

TULE RED TIDAL RESTORATION PROJECT

Additional Conservation Measures

The following additional conservation measures (“ACMs”) have been proposed to protect sensitive biological resources (special status birds and rare plants), and were developed in support of the Project’s pending Section 7 Consultation with the USFWS, in compliance with the federal Endangered Species Act (ESA). These ACMs are subject to revision as a part of the ongoing Section 7 consultation with USFWS.

Tule Red Tidal Restoration Additional Conservation Measures	
Biological Resources	
Ridgway's (California Clapper) Rail	
<ul style="list-style-type: none"> • Preconstruction surveys for California clapper rail will be conducted, by a Service- approved biologist, at and adjacent to areas of potential tidal and managed wetlands habitats for California clapper rail. The surveys will focus on potential habitat that may be disturbed by construction activities during the breeding season to ensure that these species are not nesting in these locations. Survey methods will follow the protocols used by DFW during previous rail surveys in Suisun Marsh (DFG, 2007). 	
<ul style="list-style-type: none"> • If California clapper rails are present in the immediate construction area, the following measures will apply during construction activities. <ol style="list-style-type: none"> A. To minimize or avoid the loss of individual California clapper rails, activities within or adjacent to California clapper rail habitat will not occur within 2 hours before or after extreme high tides (6.5 feet or above, as measured at the Golden Gate Bridge), when the marsh plain is inundated, because protective cover for California clapper rails is limited and activities could prevent them from reaching available cover. B. To minimize or avoid the loss of individual California clapper rails, activities within or adjacent to tidal marsh areas will be avoided during the California clapper rail breeding season from February 1 through August 31 each year unless surveys are conducted to determine California clapper rail locations and California clapper rail territories can be avoided. C. If breeding California clapper rails are determined to be present, activities will not occur within 700 feet of an identified calling center. If the intervening distance across a major slough channel or across a substantial barrier between the California clapper rail calling center and any activity area is greater than 200 feet, it may proceed at that location within the breeding season. D. <i>Exception:</i> Only inspection, maintenance, research, or monitoring activities may be performed during the California clapper rail breeding season in areas within or adjacent to California clapper rail breeding habitat with approval of the Service and DFW under the supervision of a qualified biologist. 	
<p>USFWS has approved and published an updated survey protocol for Ridgway's (California clapper) rail in June 2015, after the publication of the SMP and SMP PBOs. The proposed action would implement the updated survey protocol as requested by USFWS (pers. comm. Heather Swinney, 2016). The project proponent will implement the following survey protocols at project footprint areas with habitat suitable for Ridgway's rail (Appendix B).</p>	
1.	<p>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 USFWS 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.</p>
2.	<p>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.</p>

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3.	<p>Survey Duration</p> <p>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.</p> <p><u>Passive surveys:</u> An observer should be assigned to each survey station for the duration of two hours.</p> <p><u>Active surveys:</u> 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.</p> <p>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.</p>
4.	<p>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).</p>
5.	<p>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.</p>
<u>General Requirements:</u>	
1.	<p>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.</p>
2.	<p>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.</p>
3.	<p>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 (USFWS, 2015).</p>
Special-Status Plants	
•	<p>(1) A complete botanical survey of the action area will be completed using the Service's Guidelines for <i>Conducting and Reporting Botanical Inventories for Federally listed, Proposed and Candidate Plants (September 23, 1996)</i> and DFG's <i>Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (May 8, 2000)</i>.</p>

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•	(2) Special-status plant surveys required for project-specific permit compliance will be conducted for 2 years prior to initiating construction. The purpose of these surveys will be to verify whether the locations of special-status plants identified in previous surveys are extant, identify any new special-status plant occurrences, and survey any portions of the action area not previously identified. The extent of mitigation of direct loss of or indirect impacts on special-status plants will be based on these survey results.
•	(3) Locations of special-status plants in proposed construction areas will be recorded using a global positioning system (GPS) unit and flagged.
•	(4) If initial screening by a Service-approved biologist identifies the potential for special- status plant species to be directly or indirectly affected by a specific project, the biologist will establish an adequate buffer area to exclude activities that would directly remove or alter the habitat of an identified special-status plant population or result in indirect adverse effects on the species.
•	(5) Access may be restricted around restoration sites where necessary to protect special-status plant populations through appropriate management plans and the design of the tidal marsh restoration. This may include signage, buffers, seasonal restrictions, and design or no access, depending on the sensitive species in question.
•	(6) The project proponents will oversee installation of a temporary, plastic mesh-type construction fence (Tensor Polygrid or equivalent) at least 4 feet (1.2 meters) tall around any established buffer areas to prevent encroachment by construction vehicles and personnel. A Service-approved biologist will determine the exact location of the fencing. The fencing will be strung tightly on posts set at maximum intervals of 10 feet (3 meters) and will be checked and maintained weekly until all construction is complete. The buffer zone established by the fencing will be marked by a sign stating: This is habitat of [the special-status species being protected] a [identify the species' status] plant species, and must not be disturbed. This species is protected by [the ESA of 1973, as amended/CESA/ California Native Plant Protection Act].
•	(7) No construction activity, including grading, will be allowed until condition number 6 is satisfied.
•	(8) No grading, clearing, storage of equipment or machinery, or other disturbance or activity will occur until all temporary construction fencing has been inspected and approved by the qualified biologist.
•	(9) Any special-status species observed during surveys will be reported to the Service and DFW so the observations can be added to the California Natural Diversity Database (CNDDDB).