


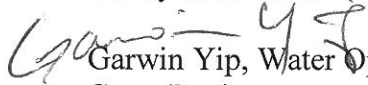



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
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Sacramento, CA 95814-4700

Effective Date: January 15, 2015

MEMORANDUM FOR: Administrative Record for the Designation of a Nonessential Population of Central Valley Spring-run Chinook Salmon Below Friant Dam in the San Joaquin River, California (ARN: 151422SWR2010SA00361) and the Biological and Conference Opinion on the Long-term Operations of the Central Valley Project and State Water Project (CVP/SWP Opinion); ARN: 151422SWR2006SA00268)

TO: 
Maria Rea, Assistant Regional Administrator, California Central Valley Area Office (CCVAO), West Coast Region

THROUGH: 
Garwin Yip, Water Operations Branch Chief, CCVAO, West Coast Region

FROM: Rhonda Reed, San Joaquin Branch Chief, CCVAO, West Coast Region 

SUBJECT: 2015 (January 2015 – December 2015) Technical Memorandum (Tech Memo) Regarding the Accounting of San Joaquin River Spring-run Chinook Salmon at the Central Valley Project and State Water Project Sacramento-San Joaquin Delta Fish Collection Facilities

NMFS has prepared this Technical Memorandum (Tech Memo) to fulfill the following three purposes:

- 1) Fulfill one of the requirements of the *Designation of a Nonessential Experimental Population of Central Valley Spring-run Chinook Salmon Below Friant Dam in the San Joaquin River, California* (70 FR 79622, December 31, 2013) to release an annual technical memorandum to “calculate and document the proportionate contribution of Central Valley (CV) spring-run Chinook salmon originating from the reintroduction to the San Joaquin River and deduct or otherwise adjust for share of CV spring-run Chinook salmon take when applying the operational triggers and incidental take statements associated with the NMFS 2009 Biological and Conference Opinion on the Long-term Operations of the Central Valley Project and State Water Project (CVP/SWP Opinion) or subsequent future biological opinions, or Section 10 permits.”



- 2) Present the methodology that will be employed in 2015 to identify reintroduced spring-run Chinook salmon (*Oncorhynchus tshawytscha*) from the San Joaquin River and the deduction or adjustment for such reintroduced spring-run Chinook salmon in the operations of the Central Valley Project (CVP) and State Water Project (SWP) such that the reintroduction will not impose more than *de minimus* water supply reductions, additional storage releases, or bypass flows on unwilling third parties.
- 3) Present the spring-run Chinook salmon release and monitoring plans for 2015. There will not be any naturally produced juvenile spring-run Chinook salmon emigrating from the San Joaquin River Restoration Area in 2015.

2014 Tech Memo Implementation Summary

Elements of the 2014 Tech Memo were implemented as follows. The Program released 60,114 Feather River hatchery spring-run Chinook salmon juveniles to the San Joaquin River just above the confluence with the Merced River on April 17th and 18th. All juvenile spring-run Chinook salmon released were adipose fin-clipped and CWTed (06-05-58). All of the downstream sampling efforts and fish facilities were informed of the presence of these fish and their CWT identifier. Two of these fish were recaptured in the Mossdale trawl; one on 4/22 and one on 4/29. None of these fish were captured at downstream locations, i.e. the fish facilities or Chipps Island trawl. All recaptured fish were sacrificed at the point of capture for CWT identification as per protocol. None of the juvenile spring-run Chinook salmon released were acoustically or passive integrative technology (PIT) tagged.

No spring-run Chinook salmon broodstock from the San Joaquin River Conservation and Research Facility were released to the river.

Two rotary screw traps were deployed within the Restoration Area; one at the Highway 99 Bridge and one at Ball Ranch. These rotary screw traps were inconsistently operational due to low river flows and were located in the upper reaches of the restoration area, well above where the juvenile spring-run Chinook salmon were released.

Genetic tissue samples were taken at the Feather River hatchery from the parents of the released juvenile spring-run Chinook salmon for use in parentage analysis. Tissue samples were also collected from all captured adult fall-run Chinook salmon returning to the restoration area. In addition, a few of the naturally produced (unclipped) juvenile fall-run Chinook salmon captured in the rotary screw traps were kept for genetic analysis.

No changes in water operations were experienced as a result of the juvenile spring-run Chinook salmon releases.

NMFS has committed to developing this Tech Memo, to the greatest extent possible, in coordination with interested parties and has formed a working group for this purpose. The focus of the 2014 Tech Memo working group process was related to the exploration of various

techniques that may allow us to account for naturally produced San Joaquin spring-run Chinook salmon at the Delta facilities. Information from mini-workshops and current literature are being collated into a Guidance Document for use by NMFS and the San Joaquin River Restoration Program (Program) to determine which methodology or combination of methodologies will be implemented. Four main methods were explored: 1) Marked sentinel/surrogate groups; 2) Mass marking; 3) Genetic assignment; and 4) Development of a juvenile production estimate. Each of these methods was taken into consideration in the development of the 2014/2015 monitoring plan for the Program; elements of these methods will be investigated in 2015, as described in the following section.

2015 Implementation

River conditions within the Program Restoration Area will dictate the implementation of fish releases and fisheries monitoring. We are planning for drought conditions this year that will influence our monitoring methods and fish releases both temporally and spatially. The Program will monitor river and climate conditions and may cancel or modify fisheries monitoring and/or fish release activities based on expected conditions in the system. High water temperatures during the fall-run Chinook salmon spawning period in 2014 may limit the numbers of juvenile fall-run Chinook salmon available to the Program to conduct studies.

If conditions and logistics allow, juvenile fall-run Chinook salmon may be released with juvenile spring-run Chinook salmon to test the sentinel/surrogate methodology and improve downstream detection of San Joaquin Chinook salmon. The Program will continue to evaluate the feasibility of mass marking through the evaluation of juvenile collection methods. Genetic samples will be collected from all adult fall-run Chinook salmon returning to the Restoration Area for the parental-based tagging effort. In addition, all naturally-produced (unmarked) juvenile Chinook salmon captured in the rotary screw traps will be genetically sampled for the parental inference analysis. These techniques are described further in the genetics analysis section of this Tech Memo. The Program will continue to monitor juvenile Chinook salmon survival, which would be a key element for developing a juvenile production estimate. Egg survival will be monitored with emergence traps, juvenile emigration survival in the Restoration area will be estimated using acoustic tags and rotary screw trap sampling, and juvenile migration to the Delta will be estimated from recapture of coded-wire tagged fall- and spring-run Chinook salmon in the Mossdale Trawl and at the Delta fish collection facilities.

1. Calculation of incidental take:

a. Incidental take –

Incidental take calculations and adjustments to the incidental take estimates pursuant to the CVP/SWP Opinion are unnecessary for 2015 because all of the CV spring-run Chinook salmon released into the San Joaquin River will be adipose fin-clipped and coded wire tagged (CWT).

b. Operational triggers –

Adjustment to the juvenile salmon take estimates used to develop operational triggers pursuant to the CVP/SWP Opinion are unnecessary for 2015 because all of the spring-run Chinook salmon released into the San Joaquin River will be adipose fin-clipped and CWTed.

2. Accounting Methodology:

a. Physical Marking –

All juvenile spring-run Chinook salmon released into the San Joaquin River as part of the Program will be adipose fin-clipped and CWTed with a code unique to Program fish so that they can be distinguished from any other juvenile Chinook salmon release group. Because these fish will be adipose fin-clipped, they are exempted from take prohibitions under the 4(d) rule for West Coast threatened salmonids (70 FR 37160, June 28, 2005). As a result, reintroduced spring-run Chinook salmon will not be counted toward the incidental take limits and trigger levels provided under all applicable biological opinions and Endangered Species Act section 10 research permits for operation of any and all facilities of the CVP/SWP (outside of the Friant Division of the CVP). Spring-run Chinook salmon released by the Program may also be tagged with a passive integrated transponder (PIT) or an acoustic tag, depending on objectives for the Program's 2015 monitoring and research efforts.

Biologists at the CVP/SWP fish collection facilities will record, measure, and sacrifice all adipose fin-clipped fish with a positive CWT detection (as currently undertaken via facility Standard Operating Procedures). CWTed fish will be processed (tag code read) by staff at the CVP/SWP within 24 hours and reported to the California Department of Fish and Wildlife (CDFW), which will then report the CWT data to the Data Assessment Team (DAT) and Delta Operations for Salmonids and Sturgeon (DOSS) group within 24 hours. The CWT data will also be provided to the San Joaquin River Spring-run Tech Memo group.

b. Genetic Analysis -

The Program is establishing a parentage based tagging (PBT) program for the San Joaquin Chinook salmon populations. PBT involves the annual sampling and genotyping of adult chinook salmon returning to the Restoration Area; these data will be used to create a database of their genotypes for future parentage assignment of their progeny. Genetic sampling of the San Joaquin River fall-run Chinook salmon population began in 2013. All adult Chinook salmon returning to the Restoration Area in 2014/15 will be tissue sampled for genetic testing.

In addition, all natural origin (unmarked) juvenile Chinook salmon captured in the rotary screw traps in 2015 will be tissue sampled for genetic analysis as part of

the parental inference analysis. Parental inference analysis will include identification of both parents of each individual, estimation of the number of crosses that took place in the river, family line contribution, and identification of crosses not attributable to the Program.

Genetic analysis of Chinook salmon at the CVP/SWP fish facilities is desirable as a method to distinguish San Joaquin River spring-run Chinook salmon from other runs of Chinook salmon once natural production is occurring within the San Joaquin River and adipose fin-clipping all juvenile spring-run Chinook salmon reintroduced to the San Joaquin River is no longer possible. The Program will coordinate with the winter-run Chinook salmon genetic sampling effort planned for 2015 at the CVP/SWP fish collection facilities to ensure that the information being collected (*i.e.*, tissue samples) could be used for reintroduced spring-run Chinook salmon identification at a later date, if needed. Currently, all non-adipose clipped Chinook salmon captured at the CVP/SWP fish collection facilities are genetically sampled unless the numbers of fish are too large to process.

In addition, because juvenile CV spring-run Chinook salmon from the Feather River Fish Hatchery have not to date been identifiable using the Genetic Stock Identification method, parental stock will be sampled again in 2015 so that a Pedigree Analysis could be performed in the future, if necessary, to distinguish reintroduced spring-run Chinook salmon.

3. Reintroduction Process:

a. Release plans –

A total of approximately 54,400 juvenile spring-run Chinook salmon from the Feather River Fish Hatchery will be released into the San Joaquin River downstream of Friant Dam in spring 2015 as part of the Program.

The exact release location, date, number of release groups, and numbers of fish per release group are dependent on water year type, physical river conditions within the Program Restoration Area (the San Joaquin River from Friant Dam to the Merced River confluence), and fish availability and size, which will not be known until early spring. Target release timing, location and numbers of fish per release will be identified and posted on the Program website (<http://restoresjr.net>) when determined.

The U.S. Fish and Wildlife Service (USFWS) will issue pre-release notifications via email to interested stakeholders and agencies approximately one week prior to fish release. A second notification will be made to the same list immediately after the fish release. A memorandum summarizing the CWT releases will be prepared for the DOSS group with details regarding the releases, marks, and CWT codes.

Release information will also be reported to the Regional Mark Processing Center website (<http://www.rmpc.org>).

b. Monitoring Plan -

Juvenile spring-run Chinook salmon released through the Program will be monitored throughout the San Joaquin River to determine migration timing, route selection, and juvenile survival. The scope of monitoring will depend on where fish are released within the Program Restoration Area and river conditions.

Rotary screw traps will be placed in one to four locations within the Program Restoration Area and operated when sufficient velocities allow for drum rotation and operations are safe for field personnel. Rotary screw traps will likely be installed in the following general areas: near the SR 99 Bridge, Gravelly Ford, Chowchilla Bifurcation Structure, and just downstream of the San Mateo Road crossing the San Joaquin River (these are potential locations only and may change due to conditions, permitting or access and vandalism issues). The rotary screw traps are anticipated to be deployed prior to the release of Program tagged juvenile spring-run Chinook salmon into the river and operated until Program study activities are completed. Mark-recapture studies using juvenile fall-run Chinook salmon are planned for spring 2015 by the Program to set the groundwork for determining rotary screw trap efficiencies which may enable use of the rotary screw trap data for Chinook salmon abundance calculations and/or development of a juvenile production estimate

NMFS has determined (based on discussions with members of the Tech Memo group) that tracking juvenile salmon migration through the lower San Joaquin River beyond the current monitoring efforts in place by other programs does not have value this year. There are two current monitoring efforts that will track juvenile salmon in the lower San Joaquin River; beach seining conducted by the USFWS and trawling at Mossdale conducted by the CDFW. In addition, some of the released spring-run will be acoustic-tagged, allowing them to be tracked through the lower San Joaquin River using the acoustic tag arrays in place for the 6-Year Steelhead Study pursuant to the CVP/SWP Opinion.

4. Timeline:

Once final juvenile spring-run Chinook salmon release information is available, this information will be posted to the Program website at www.restoresjr.net. Beginning in January 2015, NMFS will hold monthly meetings to discuss implementation of this 2015 Tech Memo and to prepare for the development of the 2016 Tech Memo. NMFS will also focus the meetings on implementation of the techniques developed in the guidance document and creating a framework for effectively identifying and distinguishing juvenile spring-run Chinook salmon produced in the San Joaquin River that may be collected in the SWP and CVP fish salvage operations once natural production is occurring in the San Joaquin River, likely beginning in spring 2017.

5. Revision:

NMFS developed this memorandum to govern activities for one year only. As a result, it will not be in effect after January 15, 2016. NMFS intends to prepare a new memorandum by January 15, 2016, to govern activities during 2016.

6. Adjustments to the CVP/SWP Opinion:

No adjustments are needed in 2015 to the CVP/SWP Opinion; because all reintroduced juvenile spring-run Chinook salmon will be adipose fin-clipped and these will not be included in the operational triggers or incidental take limits.

