin River Restoration Settlement requires reintroduction of spring-run and fall-run Chinook salmon, and since the spring-run Chinook population is threatened, the agencies require designation of an experimental population. She added that NMFS conducted initial scoping for the reintroduction rule in 2010, completed the proposed rule in January 2013, and implemented the final rule in December 2013 which went into effect in January 2014.

Additional information from Ms. Fehm-Sullivan's presentation included:

- The rule contains two parts, one designates the geographic boundary (from Friant Dam to the San Joaquin and Merced River confluence, including accessible waterways and tributaries and includes the Kings River when it has connectivity with the San Joaquin River). The second part provides for take of the non-experimental population (NEP) of salmon.
- Take of salmon is prohibited by illegal activities and by intentional take of reintroduced spring-run Chinook. It is permitted in cases of unintentional or incidental take due to lawful activities not directed towards salmon, as well as fishery management actions by other governmental entities and permitted scientific research. There is a special take exemption for the “pink area” (north of the NEP area) for those diverting or receiving water in that area; this includes the state and federal pumps in the bay delta. NMFS develops a memo, released annually by January 15<sup>th</sup>, which provides a method for deducting the proportion of experimental fish from any of the operational triggers at the pumps.
- The spring-run Chinook will come from other spring-run populations that exist currently, have a phased multi-stock that provides genetic diversity, start with fish from the Feather River Fish Hatchery (eggs or juveniles, which are offspring of hatchery-hatchery crosses or hatchery-wild crosses), and use the broodstock program to amplify small collections of stocks.
- NMFS received a release permit in March 2014, which enables the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDWF) to collect 54,000 juveniles or 80,000 eggs from the Feather River Fish Hatchery for direct translocation to the San Joaquin River. The eggs will be placed into streamside incubators to hatch and then, when at the appropriate size, tagged and placed into net pens in the river. Juveniles from the Feather River Fish Hatchery will be acclimated and imprinted through placement in Reach 1 below Friant Dam for 3-7 days, then moved to the furthest area where there is connectivity and held for another 3-7 days.
- NMFS aims to understand whether the population will become established with relaxed protections, whether the restoration actions will be sufficient, and whether the resulting fish will be “real” spring-run Chinook according to both phenotype and genotype.

Questions:

Q: Is the confluence with the Merced River the farthest upstream reach in the Merced?

A: If there is connectivity further upstream, fish will be placed further upstream. The permits require that fish be placed in environments with appropriate water temperatures and general water conditions so that the fish can swim back to the ocean.

Q: Would it be possible to move some tagged fish downriver to determine whether that extra spatial boost enables greater return?

A: That is a good question about the long-term success of the program. NMFS is interested in discussing that idea further.

NMFS will continue to discuss different ways to get the desired genetic variety of the fish and will report back to this group on that issue.

## **Results from Recent Fisheries-related Studies**

### Adult San Joaquin River Chinook Salmon Trap and Haul

Don Portz, Bureau of Reclamation, provided an update on the adult Chinook salmon trap and haul study. In the fall, Reclamation set a number of fyke nets off the main stem above Hills Ferry Barrier where the fish might go – including upstream of the Hills Ferry Barrier, half a mile above the Hills Ferry Barrier, Mud Slough, Salt Slough and Wolfsen Road, and the San Joaquin River at the confluence of Bear Creek. Additional dip netting being performed by the Calif. Department of Fish & Wildlife is taking place at the irrigation canals at Delta, Midway, Herefore, Deepwell, Britto Road, and Cozzi Avenue.

Don noted that Reclamation caught 24 fish in October, 203 in November, and 140 in December. The fish were 33.5 percent female. Most of the fish were caught at the Hills Ferry Barrier or Midway Road. Don added that 67 redds were found upstream of Highway 99 and 5 redds were found downstream of Highway 99.

#### Juvenile San Joaquin River Chinook Salmon Trap and Haul

Don Portz noted that in March 2014 the juveniles appeared in the river. Reclamation trapped them via weirs and rotary screw traps and nets to capture some of the fish as they moved downstream. Reclamation had four trapping locations: a rotary screw trap at Ledger Island Bridge; a large weir at Highway 41; a weir at Scout Island; and nets at Donnie Bridge. As of the day before this meeting, Reclamation caught 1,511 juveniles at Reach 1, transported 1,169, and released 1,132 at Reach 5 after holding them for 24 hours in net pens. There were some deaths due to transport and net pens, and some fish were sacrificed for genetic and stomach content analysis.

#### Questions:

Q: What genetic information is being collected?

A: Reclamation samples genetic information from one fish at each site. For most fish, we know the parentage because we have tissue samples from the adults. Steve Blumenshire from CSU Fresno is acquiring the fish heads to determine how old the fish are by otolith analysis. This will help us to understand how growth rates vary, and potentially what condition factors lead to that variability. Steve is also sampling livers from the fish in order to determine recent eating history.

#### Captive Rearing Study Update

Paul Adelizi, CDFW, provided an update on the development of the conservation hatchery to breed Central Valley spring-run Chinook salmon. This program raises a small number of eggs or juveniles to adults and spawns them to multiply the number of fish available for restoration. CDFW started with a pilot-scale facility to test equipment, develop protocols, and learn more about the fish. The interim facility (SCARF) is located at the San Joaquin hatchery in Friant, just below the Friant Dam. In 2010, 55 pairs of fall-run Chinook were collected from the Merced River and spawned. CDFW used multiple pairs of fish to develop the founding population. CDFW sent the resulting eggs to Silverado Fisheries Base for quarantine, and in March 2011, the juveniles were transported to the interim SCARF.

The juveniles each received a passive integrated transponder (PIT) tag and received genetic testing. A common problem for captive rearing – early maturation of the fish – was encountered. Fifteen to 30 percent of these fish were precocious (maturing at age one). The sexes were separated to encourage the male salmon to grow slowly during critical periods to avoid early maturation. Female salmon were encouraged to grow large in order to produce large, plentiful eggs and healthy

offspring. These efforts appear to be paying off. In 2010, the brood year male fish were 15 grams; in 2012, they had slowed down to 9 grams; in 2013, the fish were only 3 grams. In 2010, the female fish were 326 grams at 19 months; in 2012, they were 313 grams.

Questions:

Q: When in the process can you determine that the males are precocious?

A: We get tags in at 6-8 months, and it becomes obvious a month or two before the spawning period that the fish are starting to develop.

Adult Fall-Run Chinook

Paul Adelizi noted that CDFW used ultrasound to look for gametes approximately a month prior to spawning. CDFW found 74 spawned females, but only had 10 males due to precocious maturation. CDFW applied a gonadotropin releasing hormone analog to increase the sperm and milt production of the males so that they could successfully spawn.

Paul noted that CDFW is pleased with the deep matrix incubators which provide for streamside spawning. They are filled with gravel, eggs are added, and the hatched fish move through the gravel and swim out on their own to the river. CDFW is continuing to explore conservation hatchery techniques so that the fish can be as successful as possible in the wild.

Chinook Salmon Spawning and Rearing

Matt Bigelow, CDFW, provided an update on spawning and rearing efforts. He stated that CDFW retrieves the fish from the fyke nets and canals and spawns the fish in crates between 7:30 - 9 p.m. CDFW then mixes the eggs with iodine and salt to clean everything; spawning one fish takes 45 minutes.

Matt noted that 72,181 total eggs spawned, 48,212 eggs were placed in the deep matrix incubators, and 38,370 juveniles were retrieved from the incubators. That averages out to 6,097 eggs per female. Matt stated that there were initially good water temperatures and good survival rates, but as it became warmer the survival rates dipped down to 60 percent. This was the major challenge.

Matt added that the cage pens were expanded this year; previous capacity was 24,000 fish and this year it was increased to 159,000 fish. This made fish movement much easier, enabled less handling, and therefore resulted in lower mortality.

**Upcoming Fisheries-related Studies/Plans**

Don Portz briefly discussed future tagging efforts. The Program currently uses coded wire tags and calcien marking, as well as PIT tags and acoustic tags for juveniles. All fish are coded wire tagged, and 7,500 are PIT-tagged. Acoustic tags only last for a certain period of time, while PIT tags last forever.

Don stated that in fall 2014, tags on adult fish should double because the program has been so successful. He added that a different technology for tagging juveniles may be considered in order to look at movements of smaller fish.

**Information Sharing**

### Action Items

The next Fisheries Management TFG meeting will be scheduled in June-July 2014.

### Future Topic Suggestions

Suggested topics for the next Fisheries Management TFG included:

1. An update from NMFS on the next phase of permitting.
2. An update on the redds study.
3. An update from Zac Jackson on acoustics and red surveys.
4. An update on the juvenile trap and haul program including total numbers and success.

### **Meeting Adjourned**