



United States Department of the Interior



FISH AND WILDLIFE SERVICE
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In reply refer to:
08FBDT00-2016-F-0153 &
08ESMF00-2012-F-0062

JUN 13 2016

MEMORANDUM

To: Area Manager, Bureau of Reclamation, Bay-Delta Office

From: Field Supervisor, U.S. Fish and Wildlife Service, San Francisco Bay- Delta Fish and Wildlife Office, Sacramento, California

Subject: Amendment to the Biological Opinion for the Suisun Marsh Habitat Management, Preservation, and Restoration Plan and the Project-Level Actions in Solano County, California (Service File Number 08ESMF00-2012-F-0062)

This memorandum is in response to the U.S. Bureau of Reclamation's (Reclamation) April 6, 2015, request to the U.S. Fish and Wildlife Service (Service) to include three new wetland maintenance activities to the Project-Level Actions in the June 10, 2013 Biological Opinion for the Suisun Marsh Habitat Management, Preservation, and Restoration Plan and the Project-Level Actions in Solano County, California (Service File Number 08ESMF00-2012-F-0062) (2013 BO). The 2013 BO included program-level analysis for marsh restoration and project-level analysis for managed wetland operations and maintenance activities on endangered California clapper rail (*Rallus longirostris obsoletus*), endangered salt marsh harvest mouse (*Reithrodontomys raviventris raviventris*), endangered California least tern (*Sternula antillarum browni*), endangered soft bird's-beak (*Chloropyron molle* ssp. *molle*) and its designated critical habitat, endangered Suisun thistle (*Cirsium hydrophilum* var. *hydrophilum*) and its designated critical habitat, and threatened delta smelt (*Hypomesus transpacificus*) and its designated critical habitat. Reclamation submitted a previous request on November 5, 2015, for separate consultation for the maintenance projects; however, it was determined the maintenance projects are consistent with the Project-Level Actions of the 2013 BO and appropriate to include in the 2013 BO. This response is in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

Recent genetic analyses of rail species resulted in a change in the common name and taxonomy of the large, "clapper-type" rails (*Rallus longirostris*) of the west coast of North America to Ridgway's rail (*Rallus obsoletus*) (Maley and Brumfield 2013, Chesser *et al.* 2014). The change in the common name and taxonomy of the California clapper rail, however, does not change the listing status of the species.

The first modification is to include suction dredging for cleaning the Roaring River Distribution System fish screens. Currently, the fish screen cleaning and maintenance includes limited amounts of excavation dredging and disposal of dredged materials in Suisun Marsh.

The second modification is to allow excavation dredging on an annual basis when necessary to clean all fish screen structures on water diversions in Montezuma Slough. Currently, dredging is limited to no more than once in 3 years at any one location in Suisun Marsh.

The third modification is to allow installation of cofferdams on the exterior side of the levee in Montezuma Slough and dewatering in order to replace or repair water control structures. Activities that involve repair or replacement of water control structures, such as drain pipes or exterior drain gates, are covered programmatically under the 2013 BO. However, it has been determined that there are situations in which a temporary cofferdam on the exterior (tidal) side of the levee in Montezuma Slough would be required to dewater the area and complete these maintenance activities.

Additionally, the Service updated the California Clapper Rail Survey Protocol in June 2015 after the issuance of the 2013 BO and will include in this amendment.

The Service has reviewed the request and amends the June 10, 2013, biological opinion as follows:

Page 5, Project Level, B. Managed Wetland Maintenance Activities, iii. New Activities

Change:

1. Dredging from Tidal Sloughs as Source Material for Exterior Levee Maintenance

To:

1. Dredging from Tidal Sloughs as Source Material for Exterior Levee Maintenance and for Fish Screen Cleaning

Add:

4. Constructing Cofferdams and Dewatering on Exterior Levees

Page 30-31, Programmatic Conservation Measures, California Clapper Rail:

Change: Any reference and conservation measure relating to the DFG 2007 rail survey protocol to the Service's June 2015 California Clapper Rail Survey Protocol (attachment).

Page 52, Description of the Project-Level Proposed Action for Managed Wetland Activities, New Activities, Table 6

Add to Table 6:

Managed Wetland Activities	Existing Annual Activities	New Activity Annual Limits
Suction dredging from tidal sloughs as needed for Roaring River Distribution System (RRDS) fish screen cleaning	Currently not permitted	1000 cy per year

Page 55, Description of the Project-Level Proposed Action for Managed Wetland Activities, New Activities, Dredging..., second paragraph:

Change:

Similarly, some of the 16 fish screen structures and the RRDS fish screen experience significant siltation problems. Silt is deposited around these screens, which impedes the operation of the screen and screen-cleaning brushes. Every few years a relatively small amount of material would be removed from the fish screen basins (about 20 to 100 cy each) by dredging. (This amount is included in the total 3 million cy proposed for dredging in the Marsh.) Alternative measures (trying to move silt by hand) have been ineffective. Dredging around fish screens would be done during low tide to minimize in-water work and turbidity. As the tide returns, the fish screen would be opened to allow turbid water to be drawn into the managed wetland. Dredge spoils would be placed on the crown or lands ide slope of the exterior levee adjacent to the fish screen. In instances where material cannot be used adjacent to the dredging site, the material may be used on other levees in Suisun Marsh.

To:

Similarly, some of the 16 fish screen structures and the RRDS fish screen experience significant siltation problems. Silt is deposited around these screens, which impedes the operation of the screen and screen-cleaning brushes. It has been determined that excavator dredging may be necessary on an annual basis to maintain the operational function of Suisun Marsh fish screen basins. The total volume expected to be dredged annually at any fish screen site is typically less than 100 cubic yards (cy) out of the annually permitted 100,000 cy. Excavator dredging is expected to only occur at 3 to 5 sites a year, out of the 16. Dredging around fish screens would be done during low tide to minimize in-water work and turbidity. As the tide returns, the fish screen would be opened to allow turbid water to be drawn into the managed wetland. Dredge spoils would be placed on the crown or lands ide slope of the exterior levee adjacent to the fish screen. In instances where material cannot be used adjacent to the dredging site, the material may be used on other levees in Suisun Marsh.

Page 55, Description of the Project-Level Proposed Action for Managed Wetland Activities, New Activities, Dredging..., after second paragraph:

Add:

Suction Dredging

During annual dive inspections of the fish screens and intake structures in the RRDS, an additional maintenance need was identified to ensure that the screens are operating to their design specifications. Specifically, the screens fit into a channel slot when they are properly placed in the structure; when they are removed to be washed, sediment falls into the groove, and 1-2 inches of sediment has accumulated over time at the base of the 36 screens, preventing the screens from sitting properly in the slots. Sediment has also accumulated in the embayment area behind the fish screens as well as in front of the screens. Sediment removed from the area immediately beneath the screens quickly returns from the adjacent areas to where the screens do not meet their operational design specifications. In order to remove accumulated sediment from the groove at the base of the RRDS fish screen structure, from the embayment area, and from an area within 6 feet of the screen structure suction dredging along with excavator dredging is necessary. The total volume to be dredged is approximately 1,000 cy as needed but not anticipated to be required on an annual basis.

In preparation for suction dredging, a fish block net with 3/32-inch mesh would be installed in Montezuma Slough to isolate the in-water work area. This mesh size is consistent with the NMFS 2001 screening criteria and would protect fish greater than or equal to 20 mm to 30 mm in length by preventing them from entering the in-water work area. The block net would be installed during low tide by qualified fisheries biologists, with the assistance of divers and in such a manner as to keep fish out of the in-water work area and prevent re-entry. The structural integrity of the block net will be maintained by semi-rigid floats at the top of the net and a lead line at the bottom. The bottom of the net will also be secured by a series of screw anchors fixed to the channel bottom. This design will ensure that the net stays in place and does not bow into the in-water work area. The net would be monitored by a biological monitor throughout each workday to ensure proper placement and function in keeping fish out of the in-water work area. Work would stop immediately anytime the net is determined to be out of position or not functioning as intended and would resume only after any fish that may have entered are allowed to leave the in-water work area, and the net is positioned and functioning correctly.

After sediment is removed from in front of the screens, divers would exit the water and the screens would be removed and placed on a barge anchored nearby in Montezuma Slough. The barge would be anchored using traditional bottom anchors. Once the fish screens are off of their footing, divers would enter the water and remove sediment at the bottom of the frame. This work will only be completed if divers identify sediment build-up at the base of the screens at the time of the project. The screen tracks and gabion baskets would be visually inspected by divers to determine if repairs are needed.

Suction dredging will employ hydraulic suction with trash pumps fitted with 6- to 8-inch suction hoses. These hoses would be screened with 3/4-inch mesh. Multiple pumps may be used simultaneously. The removal of sediment will include suction dredging, traditional dredging using an excavator, or a combination of both methods. Sediment would be collected in settling tanks and/or sediment bags that would be staged on the levee directly behind the embayment area. Filtered water from the settling tanks and sediment bags would be discharged into Hammond Island pond. The Reclamation District would place material dredged from the marsh on the crown and back slope of existing levees to repair damage from storms and counteract levee subsidence.

Page 56, Description of the Project-Level Proposed Action for Managed Wetland Activities, New Activities, after last paragraph:

Add:

Exterior Levee Cofferdam and Dewatering

In order to conduct minor maintenance activities required to restore the function of water control structures such as exterior drain pipes and gates, temporary cofferdams would need to be installed on the exterior side of the levee in Montezuma Slough or other sloughs. The purpose of using the sheet pile walls would be to lower water levels behind the cofferdam to facilitate repair and replacement of water control structure components. Pumps would be used to dewater the site, and the water would be returned back to an appropriate area at either Montezuma Slough, other slough, or a managed wetland. Cofferdams would consist of a steel sheet pile wall in an arc against the bank of Montezuma Slough or other sloughs as necessary. Construction is described in *Constructing Cofferdams in Managed Wetlands*. Qualified biologists would first install a fish block net and conduct seine operations if required before installing a temporary cofferdam and dewatering the area behind the cofferdam within Montezuma Slough.

Page 58, Project-Level Conservation Measures, after *Standard Design Features and Construction Practices*:

Add:

Exterior Levee Cofferdam and Dewatering

1. Exterior cofferdams will be installed during the appropriate work windows when special status species are expected to be at their lowest densities and least sensitive to construction activities.
2. Cofferdam sheet piles will be pushed into place.
3. Work will be conducted in the dry area behind the cofferdams to minimize disturbance of sediments and minimize turbidity increase in adjacent waterways.

4. The active work area for cofferdams will be sufficiently stabilized using erosion BMPs at the end of each work day to help prevent soil, gravel, or other construction materials from leaving the site and potentially entering the waterways.

5. All equipment and personnel will stay within the boundaries of the project site, which is the top of the levees and levee slopes, when installing the cofferdam.

Page 61, Project-Level Conservation Measures, Fish:

Add:

12. A biological monitor will be present during in-water activities associated with suction dredging and cofferdam installation. Biological monitors will be notified in advance of all work activities and locations and scheduled to be onsite as required. Work will stop immediately if a listed or protected species is encountered and the appropriate agency or agencies (Service, NMFS, and/or DFW) will be notified. Any salvaged fish will be immediately returned to a pre-determined location in Montezuma Slough by the on-site biologist. Work will not resume prior to the agencies' approval, or as agreed to in prior consultation with the agencies.

13. Before suction dredging, a fish block net with 3/32-inch mesh will be installed prior to initiation of in-water activities by qualified biologists in a manner that pushes fish out of the in-water work area.

14. A biological monitor will inspect the fish block net each morning before suction dredging begins to ensure the net is properly installed and functioning to prevent fish from entering the in-water work area. If at any point it is determined the net is not functioning properly and needs to be repositioned, all dredging activities will cease until the biological monitor determines the block net is set and functioning properly.

15. In-water work for suction dredging the RRDS fish screens will be restricted to low-flow periods between the delta smelt work windows unless otherwise specified by appropriate agencies. This window can be extended based on flow conditions, if approved in writing by the Service.

16. Diversion culverts will be closed prior to suction dredging work. Culverts may need to be opened on weekends or between phases to assure adequate water supply in Roaring River. If this is needed, the block net will be re-installed prior to re-initiation of work.

17. Before a temporary cofferdam is installed within Montezuma Slough for dewatering an area, a qualified biologist will install a fish block net and conduct seine operations if required.

18. Disturbances to fish species from installing a cofferdam will be limited to 1-7 days when the cofferdam is installed and 1-7 days when it is removed.

Page 113, Effects of the Project-Level Proposed Action, Delta Smelt, after the second paragraph:

Add:

Suction dredging may cause harassment and displacement of delta smelt, which can cause physiological stress, affect normal behaviors, reduce tolerance to disease and toxicants, and cause fish to relocate from optimal rearing, feeding, and predator avoidance habitat to less optimal habitat. These effects can reduce feeding efficiency, physical condition, and survival rates, and increase predation, all of which can contribute to reduced population numbers.

Suction dredging also has the potential to entrain delta smelt in the RRDS and impinge them on the suction device's mesh fish screen resulting in injury and/or mortality. Entrainment occurs when fish are drawn into a water diversion facility non-volitionally through pumping or other water diversion activities. Impingement occurs when water pumping or diversion activities create water velocities close to the intake structure that exceed a fish's swimming capabilities and fish become pinned to, or impinged on, the intake structure's fish screen.

Setting block nets would temporarily disturb a small area of emergent vegetation that could provide cover for delta smelt where each end of the net is anchored to the shore. Suction dredging, excavator dredging, and setting large anchors to station the barges would disturb benthic sediments of Montezuma Slough or other sloughs. Sediment mobilization and increased turbidity could temporarily impair water quality within, adjacent to, and downstream of the project area. Sediment mobilization, increased turbidity, and the resulting impaired water quality could affect habitat for, and the physical health of, delta smelt if present.

During installation of the fish block net, an on-site biologist will be present in case fish salvage efforts are needed. To reduce the likelihood of salvage, the block net will be set in such a way as to allow fish to flee from the divers in the water prior to the divers fully enclosing the area. If any fish need to be salvaged, they will be immediately returned to Montezuma Slough or other sloughs as appropriate.

Installation of an exterior cofferdam and associated dewatering in Montezuma Slough could affect the delta smelt and its critical habitat. Potential effects would be on a small amount of habitat that would be dewatered. Additional aquatic habitat would be disturbed by deploying the fish-exclusion block net, and an adjacent area of Montezuma Slough could be affected by potential use of a crane-equipped barge to install and remove the cofferdam sheet piling. These effects are anticipated to be minimized, because timing when delta smelt are least likely to be present. Before installing the cofferdam and dewatering the area in Montezuma Slough, qualified biologists would install a fish block net and conduct seine operations if required. During this activity, an on-site biologist will be present in case fish salvage efforts are needed. Any salvaged fish will be immediately returned to Montezuma Slough or other sloughs as appropriate.

The other portions of the 2013 biological opinion remain the same.

REINITIATION—CLOSING STATEMENT

This concludes the reinitiation of formal consultation on the Suisun Marsh Habitat Management, Preservation, and Restoration Plan and the Project-Level Actions in Solano County, California. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must immediately cease, pending reinitiation.

Please address any questions or concerns regarding this response to Kim Squires, Section 7 Coordinator at (916) 930-5634 or kim_squires@fws.gov. Please refer to Service file number 08FBDT00-2016-F-0153 and 08ESMF00-2012-F-0062 in any future correspondence regarding this project.

Attachment

cc:

Steve Chappell, Suisun Resource Conservation District, Suisun City, California
Cliff Feldheim, California Department of Water Resources, West Sacramento, California

United States Department of the Interior

FISH AND WILDLIFE SERVICE
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California Clapper Rail Survey Protocol

The California clapper rail was recently reclassified, and is now referred to in scientific literature as the **California Ridgway's Rail** (*Rallus obsoletus obsoletus*), but for the purposes of this document we will use the original name, **California Clapper Rail** (*Rallus longirostris obsoletus*) as that remains the listed entity under the Act.

Below is a description of the standard methodology used to detect the presence or absence of California clapper rails. Once a survey proposal using this survey methodology has been developed, it should be mailed or emailed to the San Francisco Bay-Delta Fish and Wildlife Office. The Service will review the survey proposal and determine if it is adequate for implementation. The qualifications, including copies of applicable 10(a)(1)(A) permit(s), of all observers proposed for a survey should be included in the proposal and provided to the Service for review and approval. (Note: Submit survey proposal with maps identifying the location of listening and playback stations to the Service at least three (3) weeks prior to the scheduled initiation of the surveys). Approval by the San Francisco Bay-Delta Fish and Wildlife Office to conduct surveys will be given via email to the applicant. After the surveys are completed, the survey results should be compiled and submitted to the San Francisco Bay-Delta Fish and Wildlife Office for review to determine if work or other activities proposed in the survey area may proceed.

Survey Methodology:

1. For each **project site** (or marsh), **survey stations** (individual survey locations) should be established so that the entire marsh is covered by 100-meter radius circular plots. Listening (passive) and call playback (active) survey stations should be established no more than 200 meters apart along transects in or adjacent to marsh areas. If the marsh in question is too large (e.g. Outer Bair Island) to accommodate this requirement, please contact us for alternative procedures. Survey stations should be located on levee crowns or boardwalks to minimize disturbances to marsh areas. When surveys are conducted within a marsh (as opposed to from the edge), listening stations should not be placed along slough or channel edges to minimize disturbance to rail species. We do recognize that this will not be possible at all times. A detailed map depicting sloughs and other marsh landmarks or features in relation to the proposed survey stations should be developed.
2. **Surveys** should be initiated between January 15 and February 1. For each survey station, four surveys are to be conducted: two (2) passive surveys, followed by two (2) active surveys. Surveys should be spaced at least two (2) weeks apart and should cover the time period from the date of the first survey through the end of March or mid-April. This will allow for the surveys to encompass the optimum time period when the highest frequency of calls is likely to occur. Survey at one project site may span multiple days if the project site is large or multiple observers are not available. Surveys should proceed until clapper rail(s) are detected. Once a clapper rail is detected, the project site is considered occupied. At this time, all active surveys within the project site shall be terminated. It is at the discretion of the surveying party as to whether or not to conclude passive surveys at this time.

3. Survey Duration

Morning and evening surveys can be conducted. Morning surveys will be initiated no sooner than one hour before sunrise and extended no more than one hour after sunrise; evening surveys will begin one hour prior to sunset and extend no more than one hour following sunset.

Passive surveys: An observer should be assigned to each survey station for the duration of two hours.

Active surveys: An observer should be assigned to each survey station for the duration of 45 minutes. A total of 3 clapper rail calls will be broadcast at each survey station spaced at 15 minutes apart. Each broadcast will have a duration of 30 seconds and will include three vocalizations: duet, kek and kek-burr. Volume should be between 80-90 dB at 1-m in front of the speaker. Calls will start at the arrival of the surveyor at the station. Playback will be stopped immediately if a clapper rail predator (e.g., northern harrier, great blue heron, short-eared owl, cat, etc.) approaches within 100 m of the survey station or a clapper rail location.

Trainees should familiarize themselves with various calls and with estimating distances to calls before training in the field. In-field training should include ways to minimize disturbance to rails and marsh vegetation. The 2004 "Rail Training Document" guidelines should be followed with the exception of guideline #6. Trainees should be stationed with an experienced California clapper rail observer for a minimum of four (4) surveys to assess the trainee's ability to accurately detect and map calls in the field. Surveyors should contact the San Francisco Bay-Delta FWO for recommendations on favorable training sites for new observers and their instructors.

4. All rail vocalizations should be recorded, noting the call type, location, and time on a detailed map of the marsh. The call types are coded as C = clapper/clatter, D = duet, K = kek, B=kek-burr, KH = kek-hurrah, SK = squawk and V = visual sighting. Other unusual calls also should be noted. If a rail is moving during the survey, several locations may be noted for the same bird(s).
5. Weather information, including wind velocities and direction, should be recorded. Information on disturbances (e.g., dogs or cats in marsh and aircraft flyovers) occurring during the surveys should be recorded.

General Requirements:

1. A 10(a)(1)(A) permit is required to conduct active surveys. This 10(a)(1)(A) permit can be used to supervise other fully trained and qualified biologist as long as surveys are being conducted within sight distance of the 10(a)(1)(A) permit holder for all station locations.
2. Surveys should not be conducted when tides greater than 4.5 feet National Geodetic Vertical Datum (NGVD) as predicted at the Golden Gate occur at the marsh during the survey period or during full moon periods.
3. Surveys should not be conducted when wind velocities exceed 10 mph or wind gusts exceed 12 mph, or during moderate to heavy rains. If a survey of a marsh is conducted over more than one day in a row, observers should be assigned to stations adjacent to their previous day's station if at all possible.