CESPL-RGS (File Number SPL-2019-00951)

# Appendix 3 – Endangered Species Act Section 7 Biological Opinion



# **United States Department of the Interior**

U.S. FISH AND WILDLIFE SERVICE Ecological Services Carlsbad Fish and Wildlife Office 2177 Salk Avenue, Suite 250 Carlsbad, California 92008



In Reply Refer to: FWS-ERIV/IMP-22-0080603-S7

February 23,2023 Sent Electronically

Mr. Kyle J. Dahl Team Lead, South Coast Branch U.S. Army Corps of Engineers Los Angeles District 5900 La Place Court, Suite 100 Carlsbad, California 92008

# Subject: Formal and Informal Section 7 Consultation for the Salton Sea 10-Year Management Program, Riverside and Imperial Counties, California

Dear Mr. Dahl:

This document was prepared in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*), and is in response to your letter dated and received August 18, 2022, requesting initiation of formal and informal consultation on the State of California's Salton Sea Management Program Phase I: 10-Year Plan (SSMP 10-Year Plan). Your agency has determined the SSMP 10-Year Plan may affect the federally endangered desert pupfish (*Cyprinodon macularius*), Yuma Ridgway's rail (*Rallus obsoletus [=longirostris] yumanensis*) southwestern willow flycatcher (*Empidonax traillii extimus*), and least Bell's vireo (*Vireo bellii pusillus*) and the federally threatened western yellow-billed cuckoo (*Coccyzus americanus* [western distinct population segment]) in accordance with section 7 of the Act. Designated critical habitat for these species does not occur in the action area.

The State of California's Natural Resources Agency, specifically the Department of Water Resources (DWR) and Department of Fish and Wildlife (CDFW), is the non-Federal Applicant requesting establishment of Letter of Permission (LOP) procedures (File No. SPL-2019-00951-KJD) that would be used to seek Department of the Army Corps (Corps) authorization under section 404 of the Clean Water Act for projects implemented under the SSMP 10-Year Plan. Additionally, other Federal agencies including the Bureau of Reclamation (BOR), Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA), the Natural Resources Conservation Service (NRCS), and the U.S. Fish and Wildlife Service Salton Sea Sonny Bono National Wildlife Refuge (SSSBNWR) would review projects proposed under the SSMP 10-Year Plan for Federal actions that may be authorized by their respective agencies that would require compliance with section 7 of the Act. Pursuant to 50 CFR §402.07 the Corps is designated as the lead Federal agency and the other Federal agencies as cooperating agencies.

In accordance with 33 CFR §325.2(e), the Corps is authorized to develop "alternative procedures", including LOP, which are a type of permit issued through an abbreviated processing procedure through coordination with Federal and state fish and wildlife agencies, pursuant to the Fish and Wildlife Coordination Act, Section 10 of the Rivers and Harbors Act, and/or section 404 of the Clean Water Act. The LOP procedures can be developed to review and potentially authorize a suite of proposed activities that would result in the discharge of dredged and/or fill material into waters of the U.S. in lieu of undertaking a typical permit process. The development of LOP procedures differs from a typical permit process in that much of the review is done earlier in the process and as the procedures are established. This allows for a more expedited permitting review once individual projects are proposed to the Corps. Additionally, the development of the LOP procedures supports a more program-scale review of similar proposed activities and their effects than is afforded by individual project reviews. The Corps has developed LOP procedures for the SSMP 10-Year Plan, which are included in Appendix A.

This biological opinion is based on information provided in the following documents and communications: (1) Biological Assessment (BA) for the Salton Sea Management Program dated July 2022. (Stantec 2022a); (2) Salton Sea Management Program Phase 1: 10-Year Plan, Imperial and Riverside Counties, California, Draft Environmental Assessment (Stantec 2022b); (3) written, telephone, and electronic mail correspondence received during the consultation time period; and (4) pertinent literature contained in our files. A record of this consultation is available at the Palm Springs Fish and Wildlife Office.

## **Concurrences on Listed Species**

The Federal agencies requested concurrence for their not likely to adversely affect determinations for the species identified below, resulting in informal consultation.

- Southwestern willow flycatcher
- Least Bell's vireo
- Western yellow-billed cuckoo

We considered this request for our concurrence that the SSMP 10-Year Plan may affect, but is not likely to adversely affect the above listed species. We agree that effects to the species from implementation of the SSMP 10-Year Plan and construction, operation, maintenance, monitoring, and management of the associated activity types are either: (1) discountable because they are unlikely to occur; or (2) insignificant because the scale and extent of the negative effects will not result in incidental take of southwestern willow flycatcher, least Bell's vireo, and western yellow-billed cuckoo. Thus, we concur with the determination that implementation of the SSMP 10-Year Plan is not likely to adversely affect these species. Our concurrence is based on the information for each species provided in the BA (Stantec 2022a) and summarized below.

Low numbers of southwestern willow flycatcher, least Bell's vireo, and western yellow-billed cuckoo likely occupy habitat seasonally and do not breed in the desert wash woodlands, tamarisk woodland, and tamarisk scrub habitats within the action area. To ensure effects are discountable or insignificant, the DWR and CDFW (hereafter Applicant) will prepare and implement a habitat

protection, mitigation, and restoration plan (CM 1) and a project-level western yellow-billed cuckoo, southwestern willow flycatcher, and least Bell's vireo management and survey plan (CM 5). Specifically, these plans will conduct surveys to ensure these species do not occur in affected habitats, ensure habitat removal occurs outside of the bird breeding season to the greatest extent feasible (typically February through September), and enhance, restore, or replace native habitats at a 3:1 ratio, or in compliance with project specific permits, to ensure a no net loss of suitable habitat when implementing the SSMP 10-Year Plan. By implementing conservation measures (see Conservation Measure section below), short-term impacts would be considered insignificant or discountable to habitats that support southwestern willow flycatcher, least Bell's vireo, and western yellow-billed cuckoo. Long-term adverse effects to these habitats are not anticipated. Overall, we do not anticipate adverse effects to southwestern willow flycatcher, least Bell's vireo, or western yellow-billed cuckoo with implementation of the SSMP 10-Year Plan based on low species occurrence and lack of breeding in the action area and implementation of avoidance and minimization measures.

## **CONSULTATION HISTORY**

In March 2021, the Service became a cooperating agency (40 CFR §1508.5), with the Corps as the lead agency, to provide expertise with respect to the environmental impact on the quality of the human environment from the implementation of the SSMP 10-Year Plan. Specifically, the Service reviewed and provided comments on the administrative draft Environmental Assessment (EA) pursuant to the National Environmental Policy Act and the actions described in the SSMP 10-Year Plan. Cooperating agency input was acquired through monthly meetings and review of the EA and the draft BA. Efforts to clarify the project description, conservation measures, and effects to listed species included bi-weekly meetings and electronic mail correspondence. A draft of the biological opinion was sent to the Corps, cooperating agencies, and the Applicant on December 23, 2022. Draft comments were provided to the Service on February 3, 2023.

#### **BIOLOGICAL OPINION**

## **DESCRIPTION OF THE PROPOSED ACTION**

#### **Federal Actions**

Many of the activities described in the SSMP 10-Year Plan will require the issuance of an authorization by the Corps, which is the lead Federal agency, pursuant to section 404 of the Clean Water Act. Other Federal actions by cooperating Federal agencies include BIA rights-of-way agreements for tribal trust lands and issuance of use authorizations by BOR and BLM for habitat restoration and dust suppression projects located on lands under their jurisdiction. Similarly, the SBSSNWR has jurisdiction over activities occurring within the boundaries of the wildlife refuge, therefore, those actions would require a special use permit and a determination that the proposed action is compatible with the purpose for which the refuge was established. Lastly, a federal action could also include NRCS technical and funding assistance under the Watershed Protection and Flood Prevention act of 1954 (Public Law 83-566), as amended or the

1985 Food Security Act, as amended (also known as Farm Bill). A list of the cooperating Federal agencies and their respective Federal actions is summarized in Table 1 below.

Agency	Role	Jurisdiction/Authority	Actions			
Corps	Lead Agency	Federal Waters of the United States Section 404 of the Clean Water Act	Issuance of 404 permits via Letter of Permission Procedures			
BIA	Cooperating Agency	Tribal Trust Lands/ Right-of-Way Agreement 25 CFR Part 169 Rights-of-Way over Indian Land	Right(s) of Way Approval			
BLM	Cooperating Agency	Landowner/ Right- of- Way Agreement Federal Land Policy and Management Act	Authorization of projects on BLM- administered public lands through the issuance of rights-of- way and/or land use permits.			
BOR	Cooperating Agency	Landowner/Right- of- Way Agreement/ Funding Source Reclamation Act of 1902	Authorization of projects on BOR-managed lands through the issuance of licenses, entry permits, and special use permits; funding assistance			
NRCS	Cooperating Agency	Funding source/ National Watershed Program Watershed Protection and Flood Prevention Act	With an approved watershed or conservation plan, can approve design and implementation funding for eligible partners, lands, and practices			
USFWS - SBSSNWR	Cooperating Agency	Landowner/ Special Use Authorization National Wildlife Refuge System Improvement Act	Authorization of projects or activities within the boundaries of the SBSSNWR that are deemed compatible with refuge purposes through the issuance of special use permits			

 Table 1: SSMP 10-Year Plan Federal Actions

#### Salton Sea 10-Year Management Plan

The Salton Sea is California's largest lake and is currently maintained by irrigation runoff from agricultural fields in the Imperial and Coachella valleys and local rivers. The Salton Sea has been shrinking in size as inflows are reduced because of water conservation and other water management actions. A rapid and substantial increase in salinity and reduction in the size of the Salton Sea is occurring as a result of inflow reductions associated with Imperial Irrigation District's (IID) Water Conservation and Transfer Project (Water Transfer Project), which entails water conservation and transfer transactions pursuant to the Agreement for Transfer of Conserved Water executed by IID and the San Diego County Water Authority in 1998 (IID and Authority 1998), and supplemented by the 2003 Quantification Settlement Agreement (QSA; Department 2003) and related agreements. The SSMP 10-Year Plan is designed to mitigate playa exposure because of the Salton Sea size reduction from the Water Transfer Project and identifies habitat and dust control projects around the perimeter of the Salton Sea (Figure 1) to reduce dust emissions from the exposed playa below the 2003 shoreline ([-241.2 feet mean sea level (msl)].

The goals of the SSMP 10-Year Plan are to: (1) develop a range of aquatic habitats to support fish and wildlife species dependent on the Salton Sea and (2) develop a range of restoration and dust suppression projects to address air quality concerns at the Salton Sea. In addition, the SSMP 10-Year Plan intends to meet the need of protecting and conserving the desert pupfish by creating pupfish habitat and enhancing connectivity among pupfish populations as the Salton Sea becomes unsuitable (Stantec 2022a). To achieve these goals, the SSMP 10-Year Plan describes the construction, operation, maintenance, monitoring, and management activities that would result in the creation, monitoring, and management of 29,800 acres of aquatic habitat restoration and dust suppression and restoration projects on Salton Sea lakebed areas that have been, or will be, exposed by the year 2028. Under the first goal, at least 14,900 acres of projects proposed in the SSMP 10-Year Plan would be aquatic habitat restoration projects. These projects would convert exposed lakebed areas to aquatic habitat suitable for fish and wildlife and they would be constructed on the exposed Salton Sea playa, which includes areas adjacent to and between the 2003 shoreline (-241.2 msl) and the projected 2028 shoreline (-247.5 feet msl). These types of projects would include the construction of aquatic habitat ponds and permanent vegetation wetlands, which are described in the Program-level activity types section below.

The second goal of restoration and dust suppression would occur through the construction of aquatic habitat pond and permanent vegetated wetland projects; however, the primary function would be to provide at least 14,900 acres of habitat for fish and wildlife. Restoration and dust suppression projects (waterless and water reliant projects) may also have beneficial impacts by establishing vegetation or creating freshwater wetlands on exposed areas, but the primary function would be to suppress fugitive dust emissions for improved air quality. Overall, the SSMP 10-Year Plan would provide a management program for multiple beneficial projects that combine dust suppression with habitat restoration.

#### **Programmatic Consultation**

The SSMP 10-Year Plan would consist of projects considered to be programmatic actions that include (1) multiple similar, frequently occurring, or routine actions expected to be implemented in a particular geographic area; and (2) a proposed program, plan, policy, or regulation providing a framework for future proposed actions (50 CFR § 402.02). Therefore, the Corps as the lead agency with BIA, BLM, BOR, SSSBNWR, and NRCS as cooperating agencies requested a programmatic consultation to address adverse effects on desert pupfish and Yuma Ridgway's rail, consistent with regulations on interagency cooperation (50 CFR § 402). This programmatic consultation was developed to include a mixed programmatic action and a framework programmatic action. A mixed programmatic action means, for purposes of an incidental take statement, a Federal action that approves action(s) that will not be subject to further section 7 consultation.

The framework programmatic action establishes a framework for the development of later actions consistent with the goals of the SSMP 10-Year Plan but is not fully consistent with the activity types, construction features, and conservation measures described in the sections below. These subsequent actions will be subject to further stepped-down or tiered section 7 consultations, if they are consistent with the SSMP 10-Year Plan and may affect federally listed species addressed in this biological opinion.

A mixed programmatic action provides incidental take under a programmatic consultation (hereafter referred to a program-level consultation) to analyze multiple similar, frequently occurring, or routine actions expected to be implemented on the exposed Salton Sea playa. Under the program-level consultation, future Federal actions consistent with the activity types, construction features, and conservation measures described and analyzed in this biological opinion will not be subject to further section 7 consultation. If incidental take is reasonably certain to occur and the proposed program-level project is consistent with the activity types, construction features, and conservation measures described below, that project's subsequent section 7 consultation would be streamlined under this program-level consultation.

This program-level consultation includes site-specific projects that are eligible aquatic habitat restoration and restoration and dust suppression activity types, construction features, and conservation measures described below that occur on the Salton Sea playa, which includes the 2003 shoreline and the projected 2028 shoreline. All site-specific projects must result in a no net loss of aquatic resource acreage and functions in the SSMP 10-Year Plan area. The no net loss requirements will be evaluated in the Corps LOP procedures and must include a mitigation plan that clearly demonstrates the impacts to aquatic resources have been or will be avoided and minimized to the maximum extent practicable. Therefore, a net increase in aquatic resources and function will occur at the program level because of site-specific project implementation. A site-specific project may have minor impacts on aquatic resources that are not mitigated, but the overall SSMP 10-Year Plan must demonstrate, via annual reporting, a net increase of aquatic resources and functions. Ultimately, the program-level consultation will include site-specific projects resulting in the construction, operation, maintenance, monitoring, and management of 14,900 acres of aquatic habitats around the Salton Sea.

#### Administration of the Mixed Programmatic Biological Opinion

As the Applicant proposes specific projects, the Corps will coordinate with the Service per the requirements included in the LOP procedures for the SSMP 10-Year Plan (Appendix A). The Applicant will provide the Corps, through the LOP application procedures, a description of the site-specific project activity type(s) and construction features used, project location, results of species-specific surveys, an assessment of habitat impacts (in acres) for federally listed species, and the list of site-specific applicable conservation measures. Early coordination with the Service will begin once "Pre-Application Coordination" has been initiated as described in Section B of the LOP procedures.

The pre-application materials provided to the Corps will be made available to the Service in electronic form. The Service will evaluate the site-specific project effects for consistency with the impacts addressed in this biological opinion, discuss with the Corps on whether additional protective measures would be prudent, coordinate with the aforementioned Federal Agencies if necessary, and review the anticipated level of incidental take of individuals of listed species for the specific project. Once the LOP Application Submittal process has begun (see Section B.3. in Appendix A), the Applicant will complete a Service Activity Review Form (Activity Review Form; Appendix B) that provides an effects determination based on the pre-application materials provided. The Service will have 30 calendar days to review the Activity Review Form and provide a response.

Cumulatively, SSMP 10-Year Plan projects authorized by the LOP procedures would result in no net loss of aquatic ecosystem functions and services and provide a net benefit to listed species and the ecosystems upon which they depend. However, in compliance with the Final Mitigation Rule 33 CFR §332.3(k) and pursuant to section



Figure 1: SSMP 10-Year Plan Action Area

404(b)(1) Guidelines (40 CFR § 230.91), compensatory mitigation for individual projects that would result in the permanent loss of aquatic resources may be required. Aquatic resource gains and benefits described in the SSMP 10-Year Plan would be documented in annual reporting provided to the Corps as described below (see Reporting Requirements). All temporary impacts to aquatic resources would be restored to preconstruction conditions as soon as practicable.

To qualify for an LOP under these procedures, proposed site-specific projects must meet the following criteria:

- 1. Occur around the Salton Sea generally between the water surface elevations measured at the 2003 and projected for 2028 shorelines, i.e., marking the extent of the Salton Sea's recession for purposes of the SSMP 10-Year Plan (Figure 1).
- 2. Be consistent with the State of California's SSMP 10-Year Plan.
- 3. Be an activity type associated with aquatic habitat restoration and/or dust suppression and restoration, as described below.
- 4. Result in no more than minor individual and cumulative impacts to the aquatic environment as determined by the Corps.
- 5. Comply with section 404(b)(1) guidelines, SSMP 10-Year Plan LOP general conditions, and SSMP 10-Year Plan LOP mitigation framework (Appendix A).

# **Program-level activity types**

Activity types and associated construction features are summarized in Table 2 below, followed by a short description of the activity type and construction features. Site-specific projects at the program level may include one or more activity types. A full description of each activity type is included in section 4.3.1 of the BA.

Activity Type	<b>Construction Features (Activity could include all or any combination of these features)</b>					
Collect data to support aquatic habitat and dust suppression and restoration projects	Geotechnical investigations, soil sampling, installation of stream gauges, drone flyovers and other activities that are necessary to inform project locations, design, and construction					
	Boat ramp for project maintenance					
	Bottom hard substrate					
Construct aquatic habitat	Breakwater for construction					
ponds	Check dam					
	Drain interception canals					
	Earthen berms and hard substrate on berms					

 Table 2: SSMP 10-Year Plan Activity Types and Construction Features

Activity Type	Construction Features (Activity could include all or any combination of these features)					
	Electrical distribution lines to support project components					
	Flood control infrastructure					
	Groundwater monitoring wells and supply wells					
	Habitat islands					
	Operational facilities					
	Public amenities, recreation access					
	Roads					
	Seasonal flooding					
	Snags or other vertical structures					
	Staging areas					
	Swales or channels					
	Vegetation removal (permanent or temporary)					
	Water conveyance and supply system: sedimentation/mixing basins, pipelines, pumps, weirs, and other structures in waterways to divert water					
	Check dam					
	Earthen berms and hard substrate on berms					
	Groundwater monitoring wells and supply wells					
	Operational facilities					
	Public amenities, recreation access					
Construct permanent	Roads					
vegetated wetlands	Staging areas					
	Swales or channels					
	Temporary vegetation removal					
	Water conveyance and supply system: sedimentation/mixing basins, pipelines, pumps, weirs, and other structures in waterways to divert water					
Conduct surface	Furrows					
roughening	Soil binders					
Apply dust suppressants or	Surfactant materials (e.g., organic, mineral, or engineered polymers					
surface stabilizers	Fence					
Install sand fencing	Straw bales					
	Gravel					

Activity Type	<b>Construction Features (Activity could include all or any combination of these features)</b>					
	Geotextile base					
Construct engineered	Agricultural biproducts (e.g., bales, mulch)					
Toughiness	Biocementation					
	Abiotic amendments					
Conduct soil crust	Water conveyance to utilize Salton Sea water					
childheements	Furrows					
	Water conveyance and supply system: sedimentation/mixing basins, pipelines, pumps, weirs, and other structures in waterways to divert water					
	Groundwater wells					
Establish vegetation	Swales and furrows					
	Planting beds (e.g., discing, seeding, agricultural practices to establish vegetation)					
	Earthen berms and hard substrate on berms					
	Groundwater monitoring wells and supply wells					
	Habitat islands					
	Staging areas					
Conduct shallow-water	Vegetation removal					
habitat dust suppression	Water conveyance and supply system: sedimentation/mixing basins, pipelines, pumps, weirs, and other structures in waterways to supply water					
	Earthen berms and hard substrate on berms					
	Groundwater monitoring wells and supply wells					
	Shallow earthen berms					
	Staging areas					
Create shallow flooding areas	Water conveyance and supply system: sedimentation/mixing basins, pipelines, pumps, weirs, and other structures in waterways to supply water					
	Groundwater monitoring wells and supply wells					
	Check dams					
	Compost socks					
Create stormwater	Earthen berms and hard substrate on berms					
spreading areas	Furrows					
	Staging areas					

Activity Type	<b>Construction Features (Activity could include all or any combination of these features)</b>				
	Water conveyance and supply system: sedimentation/mixing basins, pipelines, pumps, weirs, and other structures in waterways to supply water				

**Collect data to support aquatic habitat and dust suppression and restoration projects.** This activity type would support pre-project site suitability activities. Data collection activities would include geotechnical investigations, soil sampling, stream gauge installations, drone flyovers, and other activities. The geotechnical field investigation will investigate the soil and geologic conditions of a site-specific project area to provide recommendations and design criteria for construction. These investigations comprise a site reconnaissance, vane shear tests, hand auger test, Cone Penetration Tests, soil borings, test pits, and embankment tests.

**Aquatic Habitat Ponds.** This activity type would be similar to the Species Conservation Habitat (SCH) project currently being constructed and generally occur near larger river inputs (i.e., New, Alamo and Whitewater Rivers). Site-specific projects could be up to 10,216 acres in size and take approximately 3 to 4 years to complete. Proposed aquatic habitat ponds would provide suitable water quality and physical conditions to support a variety of aquatic habitats. The ponds would incorporate variable water depths between 6 inches to 5 feet and could include the following: mudflats/shallow-water saline habitat, mid-depth habitat, and deep-water habitat. They would incorporate fresh and saline water in amounts that provide salinity ranges to support fish species not able to survive in the increasingly saline Salton Sea. The ponds would have different water depths to provide fish refugia throughout. Desert pupfish habitat and connectivity would be designed into projects where Imperial Irrigation District (IID) and Coachella Valley Water District (CVWD) irrigation drain connectivity and habitat benefits could be achieved, similar to the SCH Project.

Typical operations and maintenance activities would include the following actions:

- Berms will be visually inspected on monthly basis and after rain or earthquake events to detect seepage, cracking, erosion, and extensive burrowing.
- Monitor water via testing and adjustments to ensure desired salinity, residence time, and depth are maintained.
- Maintain project infrastructure including sediment basins, ponds, canals, pumps, weirs, and roadways.

**Permanent Vegetated Wetlands**. This activity type would generally occur near the outlets of irrigation drains, creeks, and rivers and individual projects would be up to 1,000 acres in size. Vegetated wetlands would have a water depth of less than 3 feet. The marshes would use water with less than 20 parts per thousand (ppt) salinity to develop suitable wetland vegetation communities. Hydrology for wetlands could be unmanaged or managed to be seasonally or permanently wet. Construction of terraced wetlands could occur. This activity type consists of building water conveyance structures to spread water and construct berms and channels to

control how water moves through the project site. Construction of these wetlands could also include enhancing the existing herbaceous wetlands as part of the project design, which would avoid and minimize adverse effects associated with temporary dewatering.

Typical operations and maintenance include the following actions:

- Conduct visual monitoring to ensure that habitat parameters are met.
- Maintain vegetation such as removing non-native plant species, and planting or thinning target species.
- Maintain roadways and other project infrastructure.

**Surface Roughening**. This activity type would generally occur in areas with limited readily available water or in areas where temporary techniques are needed prior to implementing a more complex project and individual projects could be up to 2,000 acres in size. For areas in immediate need of control for dust emissions, temporary waterless techniques merit consideration, followed by other more permanent methods described below. Temporary surface roughening has been shown to reduce dust emissions by decreasing wind velocity near the surface. This method consists of building berms and ditches, created by deep tillage perpendicular to the predominant high wind direction. The ridge and furrow pattern can be changed to achieve a target effectiveness. The surface features may require monitoring to ensure desired performance. This method may need to be repeated over time because surface features may degrade, or material may accumulate in roughened areas. Other measures, such as vegetation establishment, can be added to temporary surface roughening to increase its effectiveness.

Typical operations and maintenance include the following actions:

- Conduct visual monitoring to ensure that furrows continue to function.
- Rebuild furrows if their effectiveness declines.

**Dust Suppressants or Surface Stabilizers.** This activity type would generally occur in smaller areas and areas that are either not suitable for other methods, or in tandem with other methods and individual projects would be up to 100 acres in size. Using dust suppressants or surface stabilizers within the dust control areas may be suitable for areas where surface roughening or other methods are not feasible. These products may also be suitable to apply to roadways and construction laydown/staging areas during construction activities.

Typical operations and maintenance include the following actions:

- Conduct visual monitoring to evaluate condition of dust suppressants
- Reapply dust suppressants if they become buried or start to break down.

**Sand Fencing.** This activity type would generally occur in areas with high wind and suitable soils and be measured in linear feet along project boundaries and features or in parallel rows. These projects could be combined with other activity types, and sand fencing projects could be

up to 2,000 acres in size. Sand fences and/or sand fence arrays may be constructed to reduce wind velocity and trap blowing sand. Typically, fences would be placed perpendicular to the prevailing wind direction and supported by sturdy posts. Posts may be made of light wood or other material wired together.

Typical operations and maintenance would include the following actions:

- Replace sand fencing if it becomes buried or degraded.
- Maintain posts and clearing accumulated sand.

**Engineered Roughening.** This activity type would generally occur in areas where water may be limited or as an initial activity to reduce wind-blown dust and protect vegetation establishment individual projects and could be up to 2,000 acres in size. The method of engineered roughness to control wind erosion involves placing large roughness elements of prescribed size and distribution on a surface that is susceptible to dust emissions. The size and spatial distribution of the roughness elements determines the effectiveness of silt and sand control. The roughness elements can be manufactured, or assembled using available agricultural byproduct material, such as straw bales, if it can be processed into large and stable forms.

Typical operations and maintenance would include the following actions:

- Replace engineered roughening features if they become buried.
- Redistribute accumulated sand.

**Gravel and Other Cover.** This activity type would generally occur on a very limited basis and could be up to 100 acres in size. Gravel cover as a dust control measure involves placing a layer of gravel, or gravel with a geotextile base, on emissive exposed lakebed surfaces to protect them from the wind and reduce dust emissions. This dust control method is considered in conjunction with other methods, especially in areas where no other options are feasible because of topography, soil type, and water supply.

Typical operations and maintenance include the following actions:

- Conduct visual monitoring to ensure that the gravel blanket has not been filled with sand particles, eroded by flooding, or filled with flood-borne silt.
- Restore the gravel to the surface with limited disturbance and with measures in place to limit the potential of fine particles becoming airborne.
- Apply additional gravel to the exposed lakebed so that the original blanket performance standard is maintained if the gravel blanket requires maintenance due to in-filling.

**Soil Crust Enhancement.** This activity type would generally occur in areas that have suitable soils for establishing and maintaining the crust and be up to 500 acres in size. Crusts can be formed by biotic or abiotic processes. Crusting or soil aggregation that result from either process can be enhanced by adding amendments, which make the surface more resistant to wind erosion processes.

Typical operations and maintenance include the following actions:

- Conduct visual monitoring to evaluate condition of soil amendments
- Reapply amendments if soil crusts start to break down.

**Vegetation Establishment.** This activity type would generally occur in areas that have an available water source and suitable soils, and individual projects could be up to 2,000 acres in size. Vegetation establishment is a roughness-based dust control method in which plants are used as porous, three-dimensional barriers.

In addition to suitable soils, the amount and salinity of available water to support vegetation will determine the location and types of vegetation included in dust suppression project design. Habitats for consideration include desert scrub habitats that range from very low to low water use and require irrigation every 2 to 5 years and scrub and tree habitats that require more frequent irrigation and would mimic ephemeral to intermittent streams.

Typical operations and maintenance include the following actions:

- Establish a water source.
- Maintain project infrastructure such as roads, swales, water diversion infrastructure and wells.
- Remove non-native species.
- Replant native species.

**Shallow-Water Habitat Dust Suppression.** This activity type is similar to the permanent freshwater wetland activity type except these projects would occur in areas that have a hard pan (a cemented layer in the soil), have the necessary water supply, and be up to 1,000 acres in size. These projects could be located adjacent to existing drainage/irrigation ditches. This activity type would occur in areas around the Salton Sea that currently receive freshwater inflows that support wetlands. Integrated habitat and dust control projects that could enhance an existing wetland would be applied in these areas.

Removal of invasive tamarisk (*Tamarix spp.*) could be a component of this activity type. Control methods for tamarisk include physical removal, controlled burning, and application of herbicide. Herbicide treatments will only be used on an as needed basis to control regrowth of invasive plant species in previously treated areas through spot treatment. Other mechanical means will be used (such as hand pulling or removal with a backhoe) prior to herbicide use to limit herbicide application. Any herbicide application would be targeted at specific non-native species, conducted under the direction of a Pest Control Advisor, and subject to any landowner/land manager restrictions.

Typical operations and maintenance include the following actions:

- Repair water diversion infrastructure.
- Remove non-native plant species.

**Shallow Flooding.** This activity type would generally occur near the outlets of irrigation drains at the north and south ends of the Sea and may vary in size depending on the amount of water available at the project location. Shallow flooding would involve keeping the land surface moist year-round to keep dust emissions at a minimum. The water demand for shallow flooding is approximately 3- to 4-acre feet per year of water to suppress dust from an acre of lakebed. This water would be pulse-flowed in monthly applications between October and June of each year. To apply the shallow flooding control method at the Salton Sea, water use agreements and substantial infrastructure would be needed to supply enough water at specific areas. Water sources could be from irrigations drains, groundwater, or river water.

Typical operations and maintenance include the following actions:

• Remove non-native plant species.

**Stormwater Spreading.** This activity type would generally occur near the outlets of irrigation drains, creeks, washes, and rivers and would be sized depending on how much water is available. Stormwater spreading is a method by which stormwater is spread laterally across the landscape and retained. This method would be used in conjunction with vegetation establishment. At a few locations around the Salton Sea lakebed, the right combination of environmental conditions has yielded natural stormwater spreading events. These conditions consisted of low-velocity stormwater or irrigation drain water intersecting shallow, on-contour wave action berms. The goal of a stormwater spreading project is to mimic this natural process of groundwater recharge and optimize the use of ephemeral surface water runoff.

Typical operations and maintenance include the following actions:

- Repair water diversion infrastructure, berms, and other project features.
- Remove non-native plant species.

# **Program-level construction features**

**Boat ramps.** Boat ramps for maintenance of ponds could be required. This would typically require the following construction methods and equipment: A grader, a scraper to move soil, compactors to compact the base, dump trucks to move soil and pour concrete.

**Bottom hard substrate**. Some activity types could include patches of submerged hard substrate (e.g., riprap, concrete) in certain ponds to increase the amount of cover and attachment sites for sessile or benthic organisms (e.g., benthic macroinvertebrates and algae) that support food for fish. This could include ungrouted rock riprap slope protection (inert). This would be placed by an excavator or other heavy equipment.

**Breakwater for Construction**. A breakwater for construction is a wall made from soil, riprap, or other material that is placed in a location to block against wind or waves and to provide a protected area to construct other features. Breakwaters would be constructed in the wet and placed in water. Breakwaters could be temporary or permanent features. This would typically

require the following construction equipment: heavy equipment such as a tractor with a box grader, a bulldozer, or a motor grader.

**Check dams.** Construction of dams could include a rock ramp and a clay core earthen berm with rock armoring. This would typically require the following construction methods and equipment: clay soil core would be imported and dumped with a truck and placed using a bulldozer or backhoe.

**Compost socks/wattles.** This would typically require the following construction methods and equipment: A trench would be dug by a mechanical trencher and the compost sock would be placed by hand in the trench or at the surface.

**Drain interception canals.** Water from existing irrigation drains that no longer discharge to the Salton Sea could be collected and diverted around ponds or other project features by constructed drain interception canals. Once constructed, new drain interception canals, would provide habitat for desert pupfish and would provide connectivity between the desert pupfish populations within individual agricultural drains. This would typically require the use of a backhoe or excavator depending on the size of the interception canal.

**Earthen berms and hard substrate on berms**. Earthen berms would be constructed to contain water. Berm construction may include reworking exposed lakebed by grading and excavating. Depending on site conditions, berm construction could occur in wetted areas. Berms would be armored with a slope stabilizer such as rip rap to protect the toe and would span an approximate 1- to 2-foot depth at the waterline. This rocky substrate would also provide diverse microhabitat amid the interstitial spaces and hard attachment points for algae or invertebrates. This would typically require the following construction equipment: heavy equipment such as a tractor with a box grader, a bulldozer, or a motor grader.

**Electrical distribution lines.** Electrical distribution lines would be constructed as needed to provide electrical power to project activities. Electrical distribution lines that cross project facilities will be designed in compliance with the current Avian Power Line Interaction Committee (APLIC) standards.

**Flood control.** Flood control features would be constructed as needed for projects near the mouth of the Whitewater River/Coachella Valley Storm Water Channel Delta at the north end of the Sea. An example of a flood control feature would be a flood bypass channel that would pass flood flows from the Whitewater River/Coachella Valley Storm Water Channel into the Salton Sea. Other flood control features could include basins, weirs, and diversions.

**Furrows.** Furrows would be up to 3 feet deep and would typically be constructed using the following construction equipment: a tractor with pull behind implements.

**Groundwater monitoring wells and supply wells.** Groundwater monitoring wells and supply wells would be drilled as necessary to support restoration and dust suppression projects. Groundwater supply wells are a potential water source for restoration projects to supplement the stormwater flows. The amount of well water needed will depend on how much storm flow is

available for vegetation enhancement. Several avoidance and minimization measures will be implemented to monitor groundwater elevations to ensure unintentional dewatering of adjacent aquatic habitats is avoided. These include:

- Vegetation enhancement projects that include a groundwater supply well will also have a monitoring well co-located to monitor groundwater levels.
- Ongoing coordination with IID to facilitate well placement and construction.
- Groundwater wells will not be placed near wetlands or at elevations that would divert water away from wetland areas.
- Groundwater well locations will be provided to the Service as part of the site-specific project packages submitted through the LOP procedures.
- The Adaptive Management and Monitoring Plan (see below) will include a protocol to monitor wetland acreages within and adjacent to project sites to ensure unintentional dewatering of these wetlands is avoided. The well extraction information will be included in the Adaptive Management and Monitoring Plan reporting.

Construction of groundwater wells would typically require the use of a drill rig. The drilling spoils could be left on site or hauled away in a dump truck.

**Habitat Islands.** Habitat islands would be designed as roosting islands or large or small nesting islands. The number and placement of islands would be determined by the aquatic habitat pond size, shape, and depth. Islands would be placed at a distance from shore and at a depth to discourage access by land-based predators such as coyotes and raccoons.

The islands would be constructed by excavating and mounding existing lakebed sediments to create a low-profile embankment approximately 1 to 4 feet above the waterline and covered with appropriate substrate for the targeted species. The islands may also be constructed by mounding sediments to create a tall profile (up to 10 feet) and armored with riprap to create rocky terraces.

An alternative to this island habitat technique could be constructing islands that would float on the aquatic habitat pond's surface, rather than using conventional excavation and placement of lakebed sediment. Floating islands could be made of mats of vegetation or human-made floating objects. Floating islands would also provide cover for fish from bird predators and possible attachment sites for sessile organisms. Experimental concepts to be evaluated would include the size, number, and seasonal placement of islands within the aquatic habitat ponds. This would typically require the following construction equipment: heavy equipment such as graders, bulldozers, dump trucks, and compactors.

**Operational facilities.** A trailer or other temporary structure may be located near the project area and would provide office space for project personnel. Bottled water would be brought in for potable uses, and power would be provided to the facility. A self-contained waste system would be used; no septic tanks or sewerage would be required. Boats and other equipment would be stored at a State-owned facility near the project area and in existing facilities if feasible. This

would typically require the following construction equipment: Trailers would be moved to the site by a truck, a forklift, and a small crane to place them if modular buildings.

**Public amenities, recreation access.** To the extent that public amenities, such as picnic areas and walking trails, do not conflict with the overall purpose and need of the SSMP 10-Year Plan, they would be prioritized in the design of individual projects. Such activities, if determined to be compatible, may include picnicking, hiking, birdwatching, non-powered watercraft use, and hunting.

**Roads/Access.** New roads may be constructed and existing roads may be improved to allow access to identified project sites or to accommodate construction equipment. Roads may also act as water dispersal structures using conveyance channels, pipe culverts, and Arizona crossings. Prefabricated concrete box/arch culvert could be used (or bridge footing/abutment, etc.). This would typically require the following construction equipment: graders, excavators, bulldozers, compactors.

In addition, gates and fencing would be constructed to limit the types of access permitted and/or to limit personnel on site. For example, it may be permissible to allow people to access an area on foot but not in a vehicle and gates and fencing could be built to limit vehicle entry. In addition, some areas may be completely closed, for example due to the landowner's request, and those areas would be completely fenced with gates for access and maintenance only. Signage will be used to inform the public of areas that are open to different types of access.

**Seasonal Flooding.** Seasonal flooding may be used to manage water use at some of the aquatic habitat pond areas. This would be achieved by flooding ponds during the migration and/or nesting season to optimize bird habitat quality, followed by reduced water levels in other seasons designed to keep the surface saturated.

**Snags or other vertical structures.** Snags or other vertical structures could be installed in the ponds to provide roosting or nesting sites. Options for such structures include dead branches or artificial branching structures mounted on power poles. They would be optional pond features, depending on presence of existing snags and roosts, availability of materials, and cost feasibility. This would typically require the use of a tractor, skid steer or backhoe with attachments, cherry picker, auger, and grader.

**Staging areas.** Staging areas would be developed and used as needed to support construction of restoration projects. This would typically require the use of a grader, compactor, and water truck.

**Swales or channels.** Swales or channels could be constructed for aquatic habitat ponds and permanent vegetated wetlands. These features would be excavated through the middle of ponds to the exterior berm (a berm that abuts the Salton Sea) approximately 2 to 4 feet below the surface of the pond bottom and approximately 20 to 150 feet wide. The channels would be sloped toward the exterior berm to be self-draining if a pond's water level were lowered or the pond were emptied for emergency purposes. The width of the swales may be larger depending on soil conditions and the need to prevent sloughing of soil into the channel during pond operation. The swales or channels would create variable depths to enhance habitat diversity and would

provide connectivity along a depth gradient from shallower habitat to deeper areas toward the Salton Sea. Swales could be created along the sides of the aquatic habitat pond as a result of excavation and construction of berms. Swales and channels would also be constructed for permanent vegetated wetlands and vegetation enhancement projects. Swales could be constructed on the downslope playa to disperse water. This would typically require the use of graders, bulldozer, excavator, and tractor with pull behind implements.

Vegetation removal. Vegetation would be removed, where necessary, to install project infrastructure (e.g., pipelines, ponds, access roads, etc.) and non-native invasive species will be removed to increase water availability for projects. Non-native vegetation removal could include physical removal and herbicide application. Herbicide treatments would only be used on an as needed basis to control regrowth of invasive plant species in previously treated areas through spot treatment. Other mechanical means would be used (such as hand pulling or removal with a backhoe) prior to herbicide use to limit herbicide application. Any herbicide application would be targeted to specific non-native species, conducted under the direction of a Pest Control Advisor, and subject to any landowner restrictions. Tamarisk is a non-native shrub that can invade areas and consumes large amounts of the available water. Control methods for tamarisk could include physical removal, primarily by cutting stems at or near ground level, and application of herbicide, typically by painting the cut surface with concentrated herbicide. Removal of tamarisk would stabilize, preserve, and enhance (where feasible) native emergent wetland and brine pool habitat on the exposed lakebed and make surplus water available for additional vegetation. Removal could be done by hand or with excavators and masticators. Spraying could be done with a tractor or quad and a pull behind tank.

Water conveyance and supply system: sedimentation/mixing basins, pipelines, pumps, weirs, and other structures in waterways to divert water. The water conveyance and supply system would be designed and operated to supply projects with water from a variety of sources including irrigation drains; the New, Alamo, and Whitewater Rivers; groundwater wells; ephemeral streams; water agreements; and the Salton Sea to create suitable water quality conditions. The water conveyance and supply system would consist of a series of outlets from the rivers and irrigation drains to sedimentation/mixing basins located along the edges of the lakeshore adjacent to the rivers.

Water from the Salton Sea would be blended with river water to manage salinity and selenium concentrations (where applicable) in sedimentation/mixing basins, and the resulting brackish water would be used for the water-reliant projects. The sedimentation/mixing basins would also provide fish and bird habitat. Retention basins could also be constructed with the use of gabions or other methods. Inflow and outflow structures are included in the water conveyance and supply system. Water dispersal structures on the downslope playa could be constructed, including swales, stabilization of existing beach berms, check dams, and weirs and bunds (embankment or dike).

Water infrastructure (pumps, weirs, pipelines) would be constructed in or near water sources, and additional projects would be constructed moving downslope as the Salton Sea recedes. The water conveyance and supply systems would be built as Applicant develops additional projects and

would be constructed concurrently with aquatic habitat and dust suppression projects. As future water-reliant projects are developed, existing water conveyance infrastructure would be extended incrementally to serve those projects.

The conveyance and supply system would consist of a series of channels or pipelines that would distribute water from the sedimentation/mixing basins to the various habitat and water reliant dust suppression projects. The sedimentation/mixing basins likely would be constructed at the highest ground elevation on the exposed lakebed as is practical to facilitate gravity delivery of water through the conveyance and supply system to the habitat and dust suppression projects. Associated power supply and infrastructure, including distribution lines, would be designed and installed to support this system. Construction would typically require the use of an excavator, bulldozer, and grader.

# **Operations, Maintenance, Monitoring, and Management**

Ongoing activities that could affect species or habitat within the action area include operations, maintenance, monitoring, and management of future project features. An adaptive monitoring and management plan will be developed for each program-level project and include planned maintenance, monitoring, and management for each project built consistent with the SSMP 10-Year Plan. Some typical operations and maintenance activities are listed above for each activity type, which will not be included below. The frequency of data collection and project evaluation would be guided by the purpose and need for monitoring. For example, operational triggers such as water supply flow rates would be monitored daily, while status of target resources would be monitored seasonally or annually. An overall data review would be conducted annually to evaluate project status and performance. Standard operations, maintenance, management, and monitoring activities common to each site-specific project are summarized in Table 3 and a full description is included in section 4.3.3 of the BA (Stantec 2022a).

Activity Type	Features
Operations, Maintenance,	Implement a monitoring and management program to collect data necessary to operate the aquatic habitat ponds and permanent vegetated wetlands, evaluate their effectiveness, address key uncertainties about habitat function, and assess status of threats
Monitoring, and Management	Implement a monitoring program to evaluate performance effectiveness of dust suppression projects to meet air quality regulations
	Monitor diversion(s) structures
	Inspect and repair construction features as needed

Table 3: SSMP 10-Year Plan Standar	d Operations, Maintenance,	Management, and Monitoring Activities
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Remove sediment as needed
Maintain facilities
Address potential for biological fouling at pipes and pumps in maintenance plans
Monitor and control invasive vegetation
Repair storm water and erosion damage
Controlled burns to manage permanent vegetated wetlands to support Yuma Ridgway's rail habitat management

# **Conservation Measures (CM)**

The following are avoidance and minimization measures, specifically for biological resources, that will apply to all authorized activities within the action area. The Applicant is responsible for implementing all of these conservation measures. The Corps will ensure that these measures are implemented through issuance of LOP procedures that contain a mitigation checklist. In addition, right-of-way agreements developed by the Federal action agencies may require additional measures to protect species, particularly on lands owned or managed by cooperating agencies that will enforce compliance through those agreements.

Specific conservation measures below may require the Service to review and approve. The Service will have 30 days to review and approve, as appropriate. The mitigation measures (MM) in parentheses after the CM number refers to the same measure that is included in the SSMP 10-Year Plan Environmental Assessment (Stantec 2022b).

- CM 1 Prepare and Implement a Habitat Protection, Mitigation, and Restoration Program. (MM BIO-1 and MM BIO-9): Plan preparation will be complete prior to commencement of construction of each project-level activity. The restoration program will address the following considerations:
  - a. Avoidance of sensitive and riparian habitats to the greatest extent feasible, including avoidance of disturbances in or near these habitats during the bird breeding season, typically February through September.
  - b. Avoidance of managed wetland areas that support native plant species and/or open water habitat.
  - c. Quantifying maximum area of naturally occurring plant communities that could be temporarily and permanently removed for construction of project-level facilities, by plant community.

- d. Restoration at a minimum ratio of 1:1 for non-native plant communities (i.e., tamarisk woodland or scrub) and 3:1 for native plant communities temporarily removed during project-level construction, or as required in site-specific project permits. Replacement of native plant communities will be provided through habitat creation and/or habitat enhancement. Habitats restored at 1:1 will be preferentially restored where they were removed, unless it is infeasible, or a more desirable off-site location is identified. Species to be used in restoration may include either native species that were removed or that occur or occurred naturally in the project area and are suitable to the site. If native species are used to replace non-native species, mitigation ratios can be reduced, but not below 1:1. For restoration of tamarisk temporarily removed, natural colonization of the disturbed area is likely to occur, and no planting may be needed. The area would still be monitored to document restoration. Permanently removed riparian habitat within aquatic habitat pond areas will be replaced by aquatic habitat of equal surface area with a similar or greater ecological value, as determined by agency permits and project-specific goals.
- e. Identification of locations for on- and off-site restoration, including funding for land purchases and/or easements and agreements with property owners to complete the restoration.
- f. Use of only local native seed (or propagule) sources for native species used in restoration.
- g. Details on propagation, planting/seeding, irrigation, maintenance (including weed control for species that could interfere with restoration), site access, remedial measures, monitoring, reporting, and photo-documentation will be provided. These details will be specific to each project-specific site if more than one planting area or type is addressed in the plan.
- h. Performance criteria will be developed and met for each habitat type being restored.
- i. Monitoring, with a funding source, until performance criteria are met, which may be for a minimum of 5 years.
- j. Remedial measures if performance criteria are not met within specified timeframes and either an adaptive management plan for the program.
- k. If surfactants are applied prepare a surfactant application plan that identifies application measures and locations that reduce and avoid effects prior to ground-disturbing activities.
- 1. Specifications for ensuring that all equipment, personal gear, and materials brought to the site will be clean and free of invasive plants (including seeds) and animals will be included in all construction and maintenance contracts. Equipment, gear, and other materials will be inspected to verify that it is clean.

- CM 2 <u>Selenium monitoring (MM BIO-2)</u>: Targeted monitoring will be conducted, based on established protocols, of herbaceous wetland habitats where irrigation drain water has been used to enhance or expand the existing wetlands to ensure selenium levels are not resulting in adverse effects on wildlife. If monitoring indicates that selenium levels would adversely affect listed species, adaptive management measures will be considered, such as different water sources, to maintain acceptable selenium levels.
- CM 3 Prepare and implement a desert pupfish protection and relocation plan. (Part of MM BIO-4): This plan will be submitted to CDFW and the Service for review and approval prior to any ground-disturbing activities that have a water component, unless CDFW and the Service concur that a plan is not needed. This plan will meet state and federal requirements. This plan will provide:
  - a. Protocols for pre-construction or pre-maintenance surveys to assess species presence and spawning within or immediately adjacent to work areas (e.g., in, or at the end of, the irrigation drains/drain canals, along the shoreline, and around the pond margins for maintenance). The protocols will also outline the qualifications required for biologists to conduct desert pupfish survey, capture, and relocation activities and the process for biologist approval.
  - b. Capture (e.g., trapping in the irrigation drains for construction and maintenance; or trapping, dip netting, and seining in ponds that are drained or if the water level is dropped) and transport methods to minimize handling and stress as well as exposure to heat, low dissolved oxygen (DO), and crowding.
  - c. Identification of locations for release of captured desert pupfish.
  - d. Timing windows when construction or maintenance in shallow shoreline areas and in the irrigation drain mouths/canals may be conducted with minimal effects on desert pupfish spawning.
  - e. Protocols for maintenance activities during construction in the drain interception canals, such as a rotating schedule to ensure only a portion of the canal is maintained at one time, clearing only part of the vegetation at one time, and timing of maintenance to avoid peak spawning.
  - f. The location of saline water intakes will be provided to a CDFW specialist to determine if there is the potential for desert pupfish to occur at that location based on salinity threshold for the species. If a potential exists for desert pupfish to occur, the intake will be screened and a maintenance protocol for the 1/8-inch mesh screen on the saline water intake will be developed and implemented until that location no longer supports the species.
  - g. Adaptive management procedures that include assessment of mitigation measure effectiveness, development of revised measures to improve effectiveness, and similar assessment of revised measures to verify effectiveness.

- h. Assessment of habitat value and suitability, including dissolved oxygen, salinity, and other parameters.
- **CM 4** <u>Prepare and implement a desert pupfish inoculation plan (Part of MM BIO-4)</u>: This plan will be prepared and implemented if desert pupfish do not naturally repopulate the aquatic habitat ponds where suitable habitat for this species is present 1 year after ponds are filled with water. This plan will be submitted to CDFW and the Service for review and approval prior to any ground-disturbing activities. This plan will include, at a minimum:
  - a. A list of criteria to evaluate whether ponds will support desert pupfish (e.g., water quality targets, food resources, habitat features [e.g., percent cover of wigeon grass (*Ruppia maritima*)], etc.).
  - b. Identification of possible desert pupfish source population(s) and quantity of fish collected from each source population.
  - c. Capture and transport methods to minimize handling and stress as well as exposure to heat, low DO, and crowding.
  - d. Desert pupfish population assessment protocol to evaluate population trends in ponds over time.
  - e. Annual reporting requirements, to be combined with annual reporting for other biological elements of the project.
  - f. A contingency plan should the ponds not support viable populations of desert pupfish.
- CM 5 Prepare and implement a project-level western yellow-billed cuckoo, southwestern willow flycatcher, and least Bell's Vireo management and survey plan. (Part of MM BIO-6): This plan will be submitted to CDFW and the Service for review and approval prior to any ground disturbing activities and will cover the species discussed below. All activities will be conducted in accordance with CDFW and Service permits and regulatory guidance. At a minimum, this plan will include:
  - a. A description of the process for conducting preconstruction (or premaintenance) focused surveys for western yellow-billed cuckoo, southwestern willow flycatcher, and least Bell's vireo where project-level features are within or immediately adjacent to suitable riparian habitat. Surveys will be conducted using current Service protocols and/or methods approved by the CDFW in coordination with the Service.
  - b. A list of avoidance and minimization measures. If any of these species or any other special-status bird species are detected within 500 feet of planned construction or maintenance activity locations, work within that 500-foot buffer

will be rescheduled for after the breeding season. If work cannot be rescheduled for outside of the breeding season, an approved biological monitor (see note 1) will be present to avoid adverse effects to these species. Additional avoidance and minimization measures may be developed and implemented if the biological monitor observes that effects are still occurring.

- c. Annual reporting requirements, to be combined with annual reporting for other biological elements of the project.
- CM 6 Prepare and implement a project-level Yuma Ridgway's rail management and survey plan. (Part of MM BIO-6): This plan will be submitted to CDFW and the Service for review and approval prior to any ground disturbing activities. All activities will be conducted in accordance with CDFW and Service permits and regulatory guidance. At a minimum, this plan will include:
  - a. A description of requirements for preconstruction (or pre-maintenance) focused surveys for Yuma Ridgway's rail to be conducted where project-level features are within or immediately adjacent to marsh habitat. Surveys will be conducted using current Service protocols and/or methods approved by the CDFW in coordination with the Service.
  - b. A list of avoidance and minimization measures for breeding season and nonbreeding season.
    - i. Breeding Season: If Yuma Ridgway's rails are detected within 500 feet of planned construction or maintenance activity locations, work within that 500-foot buffer will be rescheduled for after the breeding season. All habitat occupied will be avoided from February 16 to September 30 to ensure birds can fledge and find adjacent habitat.
    - ii. Non-breeding Season: Work being conducted outside the breeding season within that 500-foot buffer will have an approved biological monitor present to avoid adverse effects to this species. Additional avoidance and minimization measures may be developed and implemented if the biological monitor observes that effects are still occurring to non-breeding individuals.

- Two or more years of focused experience with a range of bird species in Southern California performing nesting riparian/marsh bird surveys or monitoring nests.
- Experience working on substantial multi-season bird projects, or the equivalent, performing surveys, habitat assessments, etc. in the field, preferably in California deserts.

<sup>&</sup>lt;sup>1</sup> An approved biological monitor is defined as a wildlife biologist who has been approved by the Service and CDFW to conduct protocol-level surveys and monitoring for the federal- or state-listed bird species, prior to conducting any surveys or monitoring. A biological monitor may possess a valid Section 10(a)(1)(A) permit or have either of the following:

Qualifications will be provided to the appropriate regulatory agency prior to commencing surveys or monitoring.

- c. A seasonal restriction to ensure any project specific activity with potential to alter water levels in adjacent marsh habitats (see CM BIO-7) will not occur between February 16 and September 30 to ensure birds of all life stages can successfully relocate to nearby marsh habitat.
- d. Annual reporting requirements, to be combined with annual reporting for other biological elements of the project.
- CM 7 Design interception canals to minimize alteration of water levels in adjacent marshes (MM BIO-8): Design of the interception canals will balance local surface and subsurface water movement so that the amount of water in adjacent marshes is not substantively affected, to the extent feasible. Individual project-level design plans will be submitted to CDFW and the Service for review and approval to minimize the alteration or loss of adjacent marsh habitat.
- CM 8 Prepare and implement an Adaptive Management and Monitoring Plan: An Adaptive Management and Monitoring Plan (AMMP) will be prepared for each site-specific project that is implemented under the SSMP 10-Year Plan and covered under this biological opinion. The AMMP will provide information on desert pupfish and Yuma Ridgway's Rail relative abundance, distribution, and habitat acres. The AMMP will identify triggers, performance measures, and threat indicators (e.g., abundance and effects of non-native fish species) to provide recommendations to the SSMP 10-Year Plan project managers for maintaining or adjusting operations to ensure species persistence in the site-specific project areas as identified in Figure 1. The plan will be submitted to the Service for review, comment, and approval prior to the completion of each site-specific project that requires an AMMP.
- CM 9 <u>Herbicide and pesticide treatments</u>. Herbicide and pesticide treatments will be conducted under the direction of a Pest Control Advisor and subject to landowner/land manager restrictions. Where herbicide and/or pesticide treatments are necessary, all manufactures guidelines will be followed and the minimum amount of herbicide or pesticide necessary will be used. The licensed Pest Control Advisor will follow recommendations for all California restrictions, including wind speed, rainfall, temperature inversion, and ground moisture for each herbicide and pesticide used. In addition, herbicides and pesticides will not be applied when rain is forecast to occur within 24 hours, or during a rain event or other adverse weather conditions. Herbicides and pesticides will not be applied in habitat that is currently occupied by Yuma Ridgway's Rail or be used in aquatic habitats occupied by desert pupfish. Any herbicide and pesticide use will be described, prior to use, in the desert pupfish protection and relocation plan (CM 3) and the Yuma Ridgway's Rail Management and Survey Plan (CM 6) as appropriate and recommended buffers identified to prevent herbicides and pesticides from entering occupied habitat.

# **Action Area**

Regulations implementing the Act (50 CFR § 402.02) describe the action area as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.

The action area (Figure 1) includes approximately 63,000 acres around the Salton Sea within exposed lakebed areas located below an elevation of -241.2 feet msl. Projects would be located within, along, and adjacent to the Salton Sea, within or near the cities or towns of Mecca, Desert Shores, Salton City, Westmorland, Calipatria, and Bombay Beach in Imperial and Riverside Counties, California. The action area also includes the potential sources of desert pupfish populations for the initial and ongoing stocking of aquatic habitat ponds (if necessary). These populations would include Tier 1 populations, that is, those naturally occurring in the Salton Sea basin, associated with irrigation drains and shoreline pools, as well as those in Salt Creek, San Felipe Creek, Hot Mineral Spa Wash (located just south of Bombay Beach).

# ANALYTICAL FRAMEWORK FOR THE SECTION 7(A)(2) DETERMINATIONS

# **Jeopardy Determination**

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which are all consequences to listed species caused by the proposed action that are reasonably certain to occur; and (4) the Cumulative Effects, which evaluate the effects of future, non-Federal activities in the action area on the species.

For the section 7(a)(2) determination regarding jeopardizing the continued existence of the species, the Service begins by evaluating the effects of the proposed Federal action and the cumulative effects. The Service then examines those effects against the current status of the species to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of the species in the wild.

# STATUS OF THE SPECIES AND ITS CRITICAL HABITAT

# **Desert Pupfish**

The desert pupfish, listed as endangered in 1986, is a small fish, less than 3 inches long, belonging to the Cyprinodontidae family of fishes (Moyle 2002). The desert pupfish has a tolerance for high temperatures, high salinities, and low dissolved oxygen concentrations that exceed the levels known for other freshwater fish (Service 1993). Although desert pupfish are extremely hardy in many respects, they prefer quiet water with aquatic vegetation (Schoenherr 1992), and they are vulnerable to competition or predation and can be displaced by non-native fish (Martin and Saiki 2009). Habitats include clear, shallow waters with soft substrates associated with cienegas, springs, streams, margins of larger lakes and rivers, shoreline pools, and irrigation drains and ditches.

The Service designated critical habitat in 1986 along portions of San Felipe Creek and two of its tributaries, Carrizo Wash and Fish Creek Wash, in Imperial County, California (Service 1986). The areas designated as critical habitat, about 770 acres, include approximately 11 miles along San Felipe Creek and all its tributaries and a riparian buffer zone of 100 feet on both sides of the stream channel. Designated critical habitat for desert pupfish does not occur in the action area.

Refer to our desert pupfish 5-year review for more specific information on the species description, habitat affinities, life history, status and distribution, threats, and conservation needs across its current range (Service 2010).

## Reproduction

Desert pupfish reproduce in open water habitats that contain quiet, shallow water and patches of vegetation and suitable substrates. Although they can breed year-round depending on water temperatures, they typically breed from April to October, increasing their population numbers during summer months through an influx of juveniles (Schoenherr 1988). During this period males establish, actively patrol, and defend individual territories that are typically in water less than 3.2 feet deep. Females lay from 1 to 4 eggs at a time and from 50 to 800 eggs during a season on algal mats in sandy or muddy substrates (Schoenherr 1988). Desert pupfish can complete their life cycle within a year and have a lifespan of 1 to 3 years in the wild (Moyle 2002).

## Numbers

Desert pupfish populations experience significant temporal and spatial fluctuations in distribution and abundance (Varela-Romero *et al.* 2002). The desert pupfish appears to go through cycles of expansion and contraction in response to the amount of open water habitat available (Weedman and Young 1997, Service 2010). In very wet years, populations can rapidly expand into new areas (Hendrickson and Varela-Romero 1989). Yearly numbers can fluctuate widely based on water quality and quantity. For example, minnow trap surveys conducted in June along the same reach of Salt Creek by staff from CDFW using the same protocol resulted in 261 individuals in 2020 and 2,833 individuals in 2021 (Keeney 2021, 2022), the increase was

likely a response to the increase in the quantity of water in Salt Creek. Conditions affecting desert pupfish numbers also include presence and abundance of non-native fauna, including, but not limited to, mosquitofish (*Gambusia affinis*), sailfin mollies (*Poecilia latipinna*), crayfish (Order *Decapoda*), red rimmed melania (*Melanoides tuberculate*), and spiny softshell turtles (*Apolone spinifera*).

## Distribution

This species was once widely distributed and abundant in the U.S and Mexico in the Lower Colorado River system and its tributaries in Arizona, California, Sonora, and Baja California. It occurred in backwaters along the lower Colorado, Gila, San Pedro, and Sonoyta Rivers and in springs, streams, and seeps within the Salton Sink (Varela-Romero *et al.* 2003) but has since been extirpated from much of its original range (Varela-Romero *et al.* 2002; Loftis *et al.* 2009). Its current distribution in California is limited to three natural streams, ephemeral Salton Sea shoreline and nearshore pools, marinas, IID and CVWD irrigation drains, and 14 artificial refuge ponds (Keeney 2022). In Arizona, no natural populations remain but the species occurs in reestablished populations in constructed wetlands, however the status of the reestablished populations is unknown (Service 2010). In Mexico, the species occurs in three localities within its historical range.

# Recovery

The Service finalized the desert pupfish recovery plan in 1993. A three-tiered approach was developed to (1) maintain the genetic diversity in remaining, naturally occurring wild desert pupfish populations (i.e., Tier 1), (2) establish second tier populations from wild stock where individuals could be exchanged to maintain genetic variability, and (3) establish third tier populations in "quasi-natural" refuges to ensure the long-term persistence of desert pupfish (Service 1993).

The objectives of the recovery plan are to preserve extant naturally occurring populations, establish additional populations in protected habitats within the probable historical range, and describe actions necessary to eliminate threats to extant populations to downlist the species to threatened status; delisting the species is not considered feasible in the foreseeable future because of insoluble threats and limited habitat (Service 1993). To attain these objectives, the following actions are necessary: protect natural populations (Tier 1), reestablish new populations (Tier 2), establish and maintain refugia populations (Tier 3), develop protocols for the exchange of genetic material between stocked desert pupfish populations, determine factors affecting population persistence, and develop information and education to foster recovery efforts (Service 1993).

Collectively, there are 11 extant Tier 1 populations of desert pupfish known in the wild in the U.S. and Mexico; five in California, one in Arizona, and five in Mexico. Although many reintroductions have been attempted, approximately 16 transplanted Tier 2 populations exist in the wild at present, all in Arizona. There is a total of 46 captive or refuge desert pupfish populations (that do not qualify for the Tier 3 category), comprised of 27 in Arizona, 14 in California, and

four in Sonora, Mexico. The range wide status of desert pupfish is poor but stable (i.e., not declining). The fate of the species depends heavily upon future developments in water management of the Salton Sea and Santa de Clara Cienega in Mexico (Service 2010).

Much of the research on desert pupfish since the 1993 recovery plan addresses genetics issues, the taxonomy of the *C. macularius* group, and effects of selenium in the aquatic habitat. Since the isolated nature of desert pupfish populations reduces the flow of genes between sites, inbreeding and genetic drift can be reasonably expected to occur without intervention (Turner 1983, Echelle *et al.* 2007, Koike *et al.* 2008, Loftis *et al.* 2009). More information on the recovery of desert pupfish can be found in our desert pupfish 5-year review (Service 2010) and recovery plan (Service 1993).

# Summary

Desert pupfish need open water habitats that contain quiet, shallow water and patches of vegetation and suitable substrates to successfully reproduce and find food and shelter. Threats continue to adversely affect the species across the range and numbers of individuals fluctuate based on habitat conditions and presence and abundance of non-native aquatic species. The Service's goal to recover and delist the desert pupfish is challenged by several factors but protecting habitats within the probable historical range is the primary impediments to achieve recovery of this species since most Tier 1 habitats are dependent on uncertain future water availability.

# Yuma Ridgway's Rail

The following summarizes information about the Yuma Ridgway's rail that was discussed in detail in the Service's Desert Renewable Energy Conservation Plan Biological Opinion (Service 2016). Please also refer to the draft recovery plan (Service 2009) and our 5-year review (Service 2006) for additional detailed information about the species' description, life history, and habitat affinities. Critical habitat for Yuma Ridgway's rail has not been designated.

The Service listed the Yuma Ridgway's rail as endangered in 1967 (32 FR 4001) under the Endangered Species Preservation Act of 1966, a precursor to the 1973 Act. Since that time, Chesser *et al.* (2014) revised the check-list of North American birds to replace *Rallus longirostris* (clapper rail) with *R. obsoletus* (Ridgway's rail). This revision of the name of the species did not affect the taxon with regard to its listing status as endangered. The species is only listed in the U.S. although the majority of the population is found in Mexico. The species' recovery priority number is 6, which indicates a subspecies with a high degree of threat and low recovery potential from loss of habitat due to lack of natural river processes that create and maintain emergent wetlands, and lack of security relative to the protection of existing habitats in the U.S. and Mexico. The rivers that historically supported emergent wetland habitats have been altered by dams and water diversions, which have altered hydrological regimes that supported emergent wetland development resulting in a reduction of Yuma Ridgway's rail habitat along these rivers.

The emergent wetlands, or marshes, in the Salton Sea watershed, one of three major core areas, comprise a substantial portion of habitat for the species' range in the southwestern U.S. These wetland habitats are managed by Federal (SSSBNWR), State (CDFW), and local (IID) resource agencies and are sustained by direct deliveries of water from the Colorado River. As the Salton Sea has receded, several acres of unmanaged marshes have developed that are sustained by water that is discharged from agricultural fields (irrigation drain water), which has drained onto the exposed dry Salton Sea playa. The management of Yuma Ridgway's rail wetland habitat is complicated by increasingly limited availability of freshwater sources and risks posed by potentially harmful concentrations of selenium found in irrigation drain water that can accumulate within the Yuma Ridgway's rail's food sources (Ricca *et al.* 2022). Additional emerging threats include collision with structures associated with utility-scale renewable energy projects.

#### **Reproduction, Numbers, and Distribution**

## Reproduction

Yuma Ridgway's rail breeding activity begins in February with nesting beginning in March, peaking in mid-May on the lower Colorado River (Eddleman 1989). The breeding season is protracted with chicks fledging from May to August (Harrity and Conway 2017). Because rails nest in dense marsh vegetation, documentation of reproduction and quantification of reproductive rates is difficult and no data exist to determine whether these rates are increasing, decreasing, or remain constant. Selenium toxicity can affect reproduction and there is some evidence to suggest that high selenium exposure rates adversely affect reproduction in populations occurring along the Colorado River (Rusk 1991), but we lack data to determine if selenium exposure rates within the range of Yuma Ridgway's rail are leading to a decline in reproduction across the range or within populations.

#### Numbers

The numbers of individual birds detected in areas surveyed using the Standardized North American Marsh Bird Monitoring Protocol (Conway 2011) are shown in Table 4 below. The numbers are not an average or a statistical representation of the population, and totals only offer a rough estimate of the individuals that occupy the survey areas. Therefore, these numbers do not represent population growth rates (i.e., an increase or decrease in the number of individuals in a population) but can be used to: (1) document presence or distribution of birds within a defined area; (2) estimate or compare density among management units, wetlands, or regions; (3) estimate individual number trends among management units; (4) evaluate effects of management actions; and (5) document habitat types or wetland conditions that influence abundance or occupancy. Declines in the number of individual birds detected at the Imperial Wildlife Area are likely due to a lack of funding to purchase water and other resources necessary to maintain and manage breeding habitat (Riesz 2015). In general, Yuma Ridgway's rail numbers fluctuate based on water levels, salinity, prey availability, and amount of emergent plant cover in marsh areas (Conway 2011).

LOCATION	SURVEY YEAR												
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	*2020	*2021
Topock Marsh	45	42	42	33	26	40	45	3	36	NS	66	5	44
Topock Gorge	57	59	76	54	62	82	109	70	81	54	63	NS	51
Beal Lake			NS	2	0	3	1	4	2	9	13	NS	
Bill Williams River NWR	11	17	15	11	11	9	7	7	13	NS	13	NS	19
Cibola NWR	34	6	45	20	25	13	42	60	72	97	108	60	67
Imperial Division	26	17	8	17	20	1	67	48	39	25		NS	
Imperial NWR	43	23	34	16	30	29	49	40	46	46	56	57	17
Laguna Division	106	90	96	65	58	37	96	147	132	113	168	150	71
Yuma Division	1	3	1	0	2	1	0	0	0	1	0	NS	
Yuma East Wetlands CA	3	5	5	4	3	6	2	9	5	5	4	NS	4
Lower Gila River	24	20	18	13	11	13	22	26	13	9	22		
Phoenix Area	28	15	16	6	17	9	24	15	18	10	31	7	11
**Imperial Wildlife Area	191	132	111	101	57	67	59	56	106	97	91	NS	
**Sonny Bono NWR	96	135	84	72	90	75	65	39	86	197	136	62	65
Southern Nevada	6	6	6	4	13	13	1	9	20	30	14	NS	20
**IID Managed Marsh Area							14	21	71	64	54	82	
U.S. Total	671	570	565	432	432	409	623	555	740	764	839	423	298

Table 4: Yuma Ridgway's Rail Marsh Bird Monitoring Data 2009-2021 (numbers below the dates are the number of individual birds detected during the survey season)

\*Reduced survey effort due to the Covid 19 Pandemic

\*\*Locations that are in the action area

Hinojosa-Huerta *et al.* (2013) conducted surveys for the Yuma Ridgway's rail in the Cienega de Santa Clara and other wetlands in Mexico in 2010 and 2011. Based on the amount of available habitat (approximately 22.4 square miles), they used a probability of detection model to estimate that between 7,714 to 9,686 individual birds resided in the area. Although the birds in Mexico are not legally protected, based on recent migration and dispersal research (Harrity and Conway 2021) some of these individuals likely migrated into the U.S. population.

# Distribution

Yuma Ridgway's rail was originally restricted to the cattail-bulrush marshes of the Colorado River Delta in Mexico, encompassing 3,000 square miles (1,920,000 acres) of freshwater and brackish wetlands (Warrick 2002). Construction of multiple large dams along the Colorado River in the early and mid-20th century resulted in dewatering of the Delta and the loss of habitat. Currently, the Yuma Ridgway's rail occupies patches of emergent marsh within the Lower Colorado River, Lower Gila River, tributaries to these rivers, areas adjacent to the Salton Sea, and the Cienega de Santa Clara in Mexico (Service 2009). The most recent estimate of potentially suitable Yuma Ridgway's rail habitat on the Lower Colorado River is 9,041 acres with 4,457 acres of that on four National Wildlife Refuges (Havasu, Bill Williams River, Cibola, and Imperial) (Service 2009). In the southern end of the Salton Sea Basin, approximately 2,000 acres occurs within managed marshes on the SBSSNWR, Imperial Wildlife Area, and IID's created marshes (Ricca *et al.* 2022). The amount of habitat on the Lower Gila River from the Phoenix metropolitan area to the confluence with the Lower Colorado River is unknown, as is the amount of habitat upstream of Lake Mead. However, neither of these sites contains large amounts of habitat (Service 2009).

The Cienega de Santa Clara marshes support most of the global population (Hinojosa-Huerta *et al.* 2013). However, this marsh complex is threatened by a variety of factors, including a lack of marsh-rejuvenating flood flows along the Colorado River, water diversion, and a large-scale water-recycling/desalinization project proposal in Arizona that would release hypersaline brine into the marsh, replacing brackish irrigation runoff (Service 2006, Service 2009, Hinojosa-Huerta *et al.* 2008).

Home ranges for Yuma Ridgway's rail vary by season. Home ranges are generally smallest during the early and late breeding seasons (March through July) at 17- 20 acres and largest in the post breeding season (August through October) at 37 acres and late winter (January through February) at 59 acres (Conway et al. 1993).

## Recovery

To achieve recovery, the Yuma Ridgway's rail must reach and maintain a viable population level (a minimum of 824 individuals in the U.S. for at least 5 consecutive years) and have sufficient protected and managed marsh habitat to provide for long-term persistence of populations in the three major core areas (Lower Colorado River, Salton Sea, and Cienega de Santa Clara) and movement corridors (Service 2009). The focus of the recovery strategy is: (1) providing long-term management and protection for enough core and other habitats to support viable populations of rails, (2) effective monitoring of populations and habitats, (3) identifying and funding research to provide effective conservation and recovery, and (4) application of research results and monitoring through adaptive management to ensure recovery goals are met (Service 2009).

Currently, monitoring of Yuma Ridgway's rail populations indicate that presence or distribution of birds within a defined area has been consistent since 2009 (Table 4), but we cannot quantify

whether the U.S. supports 824 individuals since not every individual bird that occupies a survey site will be detected (Conway 2011). Challenges to recovery include protecting and managing enough marsh habitat to provide for long-term persistence of populations.

# Summary

The Service's goal to recover and delist the Yuma Ridgway's rail is challenged by several factors but loss of habitat that supports resource needs is one of the primary impediments to achieve recovery of this species (Service 2009). Threats continue to adversely affect the species across the range, numbers of individuals fluctuate based on habitat conditions, and habitat conditions are dependent on uncertain future water deliveries.

# **Environmental Baseline**

The regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR § 402.02).

As described above, the action area includes approximately 63,000 acres around the Salton Sea within exposed lakebed areas located below an elevation of -241.2 feet msl (2003 shoreline elevation). SSMP 10-Year Plan site-specific projects would be located within and adjacent to the Salton Sea. The contemporary Salton Sea is a large (325 square miles) shallow saline lake formed by an accidental and temporary diversion of Colorado River water in the early 1900s (Walker *et al.* 1961) and is currently maintained largely by irrigation drain water runoff from upstream agricultural fields. The Salton Sea has been shrinking in size as irrigation drain water flows are reduced because of water conservation and other water management actions associated with IID's Water Conservation and Transfer Project (Water Transfer Project). The Water Transfer Project describes water conservation and transfer transactions pursuant to the Agreement for Transfer of Conserved Water that was executed by IID and the San Diego County Water Authority in 1998 and supplemented by the 2003 QSA. Declining irrigation drain water inflows have resulted in higher salinity and more exposed lakebed. Average salinity levels in the Salton Sea in 2020, exceeded 70 ppt, which is too saline to support several species of fish.

Availability of water that sustains habitat for both desert pupfish and Yuma Ridgway's rails in the action area is highly influenced by water discharged from IID and CVWD irrigation drains. Agricultural irrigation discharge is the primary source of surface water due to the low annual rainfall in the region, which averages about 2.6 inches per year. Additionally, three water reclamation plants contribute discharge to the Whitewater River. Currently, most of these
irrigation drains do not reach the Salton Sea and are draining onto the exposed playa surrounding the Salton Sea, creating herbaceous wetlands. We anticipate even less water discharge from these irrigation drains in the future as the BOR implements Colorado River water conservation projects to ensure upstream reservoirs (Lake Mead and Lake Powell) remain viable.

Designated critical habitat does not occur in the action area for either species.

# Past Consultations within the Action Area

Major federal actions that resulted in formal section 7 consultations within the action area adversely affecting the desert pupfish and Yuma Ridgway's rail include the BOR's Voluntary Fish and Wildlife Conservation Measures and Associated Conservation Agreements with the California Water Agencies associated with the Water Transfer Project (Service 2002), which is discussed above; the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP; Service 2008); the Desert Renewable Energy Conservation Plan (DRECP; Service 2016); and the SCH Project (Service 2013 and Service 2020). Table 5 below includes a complete list of the consultations in the action area over the past 20 years and their associated conclusions.

Internal Tracking Number	Project Title	Date Concluded	Species	Biological Conclusion
FWS-IMP-2628.10	Biological Opinion on the Bureau of Reclamation's Voluntary Fish and Wildlife Conservation Measures and Associated Conservation Agreements with the California Water Agencies	12/18/2002	Desert pupfish and Yuma Ridgway's rail	No Jeopardy
81430-2008-F-0022	Varner Harbor Dredging Project	12/17/2007	Desert pupfish	No jeopardy
81430-2008-F-0124	Intra-Service Consultation for Coachella Valley MSHCP	7/3/2008	Desert pupfish and Yuma Ridgway's rail	No jeopardy
81430-2008-F-0927	Salton Sea Shallow Water Habitat Pilot Project	10/7/2008	Desert pupfish	No jeopardy
81430-2010-F-0826	Salton Sea Shallow Water Habitat Pilot Project Closure Amendment	7/16/2010	Desert pupfish	No jeopardy
81430-2010-F-0730	Black Rock 1, 2 and 3 Geothermal Plant BO amendment	7/14/2011	Yuma Ridgway's rail	No jeopardy
08ECAR00-2012-F- 0324	[ERIV] Highway 111 - Salt Creek Bridge Replacement	5/8/2012	Desert pupfish and Yuma Ridgway's rail	No jeopardy
08ECAR00-2013-F- 0058	[IMP] Salton Sea Species Conservation Habitat	3/5/2013	Desert pupfish	No jeopardy

 Table 5: Section 7 Formal Consultations in the Action Area 2000-2022

Internal Tracking Number	Project Title	Date Concluded	Species	Biological Conclusion
08ECAR00-2016-F- 0200	Desert Renewable Energy Conservation Plan - Biological Opinion	8/16/2016	Yuma Ridgway's rail	No jeopardy
08ECAR00-2019-F- 0715	[IMP] Hell's Kitchen Well Pad, Access Road, and Mitigation Site	7/12/2019	Desert pupfish and Yuma Ridgway's rail	No jeopardy
08ECAR00-2013-F- 0058-R001	[IMP] Salton Sea Species Conservation Habitat – Re- initiation	11/20/2020	Desert pupfish and Yuma Ridgway's rail	No jeopardy

The consultation for the Water Transfer Project concluded that implementation of the agreement would not jeopardize the continued existence of the desert pupfish or Yuma Ridgway's rail with implementation of conservation measures and the terms and conditions of that consultation. Measures to reduce adverse effects of the Water Transfer Project on desert pupfish include an evaluation of the baseline selenium concentrations in and near IID irrigation drains, identification of specific trigger selenium concentrations, development of selenium control measures, and maintenance of desert pupfish habitat and connectivity among IID irrigation drains (Service 2002). Most of these measures, except for the evaluation of the baseline selenium concentrations, are not yet complete. Yuma Ridgway's rail measures include creation and management of marsh areas (managed marsh areas) to increase the quantity and quality of Yuma Ridgway's rail habitat within its U.S. range (Service 2002). IID has created about 646 acres of these marsh areas, and they are managed by IID to support Yuma Ridgway's rail and other marsh species (IID 2022a).

The consultation for the CVMSHCP concluded that implementation of the habitat conservation plan would not jeopardize the continued existence of the desert pupfish or Yuma Ridgway's rail. Measures to reduce adverse effects of the CVMSHCP on desert pupfish and Yuma Ridgway's rail include conservation, monitoring, and management of 25 acres of desert pupfish habitat and 66 acres of Yuma Ridgway's rail habitat in designated conservation areas (Service 2008).

The consultation for the DRECP concluded that implementation of the habitat conservation plan would not jeopardize the continued existence of the Yuma Ridgway's rail. Measures to reduce adverse effects of DRECP projects on Yuma Ridgway's rail include avoidance of riparian and wetland vegetation to the maximum extent practicable with specific avoidance buffer zones and restoration or creation of habitat (Service 2016).

The consultation for the SCH Project concluded that implementation of the project would not jeopardize the continued existence of the desert pupfish or Yuma Ridgway's rail. Measures to reduce adverse effects of the SCH Project on desert pupfish include maintaining connectivity between irrigation drains via an interception canal to allow for movement from dewatered or contaminated areas and genetic exchange; and creation, monitoring, and management of approximately 1,703 acres of shallow water habitat (Service 2013). Measures to reduce adverse

to Yuma Ridgway's rail included pre-construction surveys and avoiding dewatering of occupied habitat during breeding season (Service 2020).

# Habitat Characteristics within the Action Area

Prior to 2003, most of the action area was inundated by the Salton Sea. After 2003, when irrigation drain water flows were reduced and the Salton Sea started receding, playa around the Salton Sea became exposed and irrigation drain water began draining onto the dry playa, which resulted in the creation of discrete patches of herbaceous wetlands (1,599 acres total) within the action area—these wetlands are referred to as unmanaged marsh areas. Other habitats or land cover within the action area includes managed wetlands (3,862 acres), open water (53,039 acres), barren lake bottom, i.e., exposed playa (5,969 acres), tamarisk scrub (3,255 acres), chenopod scrub, i.e., native shrubs dominated by iodine bush (*Allenrolfea occidentalis*) (8,741 acres), and disturbed and developed areas (3,332 acres). The action area also includes about 660 acres of lands where dust suppression projects were created by IID to address air quality mitigation requirements associated with the Water Transfer Project (IID 2022b). These areas currently contribute to dust suppression as indicated by regular furrow patterns on the landscape. Some areas have vegetation in and amongst the rows, but vegetative cover is generally very low. Refer to table 4-4 in the BA (Stantec 2022a) for a complete list of land cover and habitats in the action area.

The Salton Sea is listed as an impaired water body due to elements leached and concentrated by agricultural irrigation, with selenium being the most problematic of the elements (Miles *et al.* 2009). While selenium is essential for metabolic function, it is toxic at elevated doses (Ohlendorf 1999). Irrigation water conveyed from the lower Colorado River to the Imperial Valley contained about 2  $\mu$ g Se/L (micrograms of selenium per liter), which increased to 6–28  $\mu$ g Se/L (median, 8  $\mu$ g Se/L) in irrigation drain water primarily due to evapotranspiration by crops (Saiki *et al.* 2012).

# Status of Desert Pupfish within the Action Area

Desert pupfish are known to occur within the action area in the following locations: San Felipe Creek, Salt Creek, and Hot Mineral Spa Wash (South of Bombay Beach) drainages; Whitewater River delta; 62 irrigation drains (below the last drop structure in IID drains); the SCH interception canal; and herbaceous wetlands (unmanaged marsh) downstream of the irrigation drains. Desert pupfish also could be present in furrows; shallow water ponded in Salton Sea shoreline berms; and Salton Sea shallow shoreline areas near river outlets, depending on water quantity and salinity levels. The populations in the rivers, creeks, and irrigation drains are identified as naturally occurring wild desert pupfish, or Tier 1, populations in the recovery plan (Service 1993) and conservation of these areas is essential to achieving desert pupfish recovery goals. Due to the rapidly changing nature of the habitats and Salton Sea shoreline, a precise acreage of desert pupfish habitat cannot be quantified. A map of known occurrence records for desert pupfish is provided in Figure 2.

As mentioned above, one result of the Water Transfer Project is a decrease in the amount of irrigation drain water. This resulted in water reductions to IID and CVWD irrigation drains supporting desert pupfish that historically flowed directly into the Salton Sea – causing a loss of desert pupfish habitat and connectivity via shoreline pools and increases in selenium concentrations in those irrigation drains. To offset adverse effects to desert pupfish from reductions in water and increases in selenium, conservation measures were developed to maintain viable populations of desert pupfish in the action area by maintaining or increasing desert pupfish habitat in IID's irrigation drains relative to current levels (i.e., no net loss of irrigation drain habitat) and maintaining desert pupfish connectivity among irrigation drain populations (Service 2002). However, only one drain interconnection, connecting 10 IID irrigation drains, has recently been achieved via construction of the SCH interception canal (Dorin 2022 pers. comm.).

As mentioned above, irrigation drains contain elevated concentrations of selenium (6–28  $\mu$ g Se/L). Research conducted in irrigation drains within the action area concluded that baseline selenium concentrations may not be sufficiently elevated to adversely affect reproductive success and survival of desert pupfish but that toxic thresholds for selenium in fishes from the Salton Sea remain poorly understood (Saiki *et al.* 2012). Laboratory and field research indicates juvenile and adult desert pupfish can tolerate high levels of selenium exposure (Besser *et al.* 2012). While we cannot quantify whether elevated selenium levels are lowering reproductive rates, desert pupfish continue to occupy IID and CVWD irrigation drains and the playa shallow wetlands downstream of the drains despite being exposed to elevated selenium levels.

Desert pupfish populations in San Felipe Creek, Salt Creek, and Hot Mineral Spa Wash would be potential source populations. The number of fish in these areas vary yearly and seasonally but these areas continue to support populations of desert pupfish (Keeney 2022).

## Status of Yuma Ridgway's Rail in the Action Area

As mentioned above, recovery goals for the Yuma Ridgway's rail include having sufficient protected and managed marsh habitat to provide for long-term persistence of populations in the Salton Sea basin, which is one of three main core areas. The action area includes approximately 3,862 acres of protected and managed marsh habitat near the southern end of the Salton Sea that supports Yuma Ridgway's rail reproduction, numbers, and distribution (Figure 3). These areas are supported by direct deliveries of Colorado River water and are managed for the conservation and recovery of Yuma Ridgway's rail by Federal, State, and local agencies. Management activities include: (1) invasive plant removal, (2) 10-year burn cycles to reduce dense cattail stands and allow for a sediment flush, (3) managing and maintaining 3-8 inches of water per marsh, and (4) soil removal if necessary (Shafique 2022, pers. comm.).

Based on the information provided in the BA, the action area also includes about 1,599 acres of emergent wetland habitat, also referred to as herbaceous wetlands, that occur in discrete patches of shallow wetlands downstream of the IID and CVWD irrigation drains that do not extend out to the Salton Sea. These areas also support Yuma Ridgway's rail reproduction, numbers, and distribution, specifically in areas with sufficient water depths to maintain wetland vegetation

such as cattails (*Typha* spp.). These areas are referred to as unmanaged marsh areas since they are developed because of irrigation drain water flowing on the Salton Sea's dry playa and are not managed.



Figure 2: Desert Pupfish Occurrence in the Action Area



Figure 3: Yuma Ridgway's Rail Occurrence in the Action Area

Based on preliminary selenium risk research conducted by the U.S. Geological Survey (USGS; Yost *et al.* 2021, Ricca *et al.* 2022), these unmanaged marsh areas pose a relatively higher risk from dietary exposure to Yuma Ridgway's rails compared to managed marshes. Currently, we are unable to determine what effects these elevated selenium levels have on reproduction and survival of rails using these marshes. But based on telemetry work, these marshes support breeding, feeding, and sheltering (Yost *et al.* 2021). The USGS is currently conducting a study in the action area to identify the full range of selenium risks to Yuma Ridgway's rails in these unmanaged marsh areas.

Currently, an unknown number of rails occupy both managed (3,862 acres) and unmanaged (1,599 acres) marsh areas and numbers likely fluctuate based on water levels, salinity, prey availability, and amount of emergent plant cover in these marsh areas. Based on Standardized Marsh Bird Surveys (Conway 2011) conducted in 2019, the last year that full surveys were conducted, these areas supported at least 281 individual birds (Table 4).

Based on Yuma Ridgway's rail telemetry studies conducted since 2018, most rails occupy the action area year-round and typically make successful short-distance dispersals (0.12 mile and 1.1 miles, with a mean of 0.5 mile) from one habitat patch to adjacent or nearby habitat (Ricca *et al.* 2022). However, in September of 2020, one individual female migrated approximately 800 miles from the Salton Sea to a mangrove wetland near Los Mochis, Sinaloa, Mexico (Harrity and Conway 2021).

# **EFFECTS OF THE ACTION**

Regulations implementing the Act (50 CFR § 402.02) define the effects of the action as all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR § 402.17).

The regulations for section 7(a)(2) note that "a conclusion of reasonably certain to occur must be based on clear and substantial information, using the best scientific and commercial data available" [50 CFR § 402.17(a)]. When considering whether activities caused by the proposed action (but not part of the proposed action) or activities reviewed under cumulative effects are reasonably certain to occur, we consider factors such as (1) past experiences with activities that have resulted from actions that are similar in scope, nature, and magnitude to the proposed action; (2) existing plans for the activity; and (3) any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

# **Desert Pupfish**

Potential effects on desert pupfish may occur with implementation of the SSMP 10-Year Plan and as the result of multiple construction and operations and maintenance activities described in the proposed action, which are summarized in Table 6. Defining characteristics of each activity type include general location, water sources, and water depth(s), which are also summarized in Table 6. Only those activity types that have water components have been carried forward in the effects analysis since those are where desert pupfish currently occur or have the potential to occur in the future because of site-specific project locations (e.g., near river outlets or irrigation drains).

Activity Type	Construction Features <sup>1</sup>	Construction Effect(s) on Desert Pupfish	O&M Effect(s) on Desert Pupfish	Applicable Conservation Measure(s)
Collect data to support aquatic habitat and dust suppression and restoration projects	Geotechnical investigations, soil sampling, installation of stream gauges, drone flyovers and other activities to support project design	Disrupting habitat	None	CM 3
Create aquatic habitat (ponds) <sup>2</sup>	Groundwater monitoring wells and supply wells	Reducing or disrupting habitat	Reducing or disrupting habitat	CM 1, CM 3, CM 8
Create aquatic habitat (ponds) <sup>2</sup>	Boat ramp for project maintenance	None	None	None
Create aquatic habitat (ponds) <sup>2</sup>	Bottom hard substrate	None	None	None
Create aquatic habitat (ponds) <sup>2</sup>	Breakwater for construction	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals	None	CM 3, CM 4
Create aquatic habitat (ponds) <sup>2</sup>	Check dam (weir)	None	Reducing or disrupting habitat	CM 3, CM 8
Create aquatic habitat (ponds) <sup>2</sup>	Agricultural drain interception canals	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals Beneficial effects: restoring connectivity of isolated agricultural drain populations and habitat expansion	Reducing or disrupting habitat, capturing/relocating individuals, and compounding selenium risk	CM 1, CM 2, CM 3, CM 4

Table 6: Effects to Desert Pupfish from SSMP	<sup>9</sup> 10-Year Plan Site-Specific	Activity Types and Construction	n
Features			

Activity Type	Construction Features <sup>1</sup>	Construction Effect(s) on Desert Pupfish	O&M Effect(s) on Desert Pupfish	Applicable Conservation Measure(s)
Create aquatic habitat (ponds) <sup>2</sup>	Earthen berms and hard substrate on berms	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals	Reducing or disrupting habitat and capturing/relocating individuals.	CM 1, CM 2, CM 3, CM 4
Create aquatic habitat (ponds) <sup>2</sup>	Electrical distribution lines to support project components	None	None	None
Create aquatic habitat (ponds) <sup>2</sup>	Flood control infrastructure	None	None	None
Create aquatic habitat (ponds) <sup>2</sup>	Habitat islands	None	None	None
Create aquatic habitat (ponds) <sup>2</sup>	Operational facilities	None	None	None
Create aquatic habitat (ponds) <sup>2</sup>	Public amenities, recreation access	None	None	None
Create aquatic habitat (ponds) <sup>2</sup>	Roads	None	None	CM 3, CM 4
Create aquatic habitat (ponds) <sup>2</sup>	Seasonal flooding (O&M only)	None	Reducing or disrupting habitat, capturing/relocating individuals, and compounding selenium risk	CM 2, CM 3, CM 4
Create aquatic habitat (ponds) <sup>2</sup>	Snags or other vertical structures	None	None	None
Create aquatic habitat (ponds) <sup>2</sup>	Staging areas	None	None	None
Create aquatic habitat (ponds) <sup>2</sup>	Swales or channels	None	Reducing or disrupting habitat and capturing/relocating individuals	
Create aquatic habitat (ponds) <sup>2</sup>	Vegetation removal (permanent or temporary)	Reducing or disrupting habitat and capturing/relocating individuals	Reducing or disrupting habitat and capturing/relocating individuals	CM 1, CM 2, CM 3, CM 4, CM 8, CM 9

Activity Type	Construction Features <sup>1</sup>	Construction Effect(s) on Desert Pupfish	O&M Effect(s) on Desert Pupfish	Applicable Conservation Measure(s)
Create aquatic habitat (ponds) <sup>2</sup>	Water conveyance and supply system (includes initial filling of ponds): sedimentation/mixing basins, pipelines, pumps, weirs, and other structures in waterways to divert water	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals. Beneficial effects: habitat expansion	Reducing or disrupting habitat and capturing/relocating individuals	CM 1, CM 2, CM 3, CM 4, CM 8
Establish vegetation <sup>3</sup>	Groundwater monitoring wells and supply wells	Reducing or disrupting habitat	Reducing or disrupting habitat	CM 1, CM 3, CM 8
Establish vegetation <sup>3</sup>	Check dam (weir)	Isolating populations	Reducing or disrupting habitat and capturing/relocating individuals	CM 3, CM 8
Establish vegetation <sup>3</sup>	Earthen berms and hard substrate on berms	Isolating populations, temporarily reducing or disrupting habitat, and capturing/relocating individuals from affected or source populations	Reducing or disrupting habitat, and capturing/relocating individuals	CM 1, CM 2, CM 3
Establish vegetation <sup>3</sup>	Operational facilities	None	None	None
Establish vegetation <sup>3</sup>	Public amenities, recreation access	None	Reducing or disrupting habitat, and capturing/relocating individuals.	CM 3
Establish vegetation <sup>3</sup>	Roads	None	None	None
Establish vegetation <sup>3</sup>	Staging areas	None	None	None
Establish vegetation <sup>3</sup>	Swales or channels	None	Reducing or disrupting habitat and capturing/relocating individuals	CM 3, CM 8
Establish vegetation <sup>3</sup>	Temporary vegetation removal	Reducing or disrupting habitat and capturing/relocating individuals	Reducing or disrupting habitat and capturing/relocating individuals	CM 3, CM 8, CM 9

Activity Type	Construction Features <sup>1</sup>	Construction Effect(s) on Desert Pupfish	O&M Effect(s) on Desert Pupfish	Applicable Conservation Measure(s)
Establish vegetation <sup>3</sup>	Water conveyance and supply system: sedimentation/mixing basins, pipelines, pumps, weirs and other structures in waterways to divert water	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals.	Reducing or disrupting habitat, capturing/relocating individuals, compounding selenium risk.	CM 1, CM 2, CM 3, CM 4, CM 8
Conduct shallow- water habitat dust suppression <sup>4</sup>	Earthen berms and hard substrate on berms	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals	Reducing or disrupting habitat and capturing/relocating individuals	CM 1, CM 3
Conduct shallow- water habitat dust suppression <sup>4</sup>	Staging areas	None	None	None
Conduct shallow- water habitat dust suppression <sup>4</sup>	Vegetation removal	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals	Reducing or disrupting habitat and capturing/relocating individuals	CM 1, CM 3, CM 9
Conduct shallow- water habitat dust suppression <sup>4</sup>	Water conveyance and supply system (includes initial water application): sedimentation/mixing basins, pipelines, pumps, weirs and other structures in waterways to supply water	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals. Beneficial effects: habitat expansion	Reducing or disrupting habitat, capturing/relocating individuals, and compounding selenium risk	CM 1, CM 2, CM 3
Create shallow flooding areas <sup>4</sup>	Groundwater monitoring wells and supply wells	Reducing or disrupting habitat	Reducing or disrupting habitat	CM 1, CM 3, CM 8
Create shallow flooding areas <sup>4</sup>	Check dams (weir)	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals.	Reducing or disrupting habitat and capturing/relocating individuals	CM 3, CM 8
Create shallow flooding areas <sup>4</sup>	Shallow earthen berms	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals.	Reducing or disrupting habitat and capturing/relocating individuals.	CM 3

Activity Type	Construction Features <sup>1</sup>	Construction Effect(s) on Desert Pupfish	O&M Effect(s) on Desert Pupfish	Applicable Conservation Measure(s)
Create shallow flooding areas <sup>4</sup>	Staging areas	None	None	None
Create shallow flooding areas <sup>4</sup>	Water conveyance and supply system (includes initial water application): sedimentation/mixing basins, pipelines, pumps, weirs and other structures in waterways to supply water	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals. Beneficial effects: habitat expansion.	Reducing or disrupting habitat, capturing/relocating individuals, and compounding selenium risk.	CM 1, CM 2, CM 3
Create stormwater spreading areas <sup>5</sup>	Compost socks	None	None	None
Create stormwater spreading areas <sup>5</sup>	Earthen berms and hard substrate on berms	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals.	Reducing or disrupting habitat and capturing/relocating individuals.	CM 1, CM 3
Create stormwater spreading areas <sup>5</sup>	Furrows	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals.	Reducing or disrupting habitat and capturing/relocating individuals.	CM 3
Create stormwater spreading areas <sup>5</sup>	Staging areas	None	None	None
Create stormwater spreading areas <sup>5</sup>	Water conveyance and supply system (includes initial water application): sedimentation/mixing basins, pipelines, pumps, weirs and other structures in waterways to supply water	Reducing or disrupting habitat, isolating populations, and capturing/relocating individuals.	Reducing or disrupting habitat, capturing/relocating individuals, and compounding selenium risk.	CM 1, CM 2, CM 3, CM 8

<sup>1</sup> Activity could include all or any combination of these features.
 <sup>2</sup> General location: Near river outlets; *Individual project size*: Up to 10,216 acres; Water depths: Shallow, mid, deep.

<sup>3</sup> General location: Near river or drain outlets; Individual project size: Up to 1,000 acres; Water depths: Less than 3 feet.

<sup>4</sup> General location: Near drains; Individual project size: Up to 1,000 acres; Water depths: Less than 1 inch.

<sup>5</sup> General location: Near drains, creeks, washes, rivers; Individual project size: Depending on water availability; *Water depths*: Less than 1 inch.

# Construction

Construction of the following activity types and their associated construction features may have adverse effects on desert pupfish reproduction, numbers, and distribution by, (1) reducing or disrupting habitat, (2) isolating populations, and (3) and capturing and/or relocating individuals from affected or source populations. Beneficial effects include restoring connectivity of irrigation drain isolated populations and habitat expansion and the management and monitoring of those habitats.

# Activity Type:

- 1. Aquatic habitat ponds
- 2. Permanent vegetated wetlands
- 3. Vegetation Establishment
- 4. Shallow-water habitat dust suppression
- 5. Shallow flooding
- 6. Stormwater spreading

# Reducing or Disrupting Habitat

All the above activity types could result in the reduction or disruption of desert pupfish habitat within irrigation drains, herbaceous wetlands downstream of the drains, shallow furrows, and Salton Sea shoreline pools. Depending on when and where site-specific projects would occur, these wetland areas could be reduced or disrupted by vegetation removal, dewatering, and construction activities. Construction features could result in a reduction or disruption of desert pupfish habitat by dewatering occupied areas and using equipment in areas inundated with water. We anticipate some fatalities and disruption to spawning and loss of connectivity between occupied irrigation drains and Salton Sea shoreline pools with these activities, but once construction is complete, desert pupfish will occupy the shallow water areas of the aquatic pond habitat, interception canal, and permanent vegetation wetlands. We expect that desert pupfish will also continue to occupy the end of IID irrigation drains below the last drop structure and CVWD irrigation drains that have no drop structures or culverts that would prevent desert pupfish movement upstream.

Reductions or disruptions to desert pupfish habitat will be offset by creating habitat within the action area to ensure a no net loss of aquatic habitats (CM 1) and, if necessary, re-establishment of desert pupfish populations within appropriate habitats (CM 4). While we cannot calculate the exact acreage that will be created in each of these aquatic habitats to support desert pupfish, we can reasonably conclude that a portion of the 14,900 acres of aquatic habitat to be built under the SSMP 10-Year Plan will support desert pupfish and that a permanent reduction in the distribution of desert pupfish in the action area will not occur with implementation of the SSMP 10-Year Plan. This conclusion is based on the SCH project and consultation (Service 2013), which is an aquatic habitat pond activity type and is currently in construction. The SCH project has successfully connected 10 irrigation drains to a 30-acre interception canal that is occupied by desert pupfish. This has improved connectivity and management of the Tier 1 habitat areas, consistent with recovery goals. Additionally, although the aquatic ponds are not specifically designed to provide desert pupfish habitat, the shallow water on the periphery of the ponds will

contain features like those of the Salton Sea shoreline pools. These features include an extensive shallow (2-3 feet) area; establishment of wigeon grass (*Ruppia maritima*) that would provide food, cover, and structure for desert pupfish and invertebrates they prey upon; and a range of salinities. The SCH project will likely support about 1,703 acres, or about 42 percent, (out of 4,000 acres) of newly created desert pupfish habitat in the action area (Service 2013). The shallow areas of the aquatic ponds and the interception canal will also support desert pupfish reproduction, which could result in an increase in the number of desert pupfish in the action area.

An additional measure to offset the fatalities and disruption to spawning is the development and implementation of a desert pupfish protection and relocation plan (CM 3). This plan would ensure that, prior to site-specific project construction activities, desert pupfish presence and spawning within, or immediately adjacent to, work areas will be assessed to determine optimal timing windows to remove desert pupfish from direct impact areas by qualified biologists (CM 3) to reduce fatalities. Therefore, we anticipate fatalities associated with construction will be minimized.

#### **Isolating Populations**

As discussed above, depending on water quantity and salinity levels, desert pupfish are known to occur in irrigation drains, shallow furrows, shallow water ponded in berms near the Salton Sea shoreline, and Salton Sea shallow areas near river outlets. Therefore, some activity types could isolate some of these populations depending on the size, location, and water source(s) used. Efforts to reduce isolating populations would depend on site-specific project location characteristics but aquatic habitat pond projects would be designed to provide connectivity between occupied irrigation drains via drain interconnections. Desert pupfish habitat would be designed into aquatic habitat pond projects where connectivity and habitat benefits could be achieved based on existing substrate and vegetation. Because the ponds will be designed to support shallow water habitat, additional desert pupfish may be introduced into the ponds if desert pupfish do not naturally repopulate the ponds (CM 4).

Water from existing irrigation drains that discharge on the dry playa where the aquatic habitat ponds could be built would be diverted around the ponds by constructed interception canals. Habitat used by desert pupfish in those drains would remain, but the individual drain connections would be hydrologically connected via the interception canal. Irrigation drains could also be connected with the construction of permanent vegetated wetlands. In this case, these wetlands would be managed to ensure populations of desert pupfish persist and can move among drains, where feasible. Overall, we anticipate an improvement to desert pupfish connectivity with construction of aquatic habitat ponds and permanent vegetated wetlands.

#### Relocating and/or Capturing Individuals from Affected Populations

During the purposeful relocation, capture, transport, and release of desert pupfish associated with construction of activity types, individual desert pupfish may be injured or killed. However, implementation of a desert pupfish protection and relocation plan (CM 3) would avoid and/or minimize the likelihood of fish being injury or killed from capture, transport, and release activities. These activities will be conducted by CDFW staff or biologists trained by CDFW staff

experienced in these activities. Therefore, injuries and fatalities are expected to be low during these capture and relocation activities.

# **Operations and Maintenance**

Operations and maintenance of the following activity types and their associated construction features may have adverse effects on desert pupfish reproduction, numbers, and distribution by, (1) temporarily reducing or disrupting habitat, (2) temporarily isolating populations, (3) capturing and/or relocating individuals from affected or source populations, and (4) compounding (i.e., intensifying the potential negative aspects) the selenium risk.

# Activity Type:

- 1. Aquatic habitat ponds
- 2. Permanent vegetated wetlands
- 3. Establish Vegetation
- 4. Shallow-water habitat dust suppression
- 5. Shallow flooding areas
- 6. Stormwater spreading

# Reducing or disrupting habitat

Operations and maintenance activities would include: (1) water supply and control infrastructure maintenance, (2) infrastructure maintenance, (3) erosion control structure maintenance, (4) vegetation control, (5) drain interception canal maintenance, (6) herbicide and pesticide application, and (7) emergency repairs. These operations and maintenance activities have the potential to directly affect desert pupfish that are present in these areas by increased turbidity, disturbance to feeding and spawning areas, and fatalities. Conservation measures to avoid take of desert pupfish during operations and maintenance activities include: selenium monitoring (CM 2), implementing a desert pupfish protection and relocation plan (CM 3), implementing a desert pupfish inoculation plan (CM 4), and incorporating low effect operating procedures for herbicide and pesticide use (CM 9).

Most operations and maintenance activities will not result in significant water reductions to aquatic habitat ponds or permanent vegetated wetlands so adverse effects to desert pupfish from these activities are likely to be minimal. However, under certain situations water elevations may need to be rapidly reduced in the aquatic habitat ponds, such as emergency repair of water control structures or berms or a sudden change in pond water quality. Draining of the aquatic habitat ponds could occur because of these situations, but complete draining would not be used as a typical management action. Therefore, low areas of the aquatic habitat ponds would likely retain water and act as temporary refugia for desert pupfish because the remaining fish would be salvaged or left in place to re-establish fish populations once water elevations returned in the ponds.

We anticipate some fatalities to desert pupfish in the event ponds are drained but we cannot quantify the magnitude of mortality associated with this event because we do not know the number of fish the aquatic habitat ponds will support, and desert pupfish populations fluctuate over time. However, we anticipate these events to be temporary and complete extirpation of

desert pupfish in the ponds would not occur during water level reduction or draining events. Also, while the drain interception canals would result in restoring connectivity of isolated irrigation drain populations and habitat expansion for desert pupfish, maintenance of these canals (including periodic vegetation removal) would cause periodic disturbance within that habitat and could result in disturbance to spawning or fatalities. Future scheduled maintenance of these canals will be defined during site-specific project reviews and will incorporate measures to avoid and minimize take, such as seasonal restrictions, pre-maintenance surveys, and capture and relocation of affected individuals by qualified biologists (CM 3). Overall, we anticipate the conservation measures will result in a minimization of the adverse effects from habitat reductions or disruptions from operation and maintenance activities and an increase in desert pupfish habitat and connectivity with the operations and maintenance of aquatic habitat ponds and permanent vegetated wetlands.

Non-native fish species could occupy the aquatic habitat ponds and permanent vegetated wetlands, which will likely result in competition, a potential reduction in recruitment, and possibly predation, of desert pupfish. Research on the relationship of desert pupfish abundance to selected environmental variables indicate that desert pupfish numbers were high when mosquitofish were numerous, but desert pupfish numbers were low when porthole livebearers (Poeciliopsis gracilis), tilapias (Oreochromis mossambicus and Tilapia zillii), sailfin mollies (Poecilia latipinna), and longjaw mudsuckers (Gillichthys mirabilis) were numerous (Martin and Saiki 2005). Because the aquatic habitat ponds may be occupied by fish that limit desert pupfish numbers (e.g., tilapia), we anticipate some fatalities due to predation and competition. However, CDFW biologists anticipate desert pupfish will persist in the aquatic habitat ponds based on several decades of monitoring desert pupfish that persist in habitats where these non-native fish species are part of the community (Service 2013) and the success of desert pupfish in the BOR/USGS experimental ponds (Saiki et al. 2011). While we anticipate some fatalities of desert pupfish due to predation/competition, we do not have enough information to quantify this effect. The site-specific adaptive management and monitoring program (CM 8) will provide information regarding persistence of desert pupfish in the aquatic habitats and determine if additional management is necessary to ensure desert pupfish persist in these areas.

#### **Isolating Populations**

Desert pupfish have the potential to be impacted by changes in hydrology at site-specific projects and can become trapped and isolated in shallow furrows, edges of aquatic habitat ponds, and interconnection ditches. Also, maintenance of ponds, wetlands, and infrastructure within these areas has the potential to isolate desert pupfish by reducing water levels. A desert pupfish protection and relocation plan will be prepared and implemented (CM 3) for each site-specific project to ensure adequate monitoring and adaptive management procedures are in place to identify features that can entrap desert pupfish and ensure desert pupfish that become trapped can be successfully moved to adjacent suitable habitat.

#### Relocating and/or Capturing Individuals from Affected or Source Populations

During the purposeful relocation, capture, transport, and release of desert pupfish associated with operation and maintenance of activity types, individual desert pupfish may be injured or killed. However, implementation of a desert pupfish protection and relocation plan (CM 3) would avoid

and/or minimize the likelihood of fish being injury or killed from capture, transport, and release activities. These activities will be conducted by CDFW staff or biologists trained by CDFW staff experienced in these activities. Therefore, desert pupfish injury and fatalities are expected to be low during these capture and relocation activities.

The aquatic habitat ponds may be inoculated with desert pupfish if the species does not naturally repopulate the aquatic habitat ponds where suitable habitat is present one year after ponds are filled with water. Potential sources of desert pupfish for the stocking of the ponds would include Tier 1 populations, that is, those occurring in the Salton Sea, associated irrigation drains, and shoreline pools, as well as those in Salt Creek and Hot Mineral Spa Wash. Because of the remote location, the San Felipe Creek population will likely not be used as a source for the initial stocking but would be considered for subsequent inoculations of genetic material. To achieve adequate genetic inoculation, at least 50 adults could be introduced to avoid inbreeding, and up to 500 individuals could be introduced to avoid extirpations due to the inability to adapt to environmental changes. The determination of the source populations will depend on several factors, primarily the status of the desert pupfish populations as well as the environmental conditions in each habitat at the time of desert pupfish capture and translocation. The number of desert pupfish collected from any single site will not exceed 10 percent of the total number of desert pupfish captured and desert pupfish will not be collected if less than 10 desert pupfish are captured from any one source site. Staff from CDFW experienced with collection, monitoring, and relocation of desert pupfish will conduct the collection and inoculation activity and an inoculation plan will be developed in coordination with the Service (CM 4). Because CDFW has extensive experience successfully collecting and relocating desert pupfish, this activity is not likely to result in significant injury or fatality to source populations.

#### **Compounding Selenium Risk**

As stated above, selenium is present in the irrigation drains inhabited by desert pupfish and some activity types would combine the water in those drains, which may result in higher selenium concentrations. An evaluation of the baseline selenium concentrations in and near IID irrigation drains associated with the Water Transfer Project concluded that, total selenium concentrations in water, sediment, and biota varied widely among irrigation drains and sample dates (Saiki *et al.* 2012). Therefore, it is difficult to assess whether connecting irrigation drains will result in compounding the selenium risk. An adaptive management and monitoring plan will be developed to monitor and manage selenium levels to ensure current selenium levels are not exceeded, which will minimize adverse effects to desert pupfish (CM 8). Also, targeted monitoring of permanent vegetated wetlands where irrigation drain water has been used to enhance or expand the existing wetlands will be conducted to ensure selenium levels are not resulting in adverse effects to desert pupfish (CM 2).

#### Management and Monitoring

An adaptive management and monitoring plan would be developed and implemented to: (1) evaluate site-specific projects using specific benchmarks and metrics, (2) improve the management of newly created habitats, (3) ensure pupfish are maintained in the habitats, (4) and inform future habitat restoration activities (CM 8). Aquatic habitat ponds and permanent vegetated wetlands will be monitored to evaluate project effectiveness and address key

uncertainties about habitat function (CM 8). The monitoring program will be implemented to collect data necessary to operate the aquatic habitats (e.g., flow and salinity), evaluate their effectiveness (e.g., water quality parameters such as dissolved oxygen and temperature, presence and abundance of fish and bird species), and assess status of threats (e.g., selenium concentration in water and sediment). Operational triggers such as water supply flow rates would typically be monitored daily, while status of target resources (e.g., desert pupfish) would be monitored seasonally or annually. An overall data review will be conducted annually to evaluate project status and performance. A decision-making framework would be established to provide recommendations to project managers for maintaining or adjusting operations.

Monitoring activities would include visual monitoring to ensure that berms are stable; habitat parameters are met; and water testing and adjustments to ensure desired salinity, residence time, and depth are maintained. Monitoring activities would also document the relative abundance and distribution of desert pupfish in the constructed wetland habitats. Sampling for water, sediments, and aquatic invertebrates may result in minor disruptions to the desert pupfish. Neither of these activities is likely to result in injury or fatality given the nature and scale. Direct monitoring of desert pupfish using minnow traps, gill nets, and/or seines could result in injury or fatality, but because the monitoring will be conducted by CDFW staff or biological monitors experienced with this activity, desert pupfish injuries and fatalities are expected to be infrequent and localized.

# **Beneficial Effects**

The goals of the SSMP 10-Year Plan would result in 14,900 acres of aquatic habitat establishment and management, 42 percent of which, or about 6,258 acres, would be an increase in aquatic habitats that support desert pupfish in the action area. Examples of activities that could result in desert pupfish habitat establishment include construction of aquatic habitat ponds and permanent vegetated wetlands. These new aquatic habitats could include the following:

- Interception canals and drain interconnections
- Shallow ponds and wetlands

These habitats have the potential to support desert pupfish breeding, feeding, and sheltering. Because proposed site-specific projects would result in a net gain of habitat where none previously occurred, these areas would support expansion of reproduction, numbers, and distribution of desert pupfish in the action area. Additionally, these new areas will be monitored and managed (CM 8) to ensure desert pupfish persist in these areas over the life of the project (about 75 years).

# Yuma Ridgway's Rail

Potential effects on Yuma Ridgway's rail may occur with implementation of the SSMP 10-Year Plan and as the result of multiple construction and operations and maintenance activities described in the proposed action, which are summarized in Table 7. Defining characteristics of each activity type include general location, water sources, and water depth(s), which are also summarized in Table 7. Only those activity types that have water components have been carried forward in the effects analysis since those are where Yuma Ridgway's rail currently occur or

have the potential to occur in the future because of site-specific project locations (e.g., near river outlets or irrigation drains).

Activity Type	Construction Features <sup>1</sup>	Construction Effect(s) on Yuma Ridgway's Rail	O&M Effect(s) on Yuma Ridgway's Rail	Applicable Conservation Measure(s)
Collect data to support aquatic habitat and dust suppression and restoration projects	Geotechnical investigations, soil sampling, installation of stream gauges, drone flyovers and other activities to support project design	Modifying habitats and increasing noise in adjacent habitats	None	CM 6
Create aquatic habitat (ponds) <sup>2</sup>	Groundwater monitoring and supply wells	Increasing noise in adjacent habitats	Reducing or modifying habitat and increasing noise in adjacent habitats	CM 6, CM 8
Create aquatic habitat (ponds) <sup>2</sup>	Boat ramp for project maintenance	Increasing noise in adjacent habitats	Increasing noise in adjacent habitats	СМ 6
Create aquatic habitat (ponds) <sup>2</sup>	Bottom hard substrate	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create aquatic habitat (ponds) <sup>2</sup>	Breakwater for construction	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create aquatic habitat (ponds) <sup>2</sup>	Check dam	Increasing noise in adjacent habitats	None	СМ 6
Create aquatic habitat (ponds) <sup>2</sup>	Drain interception canals	Reducing or modifying habitat and increasing noise in adjacent habitats	Reducing or modifying habitat and increasing noise in adjacent habitats	CM 1, CM 6, CM 7
Create aquatic habitat (ponds) <sup>2</sup>	Earthen berms and hard substrate on berms	Reducing or modifying habitat and increasing noise in adjacent habitats	Increasing noise in adjacent habitats	CM 1, CM 6
Create aquatic habitat (ponds) <sup>2</sup>	Electrical distribution lines to support project components	Increasing noise in adjacent habitats	None	None

# Table 7: Effects to Yuma Ridgway's Rail from SSMP 10-Year Plan Site-Specific Activity Types and Construction Features

Activity Type	Construction Features <sup>1</sup>	Construction Effect(s) on Yuma Ridgway's Rail	O&M Effect(s) on Yuma Ridgway's Rail	Applicable Conservation Measure(s)
Create aquatic habitat (ponds) <sup>2</sup>	Flood control infrastructure	Increasing noise in adjacent habitats	None	None
Create aquatic habitat (ponds) <sup>2</sup>	Habitat islands	Increasing noise in adjacent habitats	None	CM 6
Create aquatic habitat (ponds) <sup>2</sup>	Operational facilities	Increasing noise in adjacent habitats	Increasing noise in adjacent habitats	CM 6
Create aquatic habitat (ponds) <sup>2</sup>	Public amenities, recreation access	Increasing noise in adjacent habitats	Increasing noise in adjacent habitats	None
Create aquatic habitat (ponds) <sup>2</sup>	Roads	Increasing noise in adjacent habitats	Increasing noise in adjacent habitats	None
Create aquatic habitat (ponds) <sup>2</sup>	Seasonal flooding (O&M only)	None	Reducing or modifying habitat	CM 6
Create aquatic habitat (ponds) <sup>2</sup>	Snags or other vertical structures	Increasing noise in adjacent habitats	None	CM 6
Create aquatic habitat (ponds) <sup>2</sup>	Staging areas	None	None	None
Create aquatic habitat (ponds) <sup>2</sup>	Swales or channels	Increasing noise in adjacent habitats	None	CM 6
Create aquatic habitat (ponds) <sup>2</sup>	Vegetation removal (permanent or temporary)	Reducing or modifying habitat and increasing noise in adjacent habitats	Reducing or modifying habitat and increasing noise in adjacent habitats	CM 1, CM 6, CM 9
Create aquatic habitat (ponds) <sup>2</sup>	Water conveyance and supply system (includes initial water application): sedimentation/mixing basins, pipelines, pumps, weirs, and other structures in waterways to divert water	Reducing or modifying habitat and increasing noise in adjacent habitats Beneficial effects: habitat expansion	Increasing noise in adjacent habitats	CM 1, CM 6, CM 8
Create permanent vegetated wetlands <sup>3</sup>	Groundwater monitoring and supply wells	Increasing noise in adjacent habitats	Reducing or modifying habitat and increasing noise in adjacent habitats	CM 6, CM 8
Create permanent vegetated wetlands <sup>3</sup>	Check dam	Reducing or modifying habitat and increased noise	Reducing or modifying habitat and increased noise	CM 1, CM 6
Create permanent vegetated wetlands <sup>3</sup>	Earthen berms and hard substrate on berms	Reducing or modifying habitat and increased noise	Reducing or modifying habitat and increased noise	CM 1, CM 6
Create permanent vegetated wetlands <sup>3</sup>	Operational facilities	Increasing noise in adjacent habitats	Increasing noise in adjacent habitats	CM 6

Activity Type	Construction Features <sup>1</sup>	Construction Effect(s) on Yuma Ridgway's Rail	O&M Effect(s) on Yuma Ridgway's Rail	Applicable Conservation Measure(s)
Create permanent vegetated wetlands <sup>3</sup>	Public amenities, recreation access	Increasing noise in adjacent habitats	Increasing noise in adjacent habitats	CM 6
Create permanent vegetated wetlands <sup>3</sup>	Roads	Increasing noise in adjacent habitats	Increasing noise in adjacent habitats	CM 1, CM 6
Create permanent vegetated wetlands <sup>3</sup>	Staging areas	None	None	CM 1, CM 6
Create permanent vegetated wetlands <sup>3</sup>	Swales or channels	Reducing or modifying habitat and increased noise in adjacent habitats	Reducing or modifying habitat and increased noise in adjacent habitats	CM 1, CM 6
Create permanent vegetated wetlands <sup>3</sup>	Temporary vegetation removal	Reducing or modifying habitat and increased noise in adjacent habitats	Reducing or modifying habitat and increased noise in adjacent habitats	CM 1, CM 6, CM 9
Create permanent vegetated wetlands <sup>3</sup>	Water conveyance and supply system (includes filling of wetlands): sedimentation/mixing basins, pipelines, pumps, weirs and other structures in waterways to divert water	Reducing or modifying habitat and increasing noise in adjacent habitats Beneficial effects: habitat expansion	Reducing or modifying habitat, increased noise in adjacent habitats, and compounding selenium risk.	CM 1, CM 2, CM 6, CM 8
Establish vegetation <sup>4</sup>	Groundwater monitoring and supply wells	Reducing or modifying habitat and increasing noise in adjacent habitats	None	СМ 6
Establish vegetation <sup>4</sup>	Earthen berms and hard substrate on berms	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 6
Establish vegetation <sup>4</sup>	Swales and furrows	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 6
Establish vegetation <sup>4</sup>	Planting beds (e.g., discing, seeding, agricultural practices to establish vegetation)	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 6

Activity Type	Construction Features <sup>1</sup>	Construction Effect(s) on Yuma Ridgway's Rail	O&M Effect(s) on Yuma Ridgway's Rail	Applicable Conservation Measure(s)
Establish vegetation <sup>4</sup>	Water conveyance and supply system (includes filling of wetlands): sedimentation/mixing basins, pipelines, pumps, weirs and other structures in waterways to divert water	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create shallow-water habitat dust suppression <sup>5</sup>	Groundwater monitoring and supply wells	Reducing or modifying habitat and increased noise	Reducing or modifying habitat and increasing noise in adjacent habitats	CM 6, CM 8
Create shallow-water habitat dust suppression <sup>5</sup>	Earthen berms and hard substrate on berms	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create shallow-water habitat dust suppression <sup>5</sup>	Habitat islands	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create shallow-water habitat dust suppression <sup>5</sup>	Staging areas	None	None	None
Create shallow-water habitat dust suppression <sup>5</sup>	Vegetation removal	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6, CM 9
Conduct shallow- water habitat dust suppression <sup>5</sup>	Water conveyance and supply system (includes filling of wetlands): sedimentation/mixing basins, pipelines, pumps, weirs and other structures in waterways to supply water	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create shallow flooding areas <sup>5</sup>	Groundwater monitoring wells and supply wells	Reducing or modifying habitat and increasing noise in adjacent habitats	Reducing or modifying habitat and increasing noise in adjacent habitats	CM 6, CM 8

Activity Type	Construction Features <sup>1</sup>	Construction Effect(s) on Yuma Ridgway's Rail	O&M Effect(s) on Yuma Ridgway's Rail	Applicable Conservation Measure(s)
Create shallow flooding areas <sup>5</sup>	Check dams	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create shallow flooding areas <sup>5</sup>	Shallow earthen berms	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create shallow flooding areas <sup>5</sup>	Staging areas	None	None	
Create shallow flooding areas <sup>5</sup>	Water conveyance and supply system: sedimentation/mixing basins, pipelines, pumps, weirs and other structures in waterways to supply water	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create stormwater spreading areas <sup>6</sup>	Compost socks	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create stormwater spreading areas <sup>6</sup>	Earthen berms and hard substrate on berms	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create stormwater spreading areas <sup>6</sup>	Furrows	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6
Create stormwater spreading areas <sup>6</sup>	Staging areas	None	None	
Create stormwater spreading areas <sup>6</sup>	Water conveyance and supply system: sedimentation/mixing basins, pipelines, pumps, weirs and other structures in waterways to supply water	Reducing or modifying habitat and increasing noise in adjacent habitats	None	CM 1, CM 6

<sup>1</sup> Activity could include all or any combination of these features.
 <sup>2</sup> General location: Near river outlets; Individual project size: Up to 10,216 acres; Water depths: Shallow, mid, deep.
 <sup>3</sup> General location: Near river or drain outlets; Individual project size: Up to 1,000 acres; Water depths: Less than

<sup>3</sup> feet.

<sup>4</sup> General location: Near drains or wells; Individual project size: up to 2,000 acres; Water depths: Less than 1 inch.

<sup>5</sup> General location: Near drains; Individual project size: Up to 1,000 acres; Water depths: Less than 1 inch.

<sup>6</sup> *General location*: Near drains, creeks, washes, rivers; *Individual project size*: Depending on water availability; *Water depths*: Less than 1 inch.

#### **Construction**

Construction of the following activity types and their associated construction features may have adverse effects on Yuma Ridgway's rail reproduction, numbers, and distribution by: (1) reducing or modifying habitat and (2) increasing noise in adjacent habitats. Beneficial effects include habitat creation, management, and monitoring.

#### Activity Type:

- 1. Aquatic habitat ponds
- 2. Permanent vegetated wetlands
- 3. Vegetation establishment
- 4. Shallow-water habitat dust suppression
- 5. Shallow flooding
- 6. Stormwater spreading

## **Reducing or Modifying Habitat**

Currently, the action area supports about 1,599 acres of herbaceous wetlands in discrete habitat patches at the end of irrigation drains and 3,862 acres of managed marsh in discrete patches that support Yuma Ridgway's rail breeding, feeding, and sheltering. The above activity types and their associated construction features have the potential to reduce or modify the unmanaged marshes that are occupied by Yuma Ridgway's rail through the reduction or redirection of water sources, dewatering wetlands downstream of the irrigation drain mouths, and vegetation removal during grading or berm construction. No reduction or modification of the 3,862 acres of managed marsh in the action area is anticipated.

As discussed above, most Yuma Ridgway's rails are year-round residents in this part of their range and individual birds make short dispersal movements among available habitats (Harrity and Conway 2021). Therefore, it is anticipated that any individuals that occupy herbaceous marsh areas where water sources are reduced or dewatered, or vegetation removal activities occur will disperse to nearby habitats. Approximately 3,862 acres of managed freshwater wetlands exists within the action area that will remain available for rail dispersal. While long range Yuma Ridgway's rail migrations (greater than 500 miles) have resulted in a 60.9 percent fatality rate (Harrity and Conway 2020), we do not have sufficient data to determine how many of the birds will die because of the short-distance dispersal. Successful short-distance dispersals among habitat patches have been documented through telemetry research (Harrity and Conway 2019, Yost *et al.* 2022).

Reducing or modifying habitat would have adverse effects to Yuma Ridgway's rail reproduction. However, to reduce adverse effects on reproduction, water reductions, dewatering, and clearing and grubbing of marsh habitats will be performed outside of the nesting season, which occurs from February 16 to September 30 (CM 6). Additional measures to avoid and minimize adverse effects from reducing or modifying habitat include pre-construction protocol surveys (CM 6) and avoiding dewatering adjacent marsh habitats (CM 7).

Based on the goals of the SSMP 10-year Plan, the construction of the above activity types, i.e., aquatic habitat ponds or permanent vegetated wetlands, would ultimately create additional habitat for Yuma Ridgway's rail in the action area. Removal of herbaceous wetlands, during sitespecific project construction would be replaced at a 3:1 ratio, or as specified in site-specific project permits (CM 1). SSMP 10-Year Plan projects that enhance or restore herbaceous wetlands, via the permanent vegetated wetland activity type, will be used to provide the replacement acres. The permanent vegetated wetlands activity type is specifically designed to create habitat to attract common and special-status aquatic bird species, which would include the shallow water and vegetation that Yuma Ridgway's rail require for breeding, feeding, and sheltering. We anticipate implementation of the SSMP 10-year plan will result in a no net loss of the herbaceous wetlands in the action area. If these areas are dewatered during construction, they will be enhanced or replaced at a 3:1 ratio through the aquatic habitat acreage goals identified in the SSMP 10-Year Plan. This would result in about 4,797 acres (1,599 x 3) of herbaceous wetlands that will be maintained and managed (CM 8) in the action area for the life of the project (about 75 years). This would result in an increase to reproduction, numbers, and distribution of Yuma Ridgway's rail in the action area.

# Increasing Noise in Adjacent Habitat

Noise and vibrations associated with the use of heavy equipment during project construction have the potential to disrupt Yuma Ridgway rail behaviors in adjacent habitat by masking intraspecific communication and startling birds (e.g., see Dooling and Popper 2007 for a discussion of observed effects of highway noise on birds). Construction noise could disturb rails and result in displacement and reproductive loss within habitats in the vicinity of site-specific project activities. Displaced rails may be subjected to increased predation, death, or injury and may be forced to compete with other resident rails when attempting to expand an existing territory or establish a new territory.

To reduce these effects, water reductions, dewatering, clearing, and grubbing of marsh habitats will be performed outside of the nesting season, which occurs from February 16 to September 30 (CM 6). Additional measures to avoid and minimize adverse effects include construction and operations surveys to ensure construction work during the breeding season is outside of specified buffer distances and having a bio-monitor on the project site outside of breeding season to ensure birds adjacent to active construction sites are not within specified buffer distances (CM 6).

## **Operations and Maintenance**

Operations and maintenance of the following activity types and their associated construction features may have adverse effects on Yuma Ridgway's rail reproduction, numbers, and distribution by: (1) temporarily reducing or disrupting habitat, (2) increasing noise in adjacent marsh habitats, and (3) compounding the selenium risk.

# Activity Type:

1. Aquatic habitat ponds

#### 2. Permanent vegetated wetlands

#### Temporarily reducing or modifying habitat

Operations and maintenance activities associated with the above activity types include: (1) water supply and control infrastructure maintenance, (2) infrastructure maintenance, (3) erosion control structure maintenance, (4) vegetation control, (5) drain interception canal maintenance, and (6) emergency repairs. These activities have the potential to reduce or modify water levels and/or vegetation cover. Adverse effects to Yuma Ridgway's rail from these activities will be minimized for each site-specific project by conducting protocol Yuma Ridgway's rail surveys and implementing a 500-foot buffer (CM 6) and limiting herbicide and pesticide use in occupied habitat (CM 9). These measures will ensure operations and maintenance activities are conducted outside of the rail breeding season, in unoccupied habitat, and outside of stated buffer zones. Therefore, adverse effects to Yuma Ridgway's rail from these activities are unlikely to occur and will not result in a reduction to reproduction, numbers, or distribution in the action area.

#### Increasing noise in adjacent marsh habitats

Noise associated with operation and maintenance activities could disturb Yuma Ridgway's rails and result in displacement and reproductive loss within habitats adjacent to site-specific project activities. Measures to reduce these effects include: avoiding maintenance work during the breeding season, incorporating 500-foot buffers, and using on-site biological monitors (CM 6). Therefore, adverse effects to Yuma Ridgway's rail from these activities are unlikely to occur and will not result in a reduction to reproduction, numbers, or distribution in the action area.

#### **Compounding Selenium Risk**

As discussed above, Yuma Ridgway's rail that currently occupy the unmanaged marsh areas are subject to a relatively higher risk from selenium exposure compared to managed marshes. Concentrations of total recoverable selenium in water exceeding 2.0 µg/L can pose elevated selenium risk (relative to baseline concentrations) to biota in wetland food webs (Hamilton, 2004). Also, excessive selenium has significant toxic effects and is especially detrimental to early life stage development and hatching success in aquatic birds (Ohlendorf 1999). The unmanaged marsh areas, where rails occur, exceeded the 2.0 µg/L threshold for selenium effects on avian reproduction (Ricca et al. 2022). However, we are unable to determine what effects these elevated selenium levels have had on reproduction and survival of Yuma Ridgway's rails using these marshes. Hazards posed by selenium are both species- and habitat-specific and can be influenced by several factors such as bioavailability and rate of uptake at the base of the food web, dietary exposure, and transfer through the food web (De La Cruz et al. 2022). Because of this complicated ecology, we cannot evaluate whether the existing elevated selenium levels are leading to nest failure or population-level declines in the action area. Regardless, compounding the selenium risk by creating habitats with a number of different water sources could increase selenium concentrations and result in nesting failure.

These impacts would be avoided and reduced with selenium monitoring (CM 2) and implementation of an adaptive management and monitoring plan (CM 8). The selenium monitoring and adaptive management and monitoring plan will incorporate monitoring and

adaptive management measures to ensure baseline selenium levels are maintained. Additionally, the Service is working with USGS to develop a selenium ecological risk model (De la Cruz *et al.* 2022) to better understand whether herbaceous wetlands represent a greater selenium hazard for Yuma Ridgway's rail than managed marsh wetlands. This type of understanding will enable ecosystem-scale selenium modeling and facilitate future management decision to assess selenium hazards and tailor management actions to minimize negative impacts. Overall, we anticipate the conservation measures will result in a reduction of the adverse effects from operation and maintenance activities and an increase in Yuma Ridgway's rail habitat and connectivity with operations and maintenance of aquatic habitat ponds and permanent vegetated wetlands.

#### Management and Monitoring

An adaptive management and monitoring plan (CM 8) will be developed and implemented to: (1) evaluate site-specific projects using specific benchmarks and metrics, (2) adaptively manage the created habitats, (3) ensure Yuma Ridgway's rail are maintained in the habitats via protocol rail surveys, and (4) inform future habitat restoration activities (CM 8). Management associated with these activities include: (1) invasive plant removal, (2) 10-year burn cycles to reduce dense cattail stands and allow for a sediment flush, (3) managing and maintaining appropriate water elevations, and (4) soil removal if necessary. We anticipate that any individual rails that occupy wetlands where water sources are reduced or dewatered, will be flushed to nearby habitats. Displaced rails may be subjected to increased predation, death, or injury and may be forced to compete with other resident rails when attempting to expand an existing territory or establish a new territory.

Adverse effects to Yuma Ridgway's rail from these activities will be minimized for each sitespecific project by ensuring rails do not occupy wetlands that require management. Measures to ensure the wetlands to be managed are not occupied by rails will include: (1) conducting protocol rail surveys, (2) employing qualified biologists to conduct protocol surveys and (3) implementing buffer zone restrictions (CM 6). Seasonal restrictions will also be incorporated to ensure vegetation dewatering and removal only occur outside of the rail breeding season (CM 6). Additionally, the adaptive management and monitoring plan will be developed to ensure management activities are conducted to avoid fatalities (CM 8). Herbicide and pesticide application will not be used in areas occupied by Yuma Ridgway's rail, all manufactures guidelines will be followed, and the minimum amount of herbicide or pesticide necessary will be used in adjacent areas (CM 9). We do not anticipate these management and monitoring activities will result in an appreciable reduction in reproduction, numbers, or distribution at site-specific projects or within the action area since they are typical management practices for Yuma Ridgway's rail that are conducted in the managed marshes of the action area on an intermittent basis (once every 3 to 4 years) and will ensure the permanent vegetated wetland areas continue to support rail feeding, breeding and sheltering (Conway et al. 2010).

## **Beneficial Effects**

The goals of the SSMP 10-Year Plan would result in 14,900 acres of aquatic habitat establishment, management, and monitoring, about 4,797 of which would support Yuma Ridgway's rail and be an increase in protected and managed aquatic habitats in the action area. Examples of activities that could result in Yuma Ridgway's rail habitat establishment include:

construction, management, and monitoring of aquatic habitat ponds and permanent vegetated wetlands. These new aquatic habitats could include the following:

- Interception canals
- Permanent vegetated wetlands

These habitats have the potential to include areas that provide foraging, sheltering, and breeding habitat. Because proposed projects would result in a net gain of habitat where none previously occurred, these areas would support expansion of the reproduction, numbers, and distribution of Yuma Ridgway's rail in the action area. Additionally, these new areas will be monitored and managed to support Yuma Ridgway's rail breeding, feeding, and sheltering over the life of the project.

# **Effect on Recovery**

Per section 2(b) of the Act, the primary purposes of the Act are to provide a means whereby the ecosystems upon which listed species depend may be conserved, and to provide a program for the recovery of listed species. Per section 2(c)(1), Congress established a policy requiring all Federal agencies to use their authorities in seeking to recover listed species in furtherance of the purposes of the Act. Consistent with these purposes and Congressional policy, sections 3(5), 4(f), and 7(a)(1) of the Act, the implementing regulations to section 7(a)(2) at 50 CFR § 402.02 and related preamble at 51 FR 19926 (June 3, 1986) generally mandate Federal agencies to further the survival and recovery of listed species in the use of their authorities. Our analysis below assesses whether the proposed action adequately offsets its adverse effects to the environmental baseline to desert pupfish and Yuma Ridgway's rail and the extent to which the proposed action would cause significant impairment of recovery efforts or adversely affect the species chances for survival to the point that recovery is not attainable (51 FR 19926).

# **Desert Pupfish Recovery**

The final recovery plan for the desert pupfish (Service 1993) contains the following recovery (downlisting) criteria: (1) protect natural populations (Tier 1), (2) reestablish new populations in historical habitat (Tier 2), (3) establish and maintain refuge populations (Tier 3), (4) develop protocols for the exchange of genetic material between stocked desert pupfish populations, (5) determine factors affecting population persistence, and (6) develop information and education to foster recovery efforts (Service 1993).

The SSMP 10-Year Plan would ensure protecting natural populations (Tier 1) of desert pupfish within the action area, specifically populations occurring at the end of the irrigation drains and within interconnected canals. In addition, the SSMP 10-Year Plan would create 14,900 acres of aquatic habitats and ensure that some areas within these habitats are suitable for, and occupied by, desert pupfish. We do not anticipate a reduction in reproduction, numbers, or distribution in the action area. Therefore, the SSMP 10-Year Plan is consistent with the desert pupfish recovery plan (Service 1993). Also, the conservation measures provided by the Applicant are commensurate to the likely project impacts considering the species status and threats. Therefore, the net effect of the proposed SSMP 10-Year Plan as offset by the conservation measures would not be likely to cause significant impairment of recovery efforts for the species.

#### Yuma Ridgway's Rail Recovery

To achieve recovery, the Yuma Ridgway's rail must reach and maintain a viable population level (a minimum of 824 individuals in the U.S. for at least 5 consecutive years) and have sufficient protected and managed marsh habitat to provide for long-term persistence of populations in the Salton Sea core area (Service 2009). The SSMP-10-Year plan would create habitat that support viable populations of rails in the Salton Sea basin, as well as manage and monitor populations and habitats aligning with the Service's recovery strategy (Service 2009). Therefore, the SSMP 10-Year Plan would help accomplish the primary objective of the recovery plan, which is to increase the rail breeding population in California to at least 800 pairs by preserving, restoring, creating, protecting, and managing wetland habitat (Service 2009). Also, the conservation measures provided by the Applicant are commensurate to the likely project impacts considering the species status and threats. Therefore, the net effect of the proposed Project as offset by the conservation measures would not be likely to cause significant impairment of recovery efforts for the species.

#### **CUMULATIVE EFFECTS**

Cumulative effects are effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR § 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service is unaware of any future State, Tribal, local, or private actions reasonably certain to occur in the action area (that will not undergo a section 7 consultation) that will adversely affect either species.

#### CONCLUSION

After reviewing the current status of the desert pupfish and Yuma Ridgway's rail, the environmental baseline for the action area, the effects of the proposed activities, and the cumulative effects, we have determined that the SSMP 10-Year plan and activities considered in this biological opinion are not likely to jeopardize the continued existence of the desert pupfish and Yuma Ridgway's rail or result in an appreciable reduction in reproduction, numbers, or distribution at site-specific projects or within the action area. We have reached this conclusion for the following reasons:

- The primary goal of the SSMP 10-Year Plan is the creation of habitat to support fish and wildlife species dependent on the Salton Sea, including desert pupfish and Yuma Ridgway's rail. Most of the work that will occur under the proposed action will have immediate and long-term benefits for both desert pupfish and Yuma Ridgway's rail. Some site-specific projects may cause short-term adverse effects to individuals but not at a population or range-wide scale.
- 2. The Applicant will implement conservation measures to avoid injuries and fatalities of desert pupfish and Yuma Ridgway's rail (e.g., avoid breeding season impacts, implement noise reduction measures, employ qualified biologists and monitors, manage, and monitor for species persistence, etc.).

3. The creation of aquatic habitat proposed in the SSMP 10-year plan will result in an increase in the quantity and quality of habitat specifically managed for desert pupfish and Yuma Ridgway's rail in the action area, which will result in an increase in areas that support reproduction, numbers, and distribution and will facilitate recovery and conservation for these species.

# INCIDENTAL TAKE STATEMENT

#### **INTRODUCTION**

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm in the definition of "take" in the Act means an act which actually kills or injures wildlife. Such [an] act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the proposed protective measures and the terms and conditions of an incidental take statement and occurs as a result of the action as proposed.

The Service has determined the SSMP 10-Year Plan represents a mixed programmatic action, as defined in 50 CFR 402.02 (i.e., the proposed action includes elements that will not be subject to further section 7 consultation and elements that will be subject to future consultation). Some of the project elements of the SSMP 10-Year Plan are analyzed in this biological opinion on a site-specific level for near-term implementation with no future Federal action required. For other project elements, where a federal action has adverse effect to the species, the Federal agency(s) will initiate subsequent consultations for future Federal actions that will be authorized, funded, or carried out at a later time, and this biological opinion uses a framework programmatic approach to evaluate those elements of the SSMP 10-Year Plan. Therefore, consistent with our regulations at 50 CFR 402.14(i)(6), this incidental take statement only covers those standard activity types of the SSMP 10-Year Plan for which incidental take is reasonably certain to occur. The incidental take exemptions provided for in this incidental take statement are effective only upon the Corps issuance of an LOP for site-specific projects.

The reasonable and prudent measures described below are non-discretionary and must be undertaken by the Federal action agencies so they become binding conditions of any grant or permit issued to the Applicant, for the exemption in section 7(o)(2) to apply. The Federal action agencies have a continuing duty to regulate the activity covered by this incidental take statement. If the Federal agencies: (1) fail to assume and implement the terms and conditions, or (2) fail to require the Applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Applicant must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR § 402.14(i)(3)].

Incidental take for each site-specific project will be estimated in the Service's SSMP 10-Year Plan Activity Form, minimized with implementation of the conservation measures, accounted for by the Applicant using an internal tracking mechanism, and confirmed via the annual reporting requirements.

# AMOUNT AND EXTENT OF TAKE

The regulations for section 7(a)(2) clarify that the Service may use surrogates to express the amount or extent of anticipated take when "exact numerical limits on the amount of anticipated incidental take may be difficult" (80 FR 26832). The implementing regulations [50 CFR § 402.14(i)(1)(i)] require that the Service meet three conditions for the use of a surrogate. To use a surrogate, the Service must:

- 1. Describe the causal link between the surrogate and take of the listed species.
- 2. Describe why it is not practical to express the amount of anticipated take or to monitor take-related impacts in terms of individuals of the listed species.
- 3. Set a clear standard to determine when the proposed action has exceeded the anticipated amount or extent of the taking.

# **Take for Desert Pupfish**

Because of the variability in desert pupfish populations anticipated over time for the occupied and potentially occupied areas likely to be affected by SSMP 10-Year Plan activities over the 75year term of the project, we cannot specify a number of individual desert pupfish anticipated to be taken as a result of site-specific project related activities. Therefore, we will use desert pupfish habitat as a surrogate to represent the amount or extent of take, because pupfish cannot persist in the absence of the aquatic resources described above in "Status of Desert Pupfish within the Action Area."

# Construction

We anticipate that some desert pupfish occurring in the end of irrigation drains, herbaceous wetlands below those irrigation drains, furrows, and shoreline pools will be incidentally killed or injured by construction of the activity types described above. Should site-specific project construction impact more than 1,599 acres of herbaceous wetlands over the SSMP 10-Year Plan timeframe, the take threshold will be exceeded.

The construction of connections among IID and CVWD irrigation drains and the removal of physical barriers between these drains may result in injury or fatalities to some desert pupfish in the area undergoing these activities. For the reasons described above, it is not possible to quantify this take in terms of individual fish affected. Except for maintenance of the connections once created, construction activities are only anticipated to disturb the connection points with the irrigation drains, not lengths of occupied habitat within the drains. We anticipate this take will occur within 20 percent of the drain connection system per site-specific project. The 20 percent precedent was established in our Water Transfer Project biological opinion (Service 2002) and adhered to in our SCH biological opinion (Service 2013). We anticipate the threshold will not

result in an appreciable reduction of the reproduction, numbers, and distribution of desert pupfish in the action area. Therefore, if more than 12 drains (62 x .20), per site-specific project, are connected, the take threshold will be exceeded.

#### Capture, Transport, Release, and Monitoring; and Inoculation of Ponds

Desert pupfish clearance and relocation activities necessary to implement the desert pupfish protection and relocation plan (CM 6) and adaptive management and monitoring plan (CM 8) would require capture of desert pupfish using minnow traps and dip nets, as appropriate. CDFW staff or other qualified biologists contracted to complete the work would use CDFW protocols to trap and remove desert pupfish from the areas to be impacted. In some limited cases fatalities may occur associated with the trapping activities because of unanticipated changes in water quality or potential capture myopathy (stress and physical exertion). However, we anticipate that any take that occurs will be at levels below those that would result in extirpation of desert pupfish from the aquatic habitat ponds or other release sites. If monitoring determines that these activities have extirpated desert pupfish from any of the ponds or release sites the take threshold will be exceeded. Criteria will be developed by the Service, in coordination with CDFW, to determine if desert pupfish populations have been extirpated due to these activities. These criteria will be included in the site-specific project adaptive management and monitoring plan (CM 8) that will be approved prior to the completion of each site-specific project that supports desert pupfish.

#### **Operations and Maintenance**

Injury or mortality of desert pupfish will occur when ponds are deliberately drained or water levels are reduced in response to emergency situations. For the reasons stated above, it is not possible to specify a number of desert pupfish anticipated to be taken as a result of operations and maintenance associated with the SSMP 10-Year Plan. However, we anticipate incidental take associated with these activities would not result in extirpation of desert pupfish from the created aquatic habitats where pupfish occur, or the irrigation drains. If monitoring determines that these activities have extirpated desert pupfish from any of the created ponds and wetlands that support desert pupfish the take threshold would be exceeded. Criteria will be developed by the Service, in coordination with CDFW, to determine if desert pupfish populations have been extirpated due to these activities. These criteria will be included in the site-specific project adaptive management and monitoring plan (CM 8) that will be approved prior to the completion of each site-specific project that supports desert pupfish.

#### Management and Monitoring

The adaptive management and monitoring plan would require drain interception canal vegetation management, aquatic habitat pond stocking, and capture and relocation of desert pupfish using minnow traps and dip nets, as appropriate to the circumstances. Trapping and relocation activities will be conducted by CDFW staff or other qualified biologists using CDFW protocols. In some limited cases mortality may occur associated with the trapping activities because of unanticipated changes in water quality or difficulty handling seines on unstable substrates. However, we anticipate that any take that occurs will be at levels below those that would result in extirpation of desert pupfish from the aquatic habitat ponds or permanent vegetated wetland

areas. If monitoring determines that these activities have extirpated desert pupfish from any of the created ponds and wetlands that support desert pupfish the take threshold would be exceeded. Criteria will be developed by the Service, in coordination with CDFW, to determine if desert pupfish populations have been extirpated due to these activities. These criteria will be included in the site-specific project adaptive management and monitoring plan (CM 8) that will be approved prior to the completion of each site-specific project that supports desert pupfish.

Mortality incidents associated with subsequent fish stockings shall not exceed 5 percent of the individuals collected. If more than 5 percent of the individuals collected are killed in subsequent aquatic habitat pond stocking, the take threshold would be exceeded.

# Take for Yuma Ridgway's Rail

The Service anticipates that incidental take of the Yuma Ridgway's rail individuals will be difficult to detect because the of their inherently elusive behavior and numbers in the action area will go up or down because of seasonal or annual fluctuations in the number of individuals that could occupy the marsh areas within the action area during site-specific project construction, operations, maintenance, management, and monitoring activities. Therefore, we will use Yuma Ridgway's rail habitat as a surrogate to represent the amount or extent of take, because Yuma Ridgway's rail cannot persist in the absence of the aquatic resources described above in "Status of Yuma Ridgway's rail within the Action Area."

# **Construction**

We anticipate that 1,599 acres of herbaceous wetlands in the action will be reduced or modified with construction of the SSMP 10-Year Plan projects over the 10-year planning horizon and all individuals that occupy those acres will disperse to surrounding available habitat. We anticipate the reduction of this habitat will be replaced as site-specific projects are constructed. If annual reporting on completed operations, maintenance, and management activities indicate a net loss in the number of herbaceous wetland acres within the action area, the take threshold will be exceeded.

# Management and Monitoring

All of the Yuma Ridgway's rails that occupy permanent vegetated wetlands may be harmed during management and monitoring activities including when protocol surveys are conducted that require the playing of taped vocalizations to confirm presence of the species. Additionally, on an intermittent basis (once every three to four years) the rails occupying these wetland areas could be harmed because of management actions carried out to improve habitat quality (e.g., controlled burns, vegetation removal, etc.). If controlled burns or complete vegetation removal of a site-specific project is conducted more than once every 4 years, as documented in the adaptive management and monitoring plan (CM 8), the take threshold will be exceeded.

# **REASONABLE AND PRUDENT MEASURES**

We have determined that the following reasonable and prudent measure (RPM) is necessary and appropriate to minimize the impact of the incidental take of desert pupfish and Yuma Ridgway's rail:

**RPM 1**. The Corps and the Applicant will ensure the conservation measures and assurances as described in the SSMP 10-Year Plan project description are fully implemented.

#### **TERMS AND CONDITIONS**

To be exempt from the prohibitions of section 9 of the Act, the Corps, and their agents and contractors, must comply with the following term and condition, which implement the reasonable and prudent measure described above and outlines monitoring and reporting requirements. These terms and conditions are non-discretionary.

**TC 1.1** The Corps and the Applicant, including all of their agents/contractors, shall implement all conservation measures and/or biological assurances, as described in the SSMP 10-Year Plan project description summarized in this biological opinion, and ensure they are fully implemented.

#### **REPORTING REQUIREMENTS**

Pursuant to 50 CFR § 402.14(i)(3), the Federal agencies must report the progress of the action and its impact on the species to the Service as specified in this incidental take statement. We have determined that the following measures are necessary to monitor and report on project impacts:

Each site-specific project adaptive management and monitoring plan (CM 8) will include an annual reporting requirement, which will be submitted to the Service by October 1 of each year. Reporting requirements will include summaries of activities undertaken described in the desert pupfish protection and relocation plan (CM3); desert pupfish inoculation plan (CM 4); southwestern willow flycatcher, least Bell's vireo, and western yellow-billed cuckoo management and survey plan (CM 5); Yuma Ridgway's rail management and survey plan (CM 6); and selenium monitoring (CM 2). In addition, the annual report will include a list of CMs implemented, acreages managed and monitored, adverse effects observed to the species mentioned above, and the status of these species within the area of each site-specific project.

The Applicant will also prepare an annual report for all projects that describes and assesses the completed operations, maintenance, and management activities, conducted between July 1 to June 30 of each year, which will be submitted to the Corps and the Service by October 1 of each year. Aquatic resource gains and benefits of the SSMP 10-Year Plan will also be documented in this annual report.

#### **DISPOSITION OF SICK, INJURED, OR DEAD SPECIMENS**

Pursuant to 50 CFR § 402.14(i)(1)(v), the Corps or DWR must notify the Service immediately at 760-322-2070 (Palm Spring Fish and Wildlife Office) if any desert pupfish or Yuma Ridgway's rails are found injured or dead in the action area. Immediate notification means verbal (if possible) and written notice within 1 workday, and must include the date, time, location, and photograph of the carcass, and any other pertinent information. Care must be taken in handling sick or injured individuals to ensure effective treatment, and care in handling dead specimens to preserve biological material in the best possible state.

The Federal agencies or the Applicant must also notify the Service immediately at 760-320-2070

if any endangered or threatened species not addressed in this biological opinion is found dead or injured in the action area during the life of the SSMP 10-Year Plan. The same reporting requirements also shall pertain to any healthy individual of any threatened or endangered species found in the action area and handled to remove the animal to a more secure location. Refer to the "Reporting Requirements" section above for details on reporting procedures.

# **REINITIATION NOTICE**

Reinitiation of consultation is required and will be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and:

- 1. If the amount or extent of taking specified in the incidental take statement is exceeded;
- 2. If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
- 3. If the identified 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. If a new species is listed or critical habitat designated that may be affected by the identified action.

If you have any questions regarding this document, please contact Felicia Sirchia of the Palm Springs Fish and Wildlife Office at (760-322-2070, extension 405; or felicia\_sirchia@fws.gov).

Sincerely,



Digitally signed by SCOTT SOBIECH Date: 2023.02.23 07:16:42 -08'00'

Scott Sobiech Field Supervisor

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# PERSONAL COMMUNICATIONS

- Dorin, M. 2022. Program Manager I, Salton Sea Program, Department of Water Resources, Sacramento, California. Email correspondence to Felicia Sirchia, USFWS, Palm Springs Fish and Wildlife Office, Palm Springs, California. Dated December 13, 2022. Subject: Transmittal of SSMP 10-Year Plan activities and descriptions.
- Shafique, R. 2022. Wildlife Biologist, Sonny Bono Salton Sea National Wildlife Refuge Complex, Calipatria, California. Email correspondence to Felicia Sirchia, USFWS, Palm Springs Fish and Wildlife Office, Palm Springs, California. Dated November 21, 2022. Subject: Managed Marsh Activities.

Appendix A



# Proposed Letter of Permission Procedures for Salton Sea Management Program 10-Year Plan

# U.S. ARMY CORPS OF ENGINEERS LOS ANGELES DISTRICT

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# PROPOSED CLEAN WATER ACT SECTION 404 LETTER OF PERMISSION PROCEDURES FOR COVERED ACTIVITIES UNDER THE SALTON SEA MANAGEMENT PROGRAM (SSMP) 10-YEAR PLAN PROJECTS

Issuance Date: To Be Determined

ACTION ID: SPL-2019-00951-KJD

AUTHORITY: 33 CFR §325.2(e)(1)(ii)

# Purpose:

The U.S. Army Corps of Engineers (Corps), Los Angeles District seeks to establish new Letter of Permission (LOP) procedures under Section 404 of the Clean Water Act (CWA) to more efficiently authorize discharges of dredged or fill material into waters of the U.S. associated with the implementation of the State of California's Salton Sea Management Program (SSMP) 10-Year Plan. The proposed SSMP LOP procedures would specify a permitting process by which site-specific SSMP 10-Year Plan projects could be authorized. Proposed projects authorized by the new LOP procedures would result in no more than minor individual and cumulative adverse environmental effects, must comply with regulatory program requirements, including the Section 404(b)(1) Guidelines [40 Code of Federal Regulations (CFR) Part 230], and meet the criteria identified in this notice, including the general permit conditions.

# **Regulatory Context:**

In accordance with 33 CFR §325.2(e)(1), the Corps is authorized to use "alternative procedures", including LOPs, to authorize activities under the Corps Regulatory Program pursuant to Section 10 of the Rivers and Harbors Act (RHA) and/or Section 404 of the CWA, as follows:

i. In those cases subject to Section 10 of the RHA when, in the opinion of the district engineer, the proposed work would be minor, would not have significant individual or cumulative impacts on environmental values, and should encounter no appreciable opposition.

- ii. In those cases subject to Section 404 of the CWA after:
  - A. The district engineer, through consultation with federal and state fish and wildlife agencies, the Regional Administrator, U.S. Environmental Protection Agency (USEPA), the state water quality certifying agency, and, if appropriate, the state Coastal Zone Management Agency, develops a list of categories of activities proposed for authorization under LOP procedures;
  - B. The district engineer issues a public notice advertising the proposed list and the LOP procedures, requesting comments, and offering an opportunity for public hearing; and
  - C. A Section 401 Water Quality Certification (WQC) has been issued or waived and, if appropriate, Coastal Zone Management Act (CZMA) consistency concurrence obtained or presumed either on a generic or individual basis. Any project-specific regulated activities authorized by LOP must also meet the LOP general conditions listed below.

The new SSMP LOP procedures would be specifically pursuant to 33 CFR §325.2(e)(1)(ii).

# Background:

On March 22, 2021, the Corps published a Special Public Notice announcing the request from the State of California's Natural Resources Agency (CNRA), Department of Water Resources (DWR), and California Department of Fish and Wildlife (CDFW) (State Team) to establish new LOP procedures by which regulated activities associated with the implementation of SSMP 10-Year Plan projects could receive Corps permit authorization. The State of California is proposing to implement approximately 29,800 acres of habitat restoration and dust suppression projects on lakebed areas that have been, or will be, exposed at the Salton Sea by the year 2028. The SSMP 10-Year Plan would provide for multiple benefit projects that combine dust suppression with habitat restoration to the extent practicable. A minimum of 14,900 acres of proposed projects under the SSMP 10-Year Plan must be aquatic habitat restoration projects. These projects would primarily convert exposed lakebed to either pond habitat suitable for fish and wildlife or wetland habitat which would provide dust suppression as a secondary function. Similarly, while dust suppression projects would be designed to primarily improve air quality by suppressing fugitive dust emissions, they may also provide habitat benefits by establishing vegetation or creating wetland habitat. Within the Planning Area, opportunity areas have been identified for the Proposed Project where site-specific restoration and suppression projects would be proposed under the new SSMP LOP procedures (Figure 1).

The full SSMP 10-year Plan Project Description can be found on the State Team's website at: <u>https://saltonsea.ca.gov/planning/ssmp-draft-description-project/</u>.

# Location:

The approximately 63,000-acre proposed Planning Area for the Proposed Project would include various locations within, along, and adjacent to the Salton Sea, within or near the cities or towns of Mecca, Desert Shores, Salton City, Westmorland, Calipatria, and Bombay Beach in Imperial and Riverside counties, California (Figure 2). Specifically, the Proposed Project would generally occur within exposed lakebed areas located below an elevation of -228 feet mean sea level (msl) based on the North American Vertical Datum of 1988 (NAVD 1988)<sup>1</sup> and would be located on the following United States Geological Survey (USGS) 7.5-minute topographic quadrangle maps: Fink (USGS 2018), Wister (USGS 2018), Niland (USGS 2018), Calipatria (USGS 1976), Westmorland West (USGS 2018), Kane Spring (USGS 2018), Kane Spring NE (USGS 2018), Truckhaven (USGS 2018),

<sup>&</sup>lt;sup>1</sup> The conversion for this coordinate system is NAVD 1988=NGVD 29+2.1.

CESPL-RGS

Oasis (USGS 2018), Mecca (2018), Mortmar (USGS 2018), and Durmid (USGS 2018). The proposed Project Area is defined in aqua blue on Figure 2. Known jurisdictional waters of the United States (U.S.) that occur within the Proposed Project area include the Salton Sea and the Whitewater, New, and Alamo Rivers.

# SSMP LOP Terms, Procedures, Conditions, and Mitigation Framework:

Site-specific LOPs would be issued only for those covered activities where the proposed project meets all of the criteria identified in this notice. The Corps may exercise its discretion to determine whether a proposed project may be authorized under the new SSMP 10-Year Plan LOP procedures, may be authorized with the addition of special conditions, or may not be authorized under these procedures and will instead require alternative permit processing (Nationwide, Regional General, or Standard Individual Permit).

Cumulatively, SSMP projects authorized by these LOP procedures would result in no net loss of aquatic ecosystem functions and services but rather would provide a net benefit. However, in compliance with the Final Mitigation Rule 33 C.F.R. §332.3(k) and pursuant to Section 404(b)(1) Guidelines (40 C.F.R. § 230.91), compensatory mitigation for individual SSMP projects that would result in the permanent loss of aquatic resources may be required. Aquatic resource gains and benefits of the SSMP Program would be documented in annual reporting provided to the Corps. All temporary impacts to aquatic resources would be restored to preconstruction conditions as soon as practicable.

# A. LOP Terms:

To qualify for an LOP under these procedures, proposed projects must meet the following criteria:

- 1. Occur around the Salton Sea generally between the water surface elevations measured in 2003 and projected for 2028, i.e., marking the extent of the Salton Sea's recession for purposes of the SSMP 10-Year Plan (Figure 1);
- 2. Be consistent with the State of California's SSMP 10-Year Plan;
- 3. Be a covered activity associated with aquatic habitat restoration and/or dust suppression and restoration, as described herein (Table 1);
- 4. Result in no more than minor individual and cumulative impacts to the aquatic environment;
- 5. Comply with Section 404(b)(1) guidelines, SSMP LOP general conditions (Appendix A), and SSMP LOP mitigation framework (Appendix A).

# Proposed SSMP 10-Year Plan Covered Activities

The proposed covered activities eligible for authorization by an SSMP LOP are those that would require a discharge into waters of the U.S. and would be associated with the implementation of aquatic habitat restoration and dust suppression and restoration projects under the SSMP 10-Year Plan located around the Salton Sea (Table 1).

# Aquatic Habitat and Restoration Activities/Projects

# **Covered Activities**

LOP Procedures may be used to authorize permanent and temporary discharges of dredged or fill material into waters of the U.S. associated with aquatic resource habitat restoration around the Salton Sea consistent with the SSMP 10-Year Plan, including the following activities incidental to the construction and operation of SSMP 10-Year Plan projects:

- Habitat restoration and water quality improvement projects within the SSMP 10-Year Plan (Projects).
- Construction, enhancement, or removal of berms, including permanent berms for water diversion, temporary diversion during construction, earthen berms, installation of hard substrate on berms, such as riprap.
- Removal of invasive vegetation.
- Creation of pond habitat at different water depths and timing of inundation, including mudflats and shallow water, mid-depth habitat, deep-water habitat, swales or channels, bottom hard substrate.
- Installation of features to support bird nesting, resting, and foraging habitat, including floating islands, islands, snags or other vertical structures, areas of seasonal flooding.
- Creation of permanent vegetated wetlands and seasonally flooded habitats.
- Removal or installation of water conveyance and supply systems to provide water supply to the Projects, including:
  - Sedimentation/mixing basins, weirs and other structures in waterways to divert water,
  - Placement of check dams,
  - Water storage tanks,
  - o Installation, sampling and gaging monitoring and supply wells,
  - Drilling new groundwater wells,
  - Solar pump stations and well pumps installation,
  - o Inflow and outflow structures,
  - Dredge channels to pump stations or project infrastructure.
- Removal or installation of water dispersal and retention structures, including:
  - o Shallow earthen swales,
  - Bunds and micro-catchments,
  - Check dams, weirs and concrete pipe culverts,

- Retention basins,
- Storage basins,
- Irrigation network and furrows,
- Pumps and other water control infrastructure,
- Prefabricated concrete box/arch culvert (or bridge footing/abutment, etc.).

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- Installation of public amenities, passive recreation trails, ancillary public facilities within project nexus, including launch features for non-motorized boats, kayaks, paddle boards, passive recreation access compatible with an authorized aquatic resource habitat restoration or dust suppression project.
- Temporary construction, access, and dewatering involving temporary structures, work, and discharges, including cofferdams, necessary for construction activities, staging, or access fills or dewatering of construction sites, provided that the associated primary activity is an authorized project.

Upon completion of construction, temporary fill must be entirely removed to an area that has no waters of the U.S., dredged material must be returned to its original location, and the affected areas must be restored to pre-construction elevations.

- Linear crossings to construct, repair, or maintain roads for permanent access to aquatic restoration or dust suppression project sites.
- Crossings of those waters associated with the construction, maintenance, or repair of electrical and communication utility lines and poles. Oil and gas utilities and pipelines are excluded.
- Maintenance and repair of existing or constructed SSMP-related features, including:
  - Construction features repairs,
  - o Sediment removal (excavation or dredging, retrenching, periodic drainage),
  - Facilities maintenance,
  - Address potential for biological fouling at pipes and pumps in maintenance plans,
  - o Invasive vegetation monitoring and control,
  - Repair of storm water and erosion damage.
- Pre-construction survey and investigations activities:
  - Monitoring and investigation/data collection activities:
    - Geotechnical soil sampling,
    - Drilling monitoring wells,
    - Stream gage installation.
  - Road improvements, if necessary to perform monitoring or data collection activities.

- Compensatory mitigation.
- Only non-toxic and non-hazardous materials would be placed into the aquatic environment including:
  - Clean earthen fill material (backfill), including dredged or excavated source material.

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- Portland cement concrete or asphalt concrete,
- Aggregate base material,
- Ungrouted rock riprap slope protection (inert),
- Galvanized corrugated metal pipe(s),
- Rock-filled basket gabion(s)
- Filter fabric,
- Geotextile.
- Prefabricated concrete box/arch culvert (or bridge footing/abutment, etc.)

# **Ineligible Activities**

A Standard Individual Permit process may be required to authorize permanent discharges of dredged or fill material into waters of the U.S. for ineligible activities associated with aquatic habitat restoration projects, including but not limited to the following:

- Activities that would have substantial, unmitigated impacts to the aquatic environment.
- Activities that are inconsistent with eligible activities provisions for covered activities.
- Water importation.
- Recreation activities without project nexus, including recreation marinas, boat ramps, recreation access not associated with aquatic resource habitat restoration and dust suppression around the Salton Sea.
- Public amenities that conflict with the overall purpose and need of the proposed aquatic resource restoration Project.
- Use of tires for construction activities or breakwalls in waters of the U.S.
- Gabions placement within water of the U.S.
- Activities that would substantially alter a compensatory mitigation site previously established for a Corps permit.

# Covered Dust Suppression and Vegetation Enhancement Activities/ Projects

# **Covered Activities**

LOP Procedures may be used to authorize permanent and temporary discharges of dredged or fill material into waters of the U.S. associated with dust suppression and restoration around the Salton Sea consistent with the SSMP 10-Year Plan, when associated with the following types of activities:

- Water-reliant and waterless dust suppression techniques<sup>2</sup>:
- Establishment of (non-invasive) vegetation,
- Removal of invasive vegetation,
- Construction of shallow-water habitat,
- Construction of freshwater wetlands,
- Shallow flooding,
- Stormwater spreading,
- Temporary surface roughening,
- Dust suppressant application,
- Sand fencing,
- Engineered roughening,
- Gravel or other cover,
- Enhancing soil crusts.

The same features and activities listed in the Aquatic Habitat Projects can also apply to Dust Suppression and Vegetation Enhancement projects.

# **Ineligible Activities**

A Standard Individual Permit process may be required to authorize permanent discharges of dredged or fill material into waters of the U.S. for ineligible activities associated with dust suppression projects, including but not limited to the following:

<sup>&</sup>lt;sup>2</sup> The primary purpose of these activities is to decrease dust emissions on the exposed lakebed at the Salton Sea and are not required to demonstrate any net increase in functions of aquatic resources or meet specified ecological objectives or performance criteria.

- Activities that would have substantial, unmitigated impacts to the aquatic environment.
- Activities inconsistent with covered aquatic habitat restoration or dust suppression activities.

# **B. SSMP LOP Procedures:**

**1. Pre-Application Coordination –** The applicant (State Team) would be required to request a pre-application meeting with the Corps for all projects requiring authorization under the SSMP LOP procedures. The State Team would submit pre-application meeting requests to the Corps via email at <a href="mailto:splregssmp@usace.army.mil">splregssmp@usace.army.mil</a> with as much lead time as possible, preferably with at least 30 days' notice. The 30-day pre-filing requirement for a Section 401 WQC would be initiated by the request for a pre-application meeting. Upon receipt of the request, the Corps would assign a project Action Identification Number (AID#). The Corps AID# would be required in the subject line of all subsequent project-related correspondence and submittals.

Pre-application materials shall be made available in electronic form as designated by the Corps, once a Corps AID# has been assigned and shall include the following:

- a. A site location map and appropriate aerial and other imagery of the proposed project site and vicinity showing the project site and its geographical, physical, and environmental context;
- b. A delineation of all onsite aquatic resources conducted in accordance with the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual and its Regional Supplement for the Arid West Region (Version 2.0 or newer);
- c. A project description, including as much of the information identified under 33 CFR §325.1(d) "Content of application" as is available, including plan and profile views of the proposed work relative to potential waters of the U.S. only showing areas, types, and acreages of aquatic resources to be impacted by the proposed project;
- d. A draft report, pursuant to 33 CFR §325.1(e) and §323.6(a), addressing compliance with the USEPA's 404(b)(1) Guidelines at 40 CFR Part 2308, including an analysis of off-site and on-site practicable alternatives and the relative environmental impacts of those alternatives as compared to the environmental impacts of the proposed project;
- e. An explanation of how permanent losses and temporary impacts associated with the proposed activity are to be avoided, minimized, and compensated for and, if applicable a draft compensatory mitigation plan for permanent losses of waters of the U.S., in accordance with 33 CFR Part 332; and
- f. SSMP LOP project compliance checklist.

The updated Map and Drawing Standards for the South Pacific Division (SPD) Regulatory Program shall apply to the pre-application materials. All coordinates shall be provided in decimal degrees.

**2. Post Pre-application Coordination:** Following the pre-application coordination, the Corps would make an initial determination as to whether the project may qualify for an SSMP LOP based on a preliminary determination that the proposed project meets the following requirements:

- a. Complies with the CWA Section 404(b)(1) Guidelines;
- b. Meets the SSMP LOP criteria; and
- c. Determined that Standard Individual Permit processing with Public Notice review would not result in a substantive change in the proposed project or compensatory mitigation.

If an initial determination is made that the proposed project would not qualify for an SSMP LOP, the Corps would provide recommendations that would allow the project to qualify.

**3. LOP Application Submittal::** Where a site-specific approved jurisdictional determination is required by regulation or recommended by the Corps, the applicant (State Team) would not submit a permit application until the Corps has issued the final determination or instructed the applicant to proceed with submitting the application.

The applicant would notify the Corps of a permit request via email at <a href="mailto:splregssmp@usace.army.mil">splregssmp@usace.army.mil</a>, ensuring the assigned Corps AID# is provided in the subject line. The application package would be provided in electronic form on the designated FTP site at the time of the permit request notification.

To be considered complete, applications submitted for review under the SSMP LOP procedures would include all of the information required for a standard permit application pursuant to 33 CFR §325.1(d), as well as the additional information listed below:

a. A completed, signed Department of the Army Engineering Form 4345, which refers to the Corps' AID#;

Statement of ppre -application coordination with the Corps, and other agencies, if

- b. conducted, including a brief summary of any project-specific comments or concerns made by each agency and responses to them;
- c. An issued approved or preliminary Corps jurisdictional determination for the project area, if applicable, including a copy of the aquatic resources delineation map/drawing referenced in the Corps' determination;
- d. A completed ORM database bulk upload spreadsheet;
- e. Appropriate surveys, inventories, or reports that would allow the Corps to make a determination of the effect of the proposed project (and if necessary, consult) pursuant to the federal Endangered Species Act (ESA) or evidence of incidental take authorizations under ESA. A project-specific ESA report that makes a preliminary effect determination and complies with the process described in any program-level biological opinion may be required;
- f. Evidence of compliance with Section 106 of the National Historic Preservation Act (NHPA) Programmatic Agreement, including a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties, if applicable. A cultural resources report would be provided as a separate PDF for confidentiality;
- g. A compensatory mitigation plan in accordance with 33 CFR Part 332 and the Los Angeles District's Mitigation and Monitoring Guidelines, if applicable. If compensatory mitigation is proposed at an approved mitigation bank or in-lieu fee program (ILF), the proposed bank or ILF site and type and amount of credits to be obtained must be identified;
- h. Copy of Section 401 Water Quality Certification application; and
- i. A completed project compliance checklist.

The updated Map and Drawing Standards for the SPD Regulatory Program shall apply to the application materials. All coordinates shall be provided in decimal degrees.

# 4. LOP Application Processing Procedures:

- a. Upon receipt of an application notification, the Corps would provide an email confirmation to the applicant and include the assigned Corps project manager.
- b. Within approximately fifteen (15) calendar days of receipt of an application, the Corps would determine if the application is complete. If an application is incomplete, the Corps will notify the applicant of the needed information items and the applicant will be required to resubmit.
- c. Within approximately fifteen (15) calendar days of receiving a complete application, the Corps would notify the applicable agencies that the complete application submittal is available on the designated FTP site and request the agencies provide comments on the following subjects:
  - i. Minimization of impacts to aquatic resources to the maximum extent practicable;
  - ii.Consistency of the proposed project and any required compensatory mitigation with the SSMP; and
  - iii. Whether federally listed species issues have been resolved in a manner consistent with the programmatic biological opinion for the SSMP 10-Year Plan.
- d. The agencies would provide comments to the Corps within 21 calendar days. Agency comments would be provided via email to the appropriate Corps project manager.
- e. Resolution or status of compliance with Section 106 of the NHPA, if applicable.
- f. Resolution or status of the Section 401 Water Quality Certification.
- g. Resolution or status of ESA Section 7, if applicable.
- h. After all comments are received from the resource agencies, the Corps would perform a final evaluation of the project. Any problems identified by the resource agencies during the LOP notification process would be resolved before an LOP is issued.
- i. The Corps would review the comments received and make a final determination within 120 calendar days of receiving a complete application, unless additional time is required to demonstrate compliance with Section 7 of ESA or Section 106 of NHPA.
- j. If the project meets the criteria for LOP authorization, an LOP would be issued, and
- k. If the project fails to meet the criteria for LOP authorization, the Corps would notify the applicant of the need for review through a Standard Individual Permit process.
- 5. SSMP LOP Conditions: See Appendix A.
- 6. SSMP LOP Mitigation Framework: See Appendix A.

# C. Definitions:

Note, the following definitions of "permanent loss" and "temporary impacts" that are used in these proposed SSMP LOP procedures are provided for clarity:

**Permanent Loss:** Waters of the U.S. that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity constitutes a loss of waters. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. [86 Fed. Reg. 2876 (Jan. 13, 2021)].

**Temporary Impacts:** Adverse effects to aquatic resources that occur for a short duration during authorized activities and are associated with the temporary discharge of dredged or fill material for construction or maintenance. Following completion of the permitted work, temporary structures must be removed to the maximum extent practicable, after their use has been discontinued, and all temporary fills must be removed in their entirety and the affected areas, including aquatic resources returned to pre-construction elevations and contours, conditions, and functionality, including revegetation as appropriate. Waters of the U.S. temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the U.S. [86 Fed. Reg. 2876 (Jan. 13, 2021)].

**D. References:** All documents referenced in this notice are available on or through the Corps' website at: <a href="http://www.spl.usace.army.mil/regulatory.html">www.spl.usace.army.mil/regulatory.html</a>.

# Appendix A: Salton Sea Management Program (SSMP) 10-Year Plan Letter of Permission Procedures – Draft Conditions

# A. SSMP LOP Conditions

Any activity authorized by an SSMP LOP must meet the 28 general conditions listed below. Additionally, the Corps may include project-specific special permit conditions for any SSMP LOP.

General Conditions –			
1.	Avoidance and Minimization. The permittee must provide a written statement describing avoidance and minimization measures used to minimize discharges to waters of the U. S. at the project site to the maximum extent practicable.		
2.	<i>Ineligible Activities</i> . Projects ineligible for an SSMP LOP include activities not evaluated for these LOP Procedures, activities that substantially alter a previously established compensatory mitigation site, or activities that are not associated with SSMP 10-Year Plan aquatic habitat restoration and dust suppression projects around the Salton Sea.		
3.	<i>Mitigation Policy.</i> On a case-by-case basis, compensatory mitigation may be required in compliance with the Final Mitigation Rule 33 C.F.R. §332.3(k) and pursuant to Section 404(b)(1) Guidelines [40 C.F.R. § 230.91]. Compensatory mitigation may be required to offset adverse impacts associated with unavoidable impacts to the aquatic ecosystem and the human environment (see SSMP LOP Procedures Appendix A, Part B).		
4.	Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls, such as siltation or turbidity curtains, sedimentation basins, hay bales, and/or other means designed to minimize turbidity in the watercourse, shall be used and maintained in effective operating condition during project implementation. Projects are exempt from implementing controls if site conditions preclude their use or if site conditions are such that the proposed work would not increase turbidity levels above preconstruction baseline levels. All exposed soil and other fills, as well as any work below the ordinary high-water mark or high tide line, must be stabilized at the earliest practicable date to preclude inadvertent, adverse effects to adjacent and downstream aquatic resources and no later than November of the year the work is initiated to prevent erosion from storm events.		
5.	<i>Equipment</i> . If personnel would not be subjected to additional, potentially hazardous conditions, heavy equipment working in or crossing wetlands shall be placed on temporary construction mats (timber, steel, geotextile, rubber, etc.), or other measures must be taken to minimize soil disturbance, such as using low pressure equipment. Temporary construction mats shall be removed promptly following construction completion.		

- 6. *Suitable Material.* No activity may use unsuitable materials (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (per Section 307 of the Clean Water Act).
- 7. Management of Water Flows. To the maximum extent practicable, the preconstruction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the preconstruction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
- 8. *Removal of Temporary Structures and Fills.* Any temporary fills must be removed in their entirety and the affected areas returned to their preconstruction conditions, including planting native riparian and/or wetland vegetation. If it is determined that the area of temporary impact has naturally reestablished native riparian and/or wetland vegetation to preconstruction conditions within two years from the date site restoration work is complete, the permittee may not be required to restore the riparian and/or wetland vegetation. However, planting may be required in the event vegetation does not naturally reestablish. Also, Exotic Species Management may be required to prevent the establishment of invasive exotic vegetation. (See General Condition No. 14).
- 9. *Proper Maintenance*. Any authorized structure or fill shall be properly maintained, including maintenance to ensure safety and compliance with the terms and conditions of the SSMP LOP, including any special permit conditions. The permittee is not relieved of this requirement if they desire to abandon the permitted activity, although they may make a good faith transfer of the permit to a third party in compliance with General Condition No. 25 below. Should the permittee wish to cease to maintain the authorized activity or desire to abandon it without a good faith transfer, they must obtain a modification of the issued SSMP LOP from the Corps, which may require restoration of the affected area.
- 10. *Preventive Measures*. Measures must be adopted to prevent potential pollutants from entering the watercourse. Within the project area, construction materials, and debris, including fuels, oil, and other liquid substances, shall be stored in a manner as to prevent any runoff from entering jurisdictional areas.
- 11. *Staging of Equipment*. Staging, storage, fueling, and maintenance of equipment must be located outside of the waters of the U.S., including wetlands, in areas where potential spilled materials will not be able to enter any waterway or other body of water.

- 12. *Work Limits*. All work authorized by an SSMP LOP shall be performed in strict compliance with the approved permit plans, which would be attached to the issued permit. The permittee shall ensure that the construction design plans for the project do not deviate from the approved permit plans. Any modification to the permit plans must be approved by the Corps prior to any active construction in waters of the U.S. or wetlands.
- 13. Avoidance of Breeding Season. With regard to federally listed avian species, avoidance of breeding season requirements shall be those specified in the Federal Endangered Species Act Section 7 consultation for the LOP (See General Condition 21). For all other avian species, to the maximum extent practicable initial vegetation clearing must occur in waters of the U.S. between September 15 and March 15, which is outside the breeding season, or be conducted in compliance with the Nesting Bird Management Plan.
- 14. *Exotic Species Management*. All salt cedar (*Tamarix spp.*), and other invasive nonnative plants categorized as "High" on the California Invasive Plant Council's (Cal-IPC) Invasive Plant Inventory (<u>http://www.cal-ipc.org/ip/inventory/index.php#categories</u>), must be removed from the affected area. The permittee must ensure that the affected area remainsfree from these invasive, non-native species for a period of five years from completion of the project.
- 15. *Site Inspections*. The Corps shall be allowed to inspect the site at any time during and immediately after project implementation. In addition, compliance inspections of all mitigation sites shall be allowed at any time.
- 16. *Posting of Conditions*. A copy of the SMMP LOP General Conditions shall be included in all bid packages for the project and be available at the work site at all times during periodsof work and must be presented upon request by any Corps or other agency personnel with a reasonable reason for making such a request.
- 17. Pre-Project Operations and Maintenance Plan. The permittee will develop a written Operations and Maintenance (O&M) plan to be submitted for review to landowners and applicable regulatory agencies. The plan will include: a written description for all O&M activities, a description of the permanent and temporary impacts in waters of the U.S., purpose of the proposed O&M activity, maps showing O&M location(s) (including decimal degrees latitude and longitude coordinates), location of staging and stockpiling areas, written documentation regarding compliance with all applicable special conditions of this permit, and a description of all measures to avoid and minimize impacts to waters of the U.S. and other sensitive habitats and species.
- 18. *Post-Project Report*. Within 45 days of completion of impacts to waters of the U.S., including wetlands, as-built drawings with an overlay of federal jurisdictional waters that were impacted and avoided must be submitted to the Corps. Post-project photographs, which document compliance with permit conditions, must also be provided.

Within six months of completion of each phase of authorized discharges of dredged or fill material into waters of the U.S., including wetlands, and upon completion of each

authorized O&M activity, the permittee shall submit a post-project implementation memorandum to the Corps that includes the following information:

- a. Date(s) work within waters of the U.S., including wetlands, was initiated and completed;
- b. Summary of compliance status with each special condition of the issued permit (including any non-compliance that previously occurred or is currently occurring and corrective actions taken or proposed to achieve compliance);
- c. Color, annotated photographs (including map of photopoints and decimal degrees latitude and longitude coordinates) taken at the project site before and after construction for those aspects directly associated with permanent impacts to waters of the U.S., including wetlands, such that the extent of authorized discharges of fill material can be verified;
- d. One copy of as-built drawings for the entire project. Electronic submittal (Adobe PDF format) is required; and
- e. Signed Certificate of Compliance (See General Condition 26).
- 19. Annual Reporting. An annual report on completed O&M activities, conducted between July 1 to June 30 of each year, subject to this permit shall be submitted to the Corps by October 1 of each year. This report will also be provided to the CBRWQCB, CDFW and USFWS. The annual report will also include:
  - a. A list of authorized completed O&M activities;
  - b. Discussion that impacts at each site were not exceeded;
  - c. Photographs shall be included of sites that are representative of each activity that was performed under the permit;
  - d. This report shall be received and reviewed by the Corps for compliance with the special conditions of this permit and then provided to the resource agencies for their review; and
  - e. Field site visits may be performed by the Corps, as a part of the compliance evaluation.
- 20. Water Quality. An individual Section 401 Water Quality Certification must be obtained (see 33 C.F.R. 330.4(c)).
- 21. Endangered Species.
  - a. No activity is authorized which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal ESA, or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized which "may affect" a listed speciesor critical habitat, unless ESA Section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat that are caused by the LOP activity and are later in time, but still are reasonably certain to occur.

- b. Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA Section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under Section 7 of the ESA.
- c. Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect federally listed endangered or threatened species or designated critical habitat, the application must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat, and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete application. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until ESA Section 7 consultation has been completed.
- d. As a result of formal or informal consultation with the USFWS the district engineer may add species-specific permit conditions to LOPs.
- e. Authorization of an activity by an LOP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS, the ESA prohibits any person subject to the jurisdiction of the U.S. to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap,capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.
- f. If the non-federal permittee has a valid ESA Section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed LOP activity, the non-federal applicant should provide a copy of that ESA Section 10(a)(1)(B) permit with their application. The district engineer will coordinate with the agency that issued the ESA Section 10(a)(1)(B) permit to determine whether the proposed LOP activity and the associated incidental take were considered in the internal ESA Section 7

consultation conducted for the ESA Section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed LOP activity and the associated incidental take were considered in the internal ESA Section 7 consultation for the ESA Section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA Section 7 consultation for the proposed LOP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete application whether the ESA Section 10(a)(1)(B) permit covers the proposed LOP activity or whether additional ESA Section 7 consultation is required.

- g. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS or their world wide web pages at <a href="http://www.fws.gov/">http://www.fws.gov/</a>.
- h. Activities authorized under LOP Procedures shall comply with the conservation measures identified in the Biological Opinion to ensure the activity will not adversely affect federally listed species; however, additional project-specific measures may be required pursuant to an ESA Section 7 consultation for a specific project.

22. Historic Properties.

- a. In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places (Register), the activity is not authorized, until the requirements of Section 106 of the NHPA have been satisfied.
- b. Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the NHPA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under Section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with Section 106.
- c. Non-federal permittees must submit information on historic properties that may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the SHPO or Tribal Historic Preservation Officer (THPO), as appropriate, and the Register (see 33 C.F.R. §330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these identification efforts, the district engineer shall determine whether the proposed activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is

required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of Section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that NHPA Section 106 consultation has been completed.

- d. If NHPA Section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.
- e. Section 110k of the NHPA [54 U.S.C.306113] prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, andother parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.
- 23. Discovery of Previously Unknown Remains and Artifacts. If the permittee discovers any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by an SSMP LOP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

- 24. Air Quality. No activity is authorized that causes or contributes to any new violation of national ambient air quality standards, increases the frequency or severity of any existing violation of such standards, or delays timely attainment of any such standard or interim emission reductions, as described in the applicable California State Implementation Plan for the Salton Sea Air Basin. As part of the Corps application package, the applicant shall submit an air quality emission and impact analysis for the proposed activity if the project would result in long-term or permanent stationary (point or area) source or indirect mobile source emissions, or if the proposed activity would result in area source and direct mobile source emissions that exceed the annual de minimis emissions thresholds for any criteria air pollutant or its precursors.
- 25. Transfer of SSMP LOPs. If the permittee sells the property or does not renew a right-ofway agreement, temporary encroachment permit, or land access agreement associated with an SSMP LOP, the permittee may transfer the LOP to the new owner by submitting a letter to the Corps to validate the transfer. The letter may be submitted via email at splregssmp@usace.army.mil. A copy of the issued LOP and the name and all available contact information, including company name, addresses, telephone numbers, and email, must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this SSMP LOP are still in existence at the time the property is transferred, the terms and conditions of this SSMP LOP, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this SSMP LOP and the associated liabilities associated with compliance with its terms and conditions, the transferee must sign and date below."

(Transferee)

(Date)

- 26. Compliance Certification. Each permittee who receives an SSMP LOP from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation within 45 days after completing construction activities. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the SSMP LOP. The certification document will include:
  - a. A statement that the authorized activity was done in accordance with the SSMP LOPauthorization, including any general or activity-specific conditions;
  - b. A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(I)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and
  - c. The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

- 27. Activities Affecting Structures or Works Built by the United States. If an SSMP LOP activity also requires review by, or permission from, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a Corps federally authorized Civil Works project (a "Corps project") the activity is not authorized until the Corps Engineering Division has issued the Section 408 permission to alter, occupy, or use the Corps project, and the district engineer issues the written SSMP LOP authorization.
- 28. Unauthorized Dredge and/or Fill. Except as authorized by this permit or any Corpsapproved modification to this permit, no excavation or fill shall take place at any time in the construction or maintenance of this project within wetlands or non-wetland waters of the U.S. This permit does not authorize temporary placement or double handling of excavated or fill material within jurisdictional wetlands or waters outside the permitted area(s). This prohibition applies to all borrow and fill activities connected with this project. Unauthorized impacts could result in permit suspension and revocation, administrative, civil, or criminal penalties, and/or substantial, additional, compensatory mitigation requirements. As such, in accordance with the approved permit drawings attached to this permit, the permittee shall install high-visibility silt fencing clearly marking the limits of disturbance to ensure mechanized equipment does not enter and/or work does not occur in preserved waters of the U.S. and/or wetlands.

# B. Salton Sea Management Program 10-Year Plan Mitigation Framework

Mitigation Policies –

The following mitigation policies apply to LOPs (and Nationwide, Standard Individual, and Regional General Permits, as appropriate) issued within the Salton Sea and the New, Alamo, and Whitewater Rivers, adjacent creeks, washes, and agricultural drains.

# 1. Mitigation Sequencing. Under the Salton Sea Management Program 10-Year Plan the mitigation sequencing required pursuant to the CWA Section 404(b)(1) Guidelines (40 C.F.R. Part 230 and the Memorandum of Agreement (MOA) between USEPA and the Department of the Army, dated February 6, 1990), whereby the discharge of dredged or fill material into aquatic resources within the Corps' jurisdiction (i.e., waters of the U.S.) must first be avoided and/or minimized to the maximum extent practicable, is being applied to the SSMP Planning Area as well as at the individual project scale. Minimization measures would be met by demonstrating consistency with the SSMP LOP general and special conditions. After avoidance and minimization measures have been implemented to the maximum extent practicable, compensatory mitigation may be required to offset any unavoidable adverse impacts to ensure no net loss of aquatic resource area and functions, pursuant to the 404(b)(1) Guidelines.

2. No Net Loss in Acreage and Functions. Consistent with the Corps-USEPA MOA, the Corps' RGL 02-02, and the <u>Final Mitigation Rule (33 C.F.R. Parts 325 and 332 [40 C.F.R. Part 230]</u>), overall acreage, services, and functions of wetlands should not be reduced within the SSMP 10-Year Plan Planning Area at the program level. In consideration of the SSMP 10-Year Plan Process, permanent losses of aquatic resources (wetland and non-wetland) for individual SSMP projects shall be mitigated within the Salton Sea Watershed. The amount of required compensatory mitigation must be approved by the Corps, and, to the extent practicable, must be sufficient to replace lost aquatic resource functions.

- Preparation of a Mitigation Plan. All habitat mitigation and monitoring plans shall comply with the requirements of the <u>Corps/EPA Final Mitigation Rule "Compensatory</u> <u>Mitigation for Losses of Aquatic Resources"</u> (33 C.F.R. Parts 325 and 332 [40 C.F.R. Part 230]) and the <u>Final 2015 Regional Compensatory Mitigation And Monitoring</u> <u>Guidelines for South Pacific Division USACE</u> (dated January 12, 2015, or as subsequently revised). The mitigation plan shall be reviewed in conformance with <u>SPD</u> <u>Uniform Performance Standards for Compensatory Mitigation Requirements (QMS Procedure No. 12505)</u>.
- 4. *Recommended Restoration.* The Corps will evaluate restoration design plans for compensatory mitigation sites in consideration of the SSMP 10-Year Plan Strategic Mitigation Plan. The Corps will also apply its RegulatoryProgram <u>Standard Operating Procedure for Evaluation of Proposed Compensatory Mitigation Sites (12512-SPL).</u>

- 5. *Calculating Compensatory Mitigation.* Should individual SSMP projects or the SSMP Program overall result in the permanent loss of aquatic resources, compensatory mitigation shall be provided in conformance with SPD's <u>Standard Operating Procedure for Determination of Mitigation Ratios.</u>
- 6. *Temporary Impacts*. The following mitigation measures would be required for projects or activities with temporary impacts to aquatic resources.
  - a. Restoration On-site. Following completion of construction, temporary fills must be removed in their entirety and placed in an upland area and contained or stabilized to prevent inadvertent releases to adjacent and/or downstream aquatic resources. Dredged material must be returned to its original location. All affected areas must be restored to preconstruction contours and elevations and revegetated, as appropriate (see 6.b.). Revegetation shall commence within three months following completion of the ground restoration work and must be completed within one growing season. If revegetation cannot begin due to seasonal conflicts (e.g., authorized impacts occurring in late fall/early winter should and shall not be revegetated until seasonal conditions are conducive to revegetation), exposed earth surfaces shall be stabilized immediately utilizing appropriate best management practices, such as biodegradable jute netting or straw matting, to minimize potential erosion caused by wind or water.
  - b. Preparation of a Revegetation Plan. All onsite revegetation efforts require preparation of a revegetation plan. The plan must be approved by the Corps prior to implementation. Revegetation is a minimization measure and does not necessitate preparation of a compensatory mitigation plan.
- 7. Third-Party Mitigation Program or Mitigation Bank. In accordance with 33 C.F.R. §332.8, an alternative method to satisfy any compensatory mitigation requirements is through the purchase of credits or payment of fees to a Corps-approved third-party mitigation program within the Watershed.





# SALTON SEA 10-YEAR MANAGEMENT PLAN PROJECT REVIEW FORM

# **INTRODUCTION:**

The Applicant will complete a Service Activity Review Form that provides an effects determination based on the pre-application materials provided. The Service will have 30 calendar days to review the Activity Review Form and provide a response.

# **Instructions:**

- 1. Read the Salton Sea 10-Year Management Plan Programmatic Biological Opinion (SSMP 10-Year Plan PBO) to determine if the project is consistent with the Activity Types and Construction Features in the SSMP 10-Year Plan PBO.
- 2. Review the Salton Sea 10-Year Management Plan Program Administration for Endangered Species Act (ESA) Section 7 compliance with the U.S. Fish and Wildlife Service (USFWS) in the Letter Of Permission (LOP) Procedures document. Please note that USFWS Ecological Services Palm Springs Fish and Wildlife Office welcomes early coordination on all projects expecting to use the PBO. Either the Action Agency or the Action Agency and Project Applicant can contact the Palm Springs Fish and Wildlife Office for technical assistance prior to submitting this form.
- 3. Complete pages 2–7 of this form in their entirety. Attach all necessary documents, maps, and photos as outlined in the Project Description Checklist on page 4. Attach the biologist's qualification information as outlined on page 5.
- 4. For the Conservation Measures (page 6), either indicate that the measures do not apply or complete and include measures.
- 5. Complete the project approval and signatures page (page 7).
- 6. Report all injury or mortality of listed species to the Palm Springs Fish and Wildlife Office within 48 hours.
- 7. Follow annual reporting requirements as outlined in the SSMP 10-Year Plan PBO and SSMP LOP process.

# **GENERAL INFORMATION**

Please provide the following information:

# **Project Applicant:**

**Project Name:** 

**Proposed Start Date:** 

Contact Name:

Phone:

# Lead Action Agency:

Contact Name:

Phone:

Email:

Email:

**Proposed End Date:** 

**Cooperating Agency(s):** Include Contact Information for all Cooperating Agencies (attach additional sheets as necessary)

Contact Name:	Agency:
Phone:	Email:
Contact Name:	Agency:
Phone:	Email:
Contact Name:	Agency:
Phone:	Email:

# **PROJECT INFORMATION**

Project Activity Types	Check all that apply
Collect Data to support aquatic habitat, dust suppression, and restoration projects	
Construct aquatic habitat ponds	
Conduct surface roughening	
Install sand fencing	
Conduct soil crust enhancements	
Conduct shallow-water habitat dust suppression	
Create stormwater spreading areas	
Construct permanent vegetated wetlands	
Apply dust suppressants or surface stabilizers	
Construct engineered roughness	
Establish vegetation	
Create shallow flooding areas	

Additional Activities/Information

# **PROJECT DESCRIPTION:**

Include a project description (PD) as an attachment to this Activity Form. Use the following checklist to ensure that the project description includes all necessary information.

Information to Include	Check when added to PD
Project goals and objectives.	
An Official Species List from the USFWS Information for Planning and Consultation (IPaC) online tool to identify the listed species of interest at the project location (based on this evaluation, identification of the Covered Species, presence of suitable habitat onsite, and their potential to occur onsite).	
Include the number generated from IPaC for USFWS tracking purposes.	
Description of the activity type(s) and construction features used (breakwater for construction, check dam, interception ditch, etc.).	
Project dimensions.	
Project area maps.	
Description of construction activities anticipated (types of equipment, timing, and staging areas or access roads required) and the materials that will be used.	
If dewatering of the project site will be necessary, a description of temporary dewatering methods, including the names and contact information for all Service-approved Biologist(s) who will be onsite to capture desert pupfish or monitor for Yuma Ridgway's rail.	
Construction start and end dates, including specific dates of in-water work and the application of work windows.	
In instances when vegetation will be affected as a result of the project (including removal and replacement), a visual assessment of dominant native shrubs and trees, approximate species diversity, and approximate acreage or square feet.	
Description of existing site conditions and an explanation of how proposed activities improve or maintain these conditions for desert pupfish and Yuma Ridgway's rail.	
Concise summary of effects to listed species from the proposed project in conjunction with any conservation measures that will be implemented. Briefly describe the anticipated effects for each of the affected species (e.g. loss of habitat, handling and relocation, take, etc.).	
Information for biologists seeking Service-approval. See details regarding Service-approved biologists below (page 5).	
Any modified conservation measures as indicated by the checklist below.	
All required plans associated with the project as required by applicable conservation measures, e.g., adaptive management and monitoring plan (CM 8)	

# **AFFECTED SPECIES**

Complete the following table by indicating which species will be affected by the project; whether the species occurs or is assumed to occur within the project area with the year of the most recent known occurrence; and whether incidental take of the species is anticipated. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Species and Critical Habitat	No Effect	Not Likely To Adversely Affect	Likely To Adversely Affect	
Yellow-billed Cuckoo [western distinct population segment (DPS; <i>Coccyzus americanus</i> )]				
Southwestern Willow Flycatcher (Empidonax traillii extimus)				
Least Bell's Vireo (Vireo bellii pusillus)				
Yuma Ridgway's (=clapper) rail [Rallus obsoletus (=longirostris) yumanensis]				
Desert pupfish (Cyprinodon macularius)				
Other federally listed endangered or threatened species				

# **USFWS APPROVED BIOLOGISTS:**

Submit the following information for each biologist seeking USFWS approval.

Information to Include	Check when added to PD
For biologists who have permits for the requested work (e.g., 10(a)1(A) Recovery permit) or have been previously approved by the Service for the work being requested, provide the permits held to conduct the requested activities and/or the project reference number and date of the previous Service approvals.	
For biologists who do not have permits or have not been previously approved for the requested work, submit the following:	
• A list of their experience conducting each of the requested activities including the number of hours worked. ( <i>Be specific</i> ).	
• A list of any trainings that are relevant to the requested activities.	
• A resume which includes all relevant work experience and references that can speak to the biologists' experience conducting the requested activities	

# **CONSERVATION MEASURES:**

Review all programmatic conservation measures (CM) and indicate whether the measure will be implemented, is not applicable, or a modified measure has been proposed.

Information to Include		Will be implemented	Not Applicable	Modification Proposed
CM 1.	Prepare and Implement a Habitat Protection, Mitigation, and Restoration Program.			
CM 2.	Selenium monitoring.			
СМ 3.	Prepare and implement a desert pupfish protection and relocation plan.			
CM 4.	Prepare and implement a desert pupfish inoculation plan.			
CM 5.	Prepare and implement a project-level western yellow-billed cuckoo, southwestern willow flycatcher, and least Bell's Vireo management and survey plan.			
СМ 6.	Prepare and implement a project-level Yuma Ridgway's rail management and survey plan.			
СМ 7.	Design interception canals to minimize alteration of water levels in adjacent marshes.			
CM 8.	Prepare and implement an Adaptive Management and Monitoring Plan.			
CM 9.	Herbicide and pesticide treatments.			
CM 10.	Prepare and include any Species' specific conservation measures.			

Include any modified measures in the project description. All required plans (e.g. herbicide use plan, capture and relocation plan, monitoring plan) should also be included as a part of the project description.

# **CUMULATIVE ACTIONS**

Please identify any future state or private activities, not involving federal actions, that may affect Covered Species in the general area of the project, if known:
## **PROJECT APPROVAL AND SIGNATURES**

*To be completed by the Project Proponent and/or the Action Agency.* 

This ESA Section 7 Activity Form and its attachments have been submitted to the Service for their consideration to include the described Salton Sea Management Program sitespecific project among the projects included in the February 23, 2023, programmatic biological opinion (Service File Number: 22-0080603-S7). Upon approval by the Service, we agree to conduct the activities as specified in this ESA Section 7(a)(2) Activity Form and its attachments according to the terms and conditions of the February 23, 2023, PBO and its supporting documents. We also acknowledge that any applicable reasonable and prudent measures and terms and conditions included in the PBO incidental take statement are non-discretionary and must be undertaken by the Action Agency and Applicant, and included in any permit or other authorization issued by the Action Agency to the Applicant, for the exemption in ESA section 7(0)(2) to apply.

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ct Description attached.

Project Area Map(s) and GIS Information attached.

Biologist(s) information seeking USFWS approval attached.

## **Project Applicant**

Lead Action Agency

Name:

Title:

Title:

Name:

Organization:

Agency:

Organization/Agency Notes: