



UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

January 26, 2012

In response refer to:
2012/00052

Michelle Banonis
U.S. Bureau of Reclamation
2800 Cottage Way, Room W-1727
Sacramento, California 95825-1898

Dear Ms. Banonis:

Enclosed is Permit 16608, issued to the U.S. Bureau of Reclamation, under the authority of section 10 of the Endangered Species Act (ESA) of 1973, as amended, and its implementing regulations. Permit 16608 authorizes take of ESA-listed California Central Valley steelhead (*O. mykiss*) associated with scientific research in the San Joaquin River basin of the Central Valley, California. In effecting the take authorized by Permit 16608, you will have accepted the terms and conditions of the permit and you will be prepared to comply with the provisions of the permit, the applicable regulations, and the ESA.

You are required to review Permit 16608 prior to engaging in your research activities and comply with the permit's conditions. The original and a file copy of the signature page are also enclosed. Please sign and date both and return the signature page marked "FILE COPY" to the National Marine Fisheries Service contact at the North Central Coast Office. In the future, should you need a change in this authorization, please submit a modification request.

Your attention is directed to section C, which describes annual reporting and authorization requirements. Reports are due by July 1, annually. Permit 16608 is subject to annual review based, in part, on your reported take per annual period and your compliance with the conditions of the permit. Permit 16608 expires on March 31, 2014.

Please note that Permit 16608 is not valid until the Central Valley Office receives the signed copy of the signature page. You may submit the copy by facsimile to (916) 930-3629 and then send the original by mail. Please contact Ms. Shirley Witalis at (916) 930-3606, or via e-mail at Shirley.Witalis@noaa.gov if you have any questions concerning this permit or require additional information.

Sincerely,

for Rodney R. McInnis
Regional Administrator

Enclosure



cc: Chris Yates, NMFS, Long Beach, California
Maria Rea, NMFS, Sacramento, California
Rhonda Reed, NMFS, Sacramento, California
Leslie Mirise, NMFS, Sacramento, California
Copy to Administrative file: 151422SWR2012SA00015

ENDANGERED SPECIES ACT SECTION 10 PERMIT FOR TAKE OF LISTED SPECIES

Permit Number: 16608
Permit Type: Research
Expiration Date: March 31, 2014
Reporting Period: December 1 through March 31
Annual Reports Due: July 1

Permit Holder:
U.S. Bureau of Reclamation

Responsible Party and Primary Contact:
Ms. Michelle Banonis, Natural Resources Specialist
U.S. Bureau of Reclamation
2800 Cottage Way, Room W-1727
Sacramento, CA 95825-1898
Phone: (916) 978-5457
Email: Mbanonis@usbr.gov

Principal Investigator
Mr. Don Portz, Fishery Biologist
U.S. Bureau of Reclamation
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Phone: (303) 859-9505; (303) 445-2220
E-mail: dportz@usbr.gov

Co-Investigators:
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Michelle Workman, Fisheries Biologist
U.S. Fish and Wildlife Service
Phone: (209) 334-2968 x404; (209) 915-6416
Email: Michelle_Workman@fws.gov

Authorization:

This authorization is subject to the provisions of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1543) as amended, the National Marine Fisheries Service (NMFS) regulations governing ESA-listed species permits (50 CFR Parts 222-226), and the conditions set forth hereinafter.

U.S. Bureau of Reclamation (Reclamation) is hereby authorized to take ESA-listed California Central Valley (CCV) steelhead (*O. mykiss*) for scientific research purposes, as cited in the permit holder's application. Take numbers are listed by category in Table 1 of this permit.

Background:

Permit 16608 will authorize Reclamation for non-lethal take of CCV steelhead during monitoring activities along locations on the San Joaquin River between the base of Sack Dam and the confluence of the Merced River. The take activities authorized under Permit 16608 will include: capture (raft-mounted electrofisher, fyke nets with wing walls and fish traps, and steelhead-specific trammel nets), handling (conducting length measurements, gender identification, tissue and scale collection assessment of condition; checking for the presence of tags, and application of a floy tag with a unique identification number), of CCV steelhead. Captured CCV steelhead will be transported by tank truck and released in the San Joaquin River downstream of the mouth of the Merced River. Recaptured CCV steelhead will be identified by the presence of a floy tag.

Non-intentional mortality of steelhead due to project activities will be preserved as voucher specimens or sampled for tissue collection, to be sent to the California Department of Fish and Game (CDFG) Central Valley Salmonid Genetic Repository.

1. Research Project

The Steelhead Monitoring Plan is conducted under the auspices of the San Joaquin River Restoration Program (SJRRP). SJRRP intends to determine the effects of increased spring-time water flows on the hydrology of the San Joaquin River, and will evaluate the interim flows within the SJRRP Restoration Area, identified as the San Joaquin River above the confluence of the Merced River and below Friant Dam. This evaluation will support the two primary goals of the SJRRP: (1) to restore and maintain fish populations in "good condition" in the mainstem San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish, and, (2) to reduce or avoid adverse water supply impacts on all of the Friant Division long-term contractors that may result from the Interim and Restoration Flows provided for in the Settlement. Spring interim flows are initiated after December 1, approximately the time that the CDFG Hills Ferry Barrier weir is removed from the San Joaquin River and there is no physical structure to discourage fish migration into the upper San Joaquin River, and continue to June 1. The interim flows could attract steelhead into the SJRRP Restoration Area prior to the completion of SJRRP habitat improvements and measures to obscure false migratory pathways. The Steelhead Monitoring Plan will conduct monitoring activities from December 1 through March 31, within the following areas: the San Joaquin River between the base of Sack Dam and just upstream of the confluence of the San Joaquin River and Merced River, the mouth of Mud Slough, the San Joaquin River near the Highway 140 bridge, the mouth of Salt Slough, just below Sack Dam, and at the return

points of the Eastside and Mariposa bypasses on the San Joaquin River. All monitoring sites lie within the Middle San Joaquin-Lower Stream hydrologic unit code (HUC), Mile 182.0 to Mile 118.0. In addition, the Steelhead Monitoring Plan proposes to rescue CCV steelhead that would not have access to suitable spawning habitat further upstream on the San Joaquin River due to the presence of numerous passage impediments. Captured individuals will be transported to suitable habitats downstream of the mouth of the Merced River.

Three sampling methodologies will be employed, as determined, at the listed sites:

- (1) A raft mounted electroshocker will be used to navigate through deep and shallow waters of the sampling locations. Raft mounted electroshockers will be utilized in coordination with suggested NMFS guidelines for electroshocking and in coordination with NMFS staff before and during monitoring activities. Sampling frequency will be monthly from December through March of the following year. Capture of the same fish multiple times is to be anticipated, thus monthly sampling is important to ensure fish recovery from stress between capture. Sampling sites will include: Mud Slough, Salt Slough, Newman Wasteway, Eastside Bypass, Mariposa Bypass, Sand Slough Control Structure, and base of Sack Dam.
- (2) A fyke net with wing walls and fish trap will be utilized to capture fish that follow the shorelines at different times of the day during the migration season. The fyke net will be deployed in sampling locations upstream of the confluence of the Merced River, the mouths of Mud, Slough, Salt Slough, Newman Wasteway, and existing structure at Sack Dam. This proposed technique will be implemented once the Hills Ferry Barrier is removed around mid-December and will remain deployed until March 15. Fyke net traps will be checked daily, and all captured adult steelhead will be sampled, tagged, and released. Data from this methodology will give an actual count of steelhead abundance migrating in the upper reaches of the San Joaquin River.
- (3) Trammel nets will be employed during high velocity flows, manned during the entire time of their deployment, and their drift cycle will be limited to 10 minutes. To ensure the safety of steelhead, fisheries biologists tending the nets will follow at a close distance to observe risk of entanglement, and respond quickly to retrieve the nets. Sampling time will depend on the number of fish and bycatch caught at each location. Capture of the same fish multiple times is to be anticipated, thus monthly sampling is important to ensure fish recovery from stress between capture.

Fish Handling and Relocation

Captured steelhead will be transported downstream of the mouth of the Merced River in transport tanks of river water filled by a portable screened water pump. Captured steelhead will be moved using a water-filled vessel to minimize stress and loss of slime. Oxygen gas will be supplied to the transport tanks by compressed oxygen gas cylinders and micro-bubble diffusers to maintain near saturation levels during transport. Tank water will be treated with sodium chloride to decrease ionic gradient to minimize stress. The truck will be stopped after 30 minutes of

transportation and each hour thereafter for visual inspection of the life-support system and fish wellbeing. Water will be tempered by the receiving water at the predetermined release location to acclimate before transferring fish, by pumping receiving water directly into the transport tank until the temperature reaches that of the release water.

A. Number and Species of Animals

This permit is for work to be conducted over an approximate two-year period. Tables 1 lists the maximum take authorized per annual reporting period (December 1 through March 31) for the Steelhead Monitoring Program.

Table 1. Estimated annual take of CCV steelhead associated with Permit 16608 monitoring survey activities

Life Stage/ <i>O. mykiss</i>	Listing Unit/Stock	Origin	Sex	Expected Take	Indirect Mortality	Take Action	Observation/ Collect Method	Sampling Period
Unknown	California Central Valley (NMFS Threatened)	Natural	Male and Female	6	0	Capture/Mark, Tag, Sample Tissue/ Release Live Animal	Net, Fyke	December 1 through March 31
Unknown	California Central Valley (NMFS Threatened)	Natural	Male and Female	10	1	Capture/Mark, Tag, Sample Tissue/ Release Live Animal	Electrofishing, Raft-mounted	December 1 through March 31
Unknown	California Central Valley (NMFS Threatened)	Natural	Male and Female	2	0	Capture/Mark, Tag, Sample Tissue/ Release Live Animal	Net, Trammel	December 1 through March 31

B. Special Conditions

1. All persons operating under Permit 16608 shall be knowledgeable with the conditions of Permit 16608 and requirements of the ESA. The responsible party for Permit 16608 shall ensure that all persons operating under Permit 16608 shall follow the conditions therein.
2. Live ESA-listed steelhead shall be handled with extreme care and kept in water to the maximum extent possible during sampling and processing procedures. Adequate circulation and replenishment of water in holding units is required.
3. When a sample is composed of a mix of species, live ESA-listed steelhead shall be processed first and released as soon as possible after being captured to minimize the duration of handling stress. Distressed ESA-listed steelhead rescued at the capture site should be allowed to recover to the maximum extent possible prior to being released into the mainstem San Joaquin River.
4. Daily release locations within the same general vicinity will be randomized to avoid habituation of any predators within the area to particular release locations.
5. All persons operating under Permit 16608 shall follow appropriate protocols to minimize injury to sampled fish, and shall have access to properly maintained state-of-the-art equipment.
6. Each researcher using electrofishing as a sampling technique will follow operation protocols described in “NMFS Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000” (<http://www.nwr.noaa.gov/1salmon/salmesa/4ddocs/final4d/electro2000.pdf/>). Prior to the start of electrofishing at each location, water temperature and conductivity measurements shall be taken to determine the criteria for appropriate electrofishing guidance.
7. Electrofishing in the vicinity of adult ESA-listed steelhead or redds of ESA-listed steelhead is prohibited. In accordance with National Marine Fisheries Service Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act (NMFS 2000), prior to all backpack electrofishing activities, a visual inspection of the survey site shall be performed to ensure that no adult ESA-listed steelhead or redds of ESA-listed steelhead are present in the sampling area.
8. Fyke traps shall be checked daily (every 24 hours) of operation at a minimum. During periods of peak migration, high flows, and/or debris levels during storm periods may require the traps to be checked more frequently to minimize mortality. Activities associated with sampling activity shall not interfere with rearing ESA-listed steelhead in the river corridor.
9. Trammel nets drift intervals shall not exceed 10 minutes per deployment in the San Joaquin River during implementation of the SJRRP spring interim flows. Activities associated with sampling activity shall not interfere with rearing ESA-listed steelhead in the river corridor.

10. ESA-listed steelhead shall not be handled if stream temperatures at the capture site exceed 70° F. Under these conditions, fish may only be identified and counted. Scales may be collected from live juvenile ESA-listed salmonids only when water temperatures are below 60° F.
11. Intentional lethal take of ESA-listed steelhead is NOT authorized. Any ESA-listed steelheads unintentionally killed during sampling activities and in usable condition should be preserved as voucher specimens and sent to the CDFG Central Valley Salmonid Genetic Repository. Preservation protocols should be confirmed by CDFG scientist, Robert Titus:

CDFG Central Valley Salmonid Genetic Repository
Robert G. Titus, PhD
Senior Environmental Scientist
Fisheries Branch/Anadromous Resource Assessment Unit
8175 Alpine Avenue, Suite F, Sacramento, CA 95826
rtitus@dfg.ca.gov; office 916.227.6390; fax 916.227.6399

12. Any tissues/mortalities of juvenile ESA-steelhead that are unintentionally killed during research activities shall be made available to NMFS upon request.
13. NMFS will monitor project activities to ensure that the projects are operating satisfactorily in accordance with Permit 16608. NMFS will monitor the actual annual take of ESA-listed steelhead associated with the proposed research activities (as provided in annual reports or by other means). Authorized take may be reduced if population data indicate the take associated with Permit 16608 or cumulative take authorizations for the ESA-listed steelhead distinct population segments (DPS) exceeds that which NMFS thinks is acceptable.

C. Permit Reporting and Reauthorization Requirements

National Marine Fisheries Service Contact:

Shirley Witalis, Permit Specialist
National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4706
(916) 930-3606
(916) 930-3629 (FAX)
shirley.witalis@noaa.gov

1. Annual Report(s): The authorization of this permit is contingent upon receipt of annual reports. Once an annual report is submitted to NMFS, the permit holder may continue permitted research activities unless otherwise notified by NMFS. NMFS will notify the permit holder if the annual report is inadequate and more information is required. If information is requested but not supplied, this 10(a)(1)(A) permit may be suspended until the NMFS request is met.

Annual Reports shall include:

- a. A detailed description of activities conducted under this permit, including: the total number of ESA-listed salmonids taken; the manner of take; and the dates/locations of take.
 - b. A copy of all backpack electrofishing logs which shall include the following information: site description, date, amount of electrofishing effort (time electrofished), number of electrofisher passes utilized, electrofisher output (volts), pulse rate (if using pulsed DC current), water temperature, conductivity, and visibility.
 - c. A description of any problems and/or any unforeseen effects and any steps taken (or proposed) to resolve such problems.
 - d. Describe the effects permitted activities had on animals, including any unforeseen responses or effects. Describe the physical condition of animals taken and used in the permitted activities. A description of what measures were taken to minimize the permitted activities' effects on animals and the effectiveness of these measures. If animals were unintentionally injured or killed, describe the circumstances. Describe how they were disposed of if it wasn't in the way described in the authorization/permit.
 - e. If applicable, describe the method used to estimate take if it differed from your proposed method.
 - f. If applicable, describe the method used to estimate take if it differed from your proposed method.
 - g. State what steps were taken to coordinate the permitted activities with other permit holders.
 - h. A summary of preliminary findings. Did you accomplish your project goals?
 - i. Provide titles of reports, publications, etc. resulting from the reporting period.
2. Final Report: The permit holder shall submit a final report to the NMFS contact within ninety (90) days of the expiration of this permit summarizing the results of the research and the success of the research relative to its goals.

D. Notification Requirements and Operational Reports

National Marine Fisheries Service Contact:

Shirley Witalis, Permit Specialist
National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4706
(916) 930-3606
(916) 930-3629 (FAX)
shirley.witalis@noaa.gov

1. Notification of Field Activities: The permit holder shall notify the above contact, via phone, facsimile, or e-mail, at least two weeks in advance of initiating the research. The required notification shall include start date(s), location(s), projected end date(s), and the names and affiliations of all personnel who will operate under the permit not included as an investigator. The permit holder will also notify the above contact of any other research or monitoring activities occurring in the locations of the permit holder's activities.
2. Exceeding Authorized Take: The permit holder is not exempt from the ESA section 9 take prohibition for any additional take above that authorized, including mortalities. In the event that the authorized level of take, including mortalities, is exceeded, the permit holder shall notify, via phone, facsimile, or e-mail, the above contact as soon as possible, but no later than two calendar days after the unauthorized take. In the notification, the permit holder shall explain to the above contact the circumstances of the unauthorized take, if the unauthorized take included mortalities, or if the take occurred in a manner not authorized by Permit 16608. The notification shall also include a re-evaluation of the techniques that were used, or an explanation as to why permitted sampling techniques were not at fault for exceeding take. NMFS may evaluate the research project to determine if techniques need to be revised accordingly to prevent additional take. Pending review of these circumstances, NMFS may suspend research activities or amend this permit in order to allow research activities to continue.
3. Taking of Unauthorized ESA-listed Species: In the event any ESA-listed species not included in this permit, or covered by another permit or exemption, is taken during the course of research activities, the permit holder shall notify, via phone, facsimile, or e-mail, the above contact as soon as possible, but not later than two calendar days after the event. In the notification, the permit holder shall explain the circumstances of the unauthorized take. Pending review of these circumstances, NMFS may suspend research activities or amend this permit in order to allow research activities to continue.
4. Transfer of Biological Samples: Biological samples collected from ESA-listed steelhead are the responsibility of the permit holder and shall be properly handled until transferred. All tissues and voucher samples shall be sent the attention of Robert G. Titus, Anadromous Resource Assessment Unit, CDFG Central Valley Salmonid Genetic Repository, 8175 Alpine Avenue, Suite F, Sacramento, CA 95826, (916) 227-6390; unless otherwise authorized by written approval from NMFS. Any such transfer will be subject to such conditions as NMFS deems appropriate.

5. Taking of Marine Mammals: In the event any marine mammal is taken during the course of research activities, the permit holder shall notify the above contact by phone, facsimile, or e-mail as soon as possible, but no later than two calendar days after the event. The permit holder shall then submit a written report to the above contact, describing the circumstances of the unauthorized take. Pending review of these circumstances, NMFS may suspend research activities or amend this permit in order to allow research activities to continue.

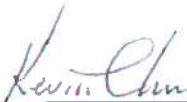
E. General Conditions

1. The permit holder shall ensure that ESA-listed salmonids are taken only by the means, in the areas, and for the purposes set forth in the permit application, as limited by the special conditions in this permit.
2. Should NMFS determine that a sampling procedure provided for under this permit is no longer acceptable, the permit holder shall immediately cease using such procedure until an acceptable procedure has been prescribed by NMFS.
3. The permit holder, in effecting the take authorized by this permit, is considered to have accepted the conditions of this permit and shall be prepared to comply with the provisions of this permit, the applicable regulations, and the ESA.
4. The permit holder is responsible for the actions of any individual operating under the authority of this permit.
5. The permit holder, personnel, or designated agent acting on the permit holder's behalf, shall possess a copy of this permit when conducting the activities for which take of ESA-listed salmonids is authorized herein.
6. The permit holder may not transfer or assign this permit to any other person(s), as person is defined in section 3(12) of the ESA. This permit ceases to be in force or effective if transferred or assigned to any other person without prior authorization from NMFS.
7. Any personnel operating under Permit 16608 that require Federal or State licenses to practice their profession shall be duly licensed under the appropriate law.
8. The permit holder shall coordinate with other co-managers and/or researchers to ensure that no unnecessary research duplication and/or adverse cumulative effects to ESA-listed steelhead occur as a result of the permit holder's activities.
9. The permit holder shall allow any NMFS employee(s), or any other person(s) duly designated by NMFS, to accompany field personnel during the activities provided for in this permit and/or to inspect the permit holder's records and facilities if such records and facilities pertain to activities for which take of ESA-listed salmonids is authorized by this permit, relate to ESA-listed salmonids, or otherwise pertain to NMFS' responsibilities under the ESA.
10. Under the terms of the regulations, a violation of any of the conditions of this permit will subject the permit holder, and/or any individual who is operating under the authority of this permit, to penalties as provided for in the ESA.

11. The provisions of this permit may be amended by NMFS, Office of Protected Resources, upon reasonable notice to the permit holder.
12. 50 CFR section 222.23(d)(8) provides for a reasonable fee to be charged to cover the costs of the issuance of permits under the ESA. The fee for this permit has been waived.
13. This permit may be revoked by NMFS if the activities authorized by this permit are not carried out, if the activities are not carried out in accordance with the conditions of the permit and the purposes and requirements of the ESA and its implementing regulations, or if NMFS otherwise determines that the findings made under section 10(d) of the ESA no longer hold.
14. Any falsification of annual reports or records pertaining to this permit is a violation of this permit.
15. The permit holder, in signing this permit, has accepted and will comply with the provisions of this permit, applicable regulations (50 CFR 222), and the ESA.

F. Penalties and Permit Sanctions

- a. Any person who violates any provision of this permit is subject to civil and criminal penalties, permit sanctions, and forfeiture as authorized under the ESA and 15 CFR part 904.
- b. All permits are subject to suspension, revocation, and denial in accordance with the provisions of subpart D [Permit Sanctions and Denials] of 15 CFR part 904.



1/26/2012

for Rodney R. McInnis
Regional Administrator
Southwest Region
National Marine Fisheries Service

Date



1-30-12

Michelle Banonis,
San Joaquin River Restoration Program
Natural Resources Specialist
U.S. Bureau of Reclamation
Mid-Pacific Region

Date