

Appendix B
Shoreline Biological Habitat Assessment

**GWF OUTFALL PIPE, BAY POINT, CONTRA COSTA SHORELINE
BIOLOGICAL HABITAT ASSESSMENT
with attention to special status species**



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BACKGROUND

On 5 March 2014 Avocet Research Associates, LLC (hereafter ARA), entered into an agreement with TRC Solutions to conduct a biological assessment of tidal marsh habitat associated with the GWF outfall pipe at Bay Point, Contra Costa Co., California (email from Elizabeth Copley AICP, TRC Planning & Licensing Services, 5 March 2014).

We understand that GWF Power Systems intends to remove the in-water portions of the outfall pipe and diffuser and the timber markers at the outfall. We also understand that removal of the remaining above-ground piping across tidal marsh is being considered and GWF wishes to have information on the environmental resources onsite to develop a removal plan that may be acceptable to regulators.

METHODOLOGY

ARA Senior Biologist Mary Anne Flett conducted field reconnaissance of the site on 10 March 2014. Ms. Flett surveyed the marshland within 750 feet (~230 meters) of the outfall pipe covering approximately 20.3 acres (8.2 hectares) of habitat bordering approximately 1500 feet (450 meters) of shoreline (Figure 1). This assessment was informed by the results of that site visit, a literature review (see References), a query the California Natural Diversity Data Base (14 March 2014) and personal knowledge of the Suisun ecosystem (J. Evens, ARA Principal.).

HABITAT DESCRIPTION

The site is located along the Contra Costa shoreline of Suisun Bay and in an area classified as “muted tidal marsh”.¹ Vegetated portions of the site provide virtually 100 percent vegetative cover in the marshland adjacent to the GWF outfall pipe along its length on the west side and north of the Alum Pond (Figure 1).

The area evaluated was comprised of the following percentages of habitat types (estimated by remote sensing):

Unvegetated Alum Pond 15.8% (3.2 ac/1.3 ha)

Disturbed low-quality marsh and access roads 25.6% (5.2 ac/2.1 ha)

Tidal salt marsh 58.6% (11.9 ac/4.8 ha)

¹ http://www.dfg.ca.gov/delta/suisunmarsh/atlas/images/wetland_types.jpg

Based on the estimates of vegetative cover made in the field, the marshlands west of the outfall pipe and north of the Alum Pond (Figures 1, 4, 6) are dominated by emergent halophytes with the following percentages of vegetative cover: pickleweed (*Sarcocornia pacifica*) [70%]; rushes (*Juncus spp.*) [15%]; common reed (*Phragmites australis*) [10%]; and patches of ruderal vegetation, primarily common pepperweed (*Lepidium densiflorum*) [5%]. The plant associations observed at the site are typical of middle tidal salt marsh at elevations near and above Mean High Water (MHW) within the San Francisco Bay estuary (Goals Project 1999).

The parcel of low elevation marsh northeast of the access road and the Alum Pond (Figure 1) is disturbed, low-quality marshland with the following vegetative composition (estimated in the field): *Juncus* [40%]; pickleweed [35%]; cattail (*Typha spp.*) [10%] bulrush (*Schoenoplectus spp.*) [5%]; ruderal vegetation [8%]; and gumplant (*Grindelia stricta*) [1 %].

SPECIAL STATUS SPECIES

We considered special status flora and fauna occurring (or potentially occurring) on the site, with the exception of invertebrates or subtidal organisms.

TABLE 1. SPECIAL STATUS SPECIES

TAXON	STATUS*
FLORA	
Mason's lilaepsis (<i>Lilaeosis masonii</i>)	CNPS 1B.1
Delta tule pea (<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>)	CNPS 1B.2
Soft bird's beak (<i>Cordylanthus mollis</i> ssp. <i>mollis</i>)	FE, SR
FAUNA	
"California" Least Tern (<i>Sterna antillarum browni</i>)	FE, SE
Northern Harrier (<i>Circus cyaneus</i>)	BSSC (3)
California Clapper Rail (<i>Rallus longirostris obsoletus</i>)	FE, SE
California Black Rail (<i>Laterallus jamaicensis cortuniculus</i>)	ST
"San Francisco" Common Yellowthroat (<i>Geothlypis trichas sinuosa</i>)	BSSC (3)
"Suisun" Song Sparrow (<i>Melospiza melodia maxillaries</i>)	BSSC (3)
"Salt Marsh" Harvest Mouse (<i>Reithrodontomys raviventris halicostus</i>)	FE, FP

Table 1. Status codes

BSSC (3): California Bird Species of Special Concern, priority 3.

CNPS 1B: "rare, threatened or endangered in CA and elsewhere."

FE: Federally Endangered

FP: California Department of Fish and Wildlife "fully protected."

SE: State endangered
ST: State threatened
SR: State rare
SSC: California Species of Special Concern (CDFW)

Three species of special status tidal marsh plants have been reported from the tidal marshlands associated with the project site (Table 1, Figure 2). None were observed during our single field visit. Each of these plants is classified as California Rare Plant Rank 1B therefore meeting the definitions of Sections. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is important that they be considered during preparation of environmental documents relating to CEQA. If the pipe removal project avoids the marsh plain and accesses the site on the existing levee or along the pipeline route, these plants should not be disturbed.

SPECIES ACCOUNTS

The following wildlife species have been reported in the vicinity of the project site (CNDDDB, Figs. 3) and their individual status is evaluated below.

California Least Tern (CLT)

The site does not support nesting sites for this tern. Proximate nesting is known from the Pacific Gas and Electric Pittsburg Power Plant (near Mallard I.), 3.6 mi (5.8 km) east of the project site. Terns forage in bay waters along the shoreline adjacent to the tidal marsh from April through August. If removal activities are conducted outside these months, terns will not be disturbed.

Northern Harrier (NOHA)

This ground-nesting raptor, nests and forages in tidal marsh habitat along the Contra Costa shoreline. One individual was observed on site on 10 March 2014. Local nesting in the adjacent marshlands is highly probable. The nesting season extends from March through August (Loughman and McLandress *in* Shuford and Gardali 2008). If removal activities occur outside this period, harriers will not be affected.

California Clapper Rail (CCR)

CCRs have been reported from the south shoreline of Suisun Bay in the past (Albertson and Evens 2000, CNDDDB, Collins *et al.* 1994), however populations declines have been

noted over the last decade (Herzog *et al.* 2005, Liu *et al.* 2005, Wood *et al.*, 2011) and reports in recent years in the Suisun system have been few and sporadic (CNDDDB, J. Evens pers. obs.). One of the habitat requirements of the CCR is a well-developed system of tidal channels (Albertson and Evens 2000, Evens *et al.* 2010), a habitat element not present in the immediate project area. However, some potential habitat occurs at Balloma Slough, 1.7 mi (2.7 km) west of the site and within the Bay Point Regional Shoreline, 0.6 mi (1.0 km) east of the site, therefore it is possible that CCRs could occur along the shoreline of the study site foraging or commuting between more viable habitat patches. Such movement is not likely during the nesting season, so removal activities are not likely to interfere with CCR nesting.

California Black Rail (CBR)

The tidal marsh habitat along the Contra Costa shoreline is well-documented CBR habitat (Page *et al.* 1989, Evens *et al.* 1991, Spear *et al.* 1999, Trulio and Evens 2000, Spautz *et al.* 2001, Evens and Nur 2002.) Evens and Nur (2002) estimated that Suisun marshes support 0.28 to 1.1 CBR territories per acre (0.7 to 2.6 hectare). Using these values, the 11.9 ac (4.8 ha) of marsh considered in this assessment of viable habitat considered here may support as many as 12 pair of CBRs. A study at nearby Concord Naval Weapons Station found moderate (0.24-0.85 rails/ac or 0.6-2.1 rails/ha) to high (>0.85 rails/ac or >2.1 rails/ha) densities of CBRs in tidal marsh habitat similar to that found at this study site (Spear *et al.* 1999, Evens and Nur 2002). In a wide-ranging study of the San Francisco Bay estuary, Mallard Is., 0.6 mi (1 km) to the east, supported the highest density of CBRs in the Suisun system (Evens *et al.* 1989). The pickleweed dominated tidal marsh on site is prime habitat for this marsh bird. Four individuals were detected on site on 10 March 2014 and it is a year-round resident in the pickleweed-dominated marsh plain. High tide refugial habitat, a critical component of its habitat requirements (Trulio and Evens 2000), is present on site (Figure 7).

San Francisco Common Yellowthroat (SFCY)

SFCY is a California Species of special Concern (Shuford and Gardali 2008). In brackish and saline marshes around San Francisco Bay, COYE abundance is positively correlated with a high percentage cover of rushes (*Schoenoplectus* or *Scirpus* spp.), peppergrass (*Lepidium latifolium*), and *Juncus*. The habitat characteristics of the site likely support this species, both nesting and wintering. The nesting season extends from

mid-March into late-July (Shuford and Gardali 2008). Timing this project outside the nesting season will avoid impacts to this species during the vulnerable nesting period.

Suisun Song Sparrow (SSSP)

SSSP is a California Species of special Concern (Shuford and Gardali 2008) that occurs as a year-round resident in virtually every tidal marsh in Suisun Bay. SSPs are associated primarily with tidal channels. The nesting season is protracted, extending from mid-march into mid-August (Glover 2009). Measures that protect the California Black Rail are assumed to protect the SSSP because the two species habitat affinities and breeding season are similar.

Salt Marsh Harvest Mouse (SMHM)

The south shoreline of Suisun Bay is included in the distributional range of the SMHM (USFWS 2010). The proportion of the site dominated by pickleweed (*Sarcocornia*) has the habitat characteristics preferred by SMHM (USFWS 2010). Protocol-level surveys for this species are beyond the scope of this assessment, however given the habitat qualities, presence should be assumed. Measures that protect the California Black Rail are assumed to protect the SMHM because the two species share the same habitat affinities.

Although not observed on our single site visit, additional “special animals”² likely to occur on the site, either regularly or sporadically, given the habitat characteristics include:

- Great Blue Heron (*Ardea herodias*) [CDFW:SSC]
- Great Egret (*Ardea alba*) [CDFG:SSC]
- Snowy Egret (*Egretta thula*) [CDFW:SSC]
- Black-crowned Night-Heron (*Nycticorax nycticorax*) [CDFW:SSC]
- White-tailed Kite (*Elanus leucurus*) [CDFW:FP]
- Yellow Rail (*Coturnicops noveboracensis*) [BSSC-priority 2]
- Snowy Plover (*Charadrius nivosus*) [FT]
- Burrowing Owl (*Athene cunicularia*) [BSSC-priority 2]
- Short-eared Owl (*Asio flammeus*) [BSSC-priority 3]
- Loggerhead Shrike (*Lanius ludovicianus*) [BSSC-priority 2]
- “Bryant’s” Savannah Sparrow (*Passerculus sandwichensis alaudinus*) [BSSC-3]

² <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/spanimals.pdf>

Saltmarsh Wandering Shrew (*Sorex vagrans halicoetes*) [CDFG:SSC]

DISCUSSION and RECOMMENDATIONS

A suite of special status species is associated with marsh habitat adjacent to the GWF outfall pipe. The proximate habitat does not appear appropriate for the federally endangered clapper rail (CCR), however individuals may forage or disperse along the Contra Costa shoreline, though rarely; pipe removal activities are not likely to impede CCR movement. The species most susceptible to disturbance from removal activities on site are the black rail (CBR) and the harvest mouse (SMHM). CBR is certainly present; SMHM presence is unknown, but assumed. In any event, because the two species share habitat affinities, protective measures to protect CBR would also protect SMHM, as well as other marsh-dependent species. CBR is most vulnerable to disturbance if the vegetative cover of the tidal marsh plain is removed or the substrate of the marsh is altered. Measures designed to avoid impacts to those habitat elements should avoid impacting the CBR and other special status species. Timing of removal activities should also be considered. To the best of our knowledge, CBR nesting takes place from March through June in San Francisco Bay marshes (Eddelman *et al.* 1994, J. Evens, pers. obs.). Scheduling removal activities during the non-nesting season of all species (September –January) will reduce the potential for impacts to special status species.

As we understand this project, the first phase involves the removal of the 275 ft outfall/diffuser piping and the removal of two large timber posts from offshore, using a barge and crane. We do not anticipate any disturbance to tidal marsh species using these methods.

A future project may be the removal of the piping from the outfall point upland across marsh (approx 350 ft/107 m) then across disturbed industrial property to the former GWF power plant site. During this phase of the project, minimizing the footprint of the pipe removal will minimize the potential impacts to sensitive tidal marsh species. To this end, removal of the upland portion of the pipe should be conducted during the non-breeding season of sensitive species, September-January. To further avoid disturbance, pipe removal activities should be conducted from the existing levee or disturbed substrate by crane or helicopter. Additionally, Leaving the footings that undergird the landward portion of the pipe will avoid disturbance of the substrate. If sections of the pipe need to be accessed by workers, they should confine their activities to the levee or the immediate area of the pipeline route.

SUMMARY

During March 2014, tidal marshland proximate to the GWF outfall pipeline near Bay Point on the Contra Costa shoreline was assessed to determine habitat values for special status plant and animal species. Three plant species and seven animal species were documented as either occurring or potentially occurring based on data available through the California Natural Diversity Data Base. An additional 12 special status species were identified as likely to occur at the site based on habitat values and biogeography.

Of those species identified, the state threatened "California" Black Rail was detected on the site during a single reconnaissance visit. The CBR is resident in the associated marsh habitat in moderate to high densities. Measures designed to protect CBRs will protect other species that may be impacted by removal activities carried out on the site.

To avoid or minimize impacts to sensitive tidal marsh species, removal of the portion of the pipe that crosses the upland should be conducted during the non-breeding season (September-January). The project should be designed to avoid disturbing the marsh plain by leaving the footings that undergrid the pipe in-place and by accessing the site from the existing levee road or from the air via helicopter. If workers must access the pipe, they should confine activities to the levee or the immediate area of the pipeline's path.

RELEVANT PERMITS

U.S. Fish and Wildlife Endangered Species Permit: TE 786728-4
California Department of Fish and Game Collecting Permit # 801092-04
Federal Bird Marking and Salvage Permit: # 09316-AN

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