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memorandum

date March 13, 2020

to Paul Detjens, Contra Costa County Flood Control District; Ave Brown, Contra Costa County Flood Control District

cc Jill Sunahara, ESA Permitting Program Manager; Melissa Carter, ESA Civil Engineer

from Leonard Liu, ESA Biologist

subject Results of California Ridgway's Rail and California Black Rail Surveys for the Lower Walnut Creek Restoration Project

Dear Mr. Detjens and Ms. Brown,

Environmental Science Associates (ESA) recently completed surveys for federal and state endangered California Ridgway's rail (CRR; *Rallus obsoletus obsoletus*), formerly known as California clapper rail, and state threatened California black rail (CBR; *Laterallus jamaicensis coturniculus*) in tidal brackish marsh at the Lower Walnut Creek Restoration Project (Project). Surveys were authorized by U.S. Fish and Wildlife Service (USFWS) on January 22, 2020. Surveys were conducted at the planned North Reach and South Reach restoration areas, and included surrounding tidal marsh habitat (Figure 1). This survey effort was undertaken to determine the presence of breeding rails in support of construction activities in 2020, as activities within the Project area could adversely affect rails during the nesting season, if present, through direct and indirect impacts. ESA did not detect any listed rail species in the Project area, though California black rails were detected in the surrounding tidal marsh habitat at the North Reach. ESA is submitting these survey results for your review, and also will notify USFWS and California Department of Fish and Wildlife (CDFW) of the survey results.

Project Location

The Project site is located along the south shore of Suisun Bay, at the mouth of Walnut Creek east of Martinez, Contra Costa County, California (Figure 1). Most of the site is diked former tidal marsh, with portions historically used by past property owners for industrial purposes, including utility right-of-ways, landfills, industrial yards, and sand dredging operations. The site is currently a mix of habitat types, including tidal brackish marsh, open water, seasonal wetlands, and ruderal upland habitats. Access to the site is on paved and unpaved roads.

The tidal brackish marsh is of moderate quality, with low channel density and sinuosity, and close proximity to industrial sources of disturbance. The tidal marsh is populated by large tracts of cattails (*Typha* spp.), southern bulrush (*Schoenoplectus californicus*), alkali bulrush (*Bolboschoenus maritimus*),

pickleweed (*Salicornia pacifica*), and non-native common reed (*Phragmites australis*). These dominant plants are interspersed with smaller patches of perennial pepperweed (*Lepidium latifolium*) and Olney's three-square bulrush (*Schoenoplectus americanus*).

The seasonal wetlands were mostly populated by pickleweed with some open water/bare ground and ruderal vegetation, including annual grasses, perennial pepperweed, and black mustard (*Brassica nigra*). The seasonal wetlands are of marginal quality as it does not appear to support a diversity of vegetation nor were they heavily used by waterbirds.

The tidal marshes are separated from the seasonal wetlands and uplands by levees, covered primarily with ruderal upland vegetation, predominantly annual grasses, coyote brush (*Baccharis pilularis*), wild radish (*Raphanus sativus*), poison hemlock (*Conium maculatum*), black mustard, Himalayan blackberry (*Rubus armeniacus*), and smaller patches of toyon (*Heteromeles arbutifolia*), giant reed (*Arundo donax*), and thistles (*Carduus pycnocephalus*, *Cirsium* spp.).

Project Description

The Contra Costa County Flood Control and Water Conservation District (District) is proposing the Project to restore and enhance wetlands and associated habitats in Lower Walnut Creek and to provide sustainable flood management, while allowing opportunities for public access and recreation.

Earthwork expected to occur during Project construction includes excavation and grading to create new tidal channels, tidal marsh, adjacent terrestrial lowlands, and upland habitats; excavation to lower the existing levees in the South Reach and berms in the North Reach; and creation of new setback levees in the South Reach using material excavated from the existing levees along Lower Walnut and Pacheco Creeks.

Survey Methods

ESA established 17 avian survey stations approximately 200 meters (656 feet) apart around the North Reach and South Reach, which covered all potential CRR and CBR nesting habitat within 656 feet of project work areas (Figure 2, Table 1). The stations covered approximately 357 acres with 200-meter (656-foot) radii around each station. Approximately 40% of the total survey area was coastal brackish marsh habitat suitable for rail use; there was significantly more suitable habitat, approximately 45%, in the North Reach than in the South Reach, approximately 26% (San Francisco Estuary Institute 2011). ESA used the Site-specific Protocol for Monitoring Marsh Birds: Don Edwards San Francisco Bay and San Pablo Bay National Wildlife Refuges (Wood et al. 2017), which is compatible with the Standardized North American Marsh Bird Monitoring Protocol (Conway and Seamans 2016). Surveys were conducted by Leonard Liu (USFWS Permit #TE94998A-1).

The survey stations were grouped into three transects: South Reach Transect (stations 11-15), Northwest Transect (stations 1, 2, 3, 17, and 16), and Northeast Transect (stations 4-10). Each transect was surveyed within a two-hour time period three times (rounds) during the survey season, with each round separated by at least 14 days. Each survey station was surveyed with a 10-minute point count: a five-minute passive listening period followed by call-broadcast of CRR and CBR.

Locally recorded CRR and CBR calls were used to create the call-broadcast sequence MP3 file. The MP3 file includes 30 seconds of calls for each of the focal marsh birds interspersed with 30 seconds of

silence between each species' calls. The 30 seconds of calls consist of a series of the most common calls for that species interspersed with approximately 5 seconds of silence. The entire survey sequence is:

- 5 minutes of silence (a verbal statement at the end of each minute is given to alert surveyors);
- 30 seconds of CBR calls;
- 30 seconds of silence;
- 30 seconds of CRR calls;
- 3 minutes 30 seconds of silence; and
- Verbal "stop" at end of the final 30 seconds of silence so that surveyors know when to stop playback and the survey at that point.

Surveys were conducted during the periods immediately before and after sunset and sunrise, which are peak calling times for CRR and CBR. All surveys were conducted within a two hour (120-minute) period surrounding sunrise or sunset, starting no more than 60 minutes before sunrise or sunset and terminating within 60 minutes of sunrise and sunset. The transect directions were reversed once in order to increase coverage at each point under different amounts of sunlight.

All rail vocalizations were noted, including the types, locations and times, on a detailed map of the survey area. The biologist used a compass and distance estimation to locate detected listed rails on a map. Weather conditions were recorded at the beginning and end of each survey. Noise level at the site was qualitatively assessed on a scale from zero to four: 0, no noise; 1, faint noise; 2, moderate noise (probably can't hear some birds beyond 100m); 3, loud noise (probably can't hear some birds beyond 50m); 4, intense noise (probably can't hear some birds beyond 25m).

Active call-broadcast was utilized at each station every round, and the following standard measures were used to reduce possibility of exposure of rails to predators:

- Surveys were conducted when tides were less than +4.5 feet as measured at the nearest tide station or are not higher than the marsh plain (i.e., not higher than bank full) at the study area.
- Surveys were not conducted on the day of a full moon.
- Call-broadcast would have been halted in the presence of a potential rail predator within 200 m of the survey point and not resumed until the predator left the area. If the predator did not leave the area within 10 minutes, the survey would have continued without employing the broadcast.
- Additionally, surveys were not conducted when winds are over 10 miles per hour or gusts over 12 miles per hour, or during moderate to heavy rain, in order to increase detectability of vocalizations.

ESA conducted the surveys within the windows recommended in the Site-specific Protocol (round 1: January 15 to February 6; round 2: February 7 to February 28; and round 3: March 1 to March 25).

Results

ESA conducted the surveys on January 20 and 24, February 7 and 11, and March 4 and 6, 2020 (Table 2). Weather and listening conditions during the surveys at the two North Reach transects were excellent, with low ambient noise and wind. While weather conditions during South Reach surveys were adequate, noise from the natural gas power plant to the east limited detectability of birds beyond 100 meters (328 feet) on two surveys and within 50 meters (164 feet) on one survey.

- ESA did not detect any California Ridgway's rails during surveys.
- ESA did not detect any California black rails during surveys at the South Reach.
- ESA detected California black rails at both North Reach transects (Figure 3): on January 20 in the marsh on the west bank of Walnut Creek from stations 6 and 7; on February 7 in the marsh on the west bank of Walnut Creek from stations 5, 6, and 7; and on March 5 in Peyton Marsh from stations 2 and 17 (Figure 3). Detections near station 6 and 7 on February 7 were in close proximity to detections from January 20 and March 5, and possibly represent repeat detections of the same individual at that general location. ESA detected a total of 11 to 13 individual CBR. Observations of CBR made during the surveys will be submitted to the California Natural Diversity Database.

ESA also detected Virginia rail (*Rallus limicola*) in the tidal marsh areas, as well as Suisun song sparrow (*Melospiza melodia maxillaris*) and white-tailed kite (*Elanus leucurus*). Potential predators detected during surveys included: barn owl (*Tyto alba*), short-eared owl (*Asio flammeus*), red-tailed hawk (*Buteo jamaicensis*), norther harrier (*Circus hudsonius*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), and coyote (*Canis latrans*). All bird species encountered during surveys are presented in Table 3.

Conclusions

California Ridgway's rails generally occur in very low densities in tidal brackish marshes in Suisun Bay. Surveys by CDFW in 2006 found CRR in Point Edith Marsh approximately 0.8 mile to the east, and there is a 2008 record of CRR 1.5 miles to the west, in the marsh west of Interstate 680 (CDFW 2018). ESA's surveys from 2019 did not detect CRR in or around the Project area (Liu 2019). Surveys from 2011 to 2017 in Point Edith Marsh east of Walnut Creek also did not detect any CRR (Yakich 2017), and CRR were not detected in the study area during the current survey. Based on the absence of detections and the relatively low habitat quality and brackish conditions present in the tidal marsh around the Project area, ESA concludes that Project activities are not likely to directly or indirectly affect California Ridgway's rail breeding, foraging, and other aspects of its life cycle. The South Reach is especially poorly suited for CRR, where a relatively narrow strip of tidal marsh borders the Project area. In comparison, the North Reach provides incrementally better habitat quality; however, CRR were not detected at that location. The Project, along with other tidal restoration projects in the regional area, will help to provide the resilient landscape that CRR will need this century to meet the challenges of sea level rise and meet delisting criteria.

Conversely, the tidal brackish marshes in Suisun Bay are populated with relatively high densities of California black rail (Evens and Nur 2002; Spautz et al. 2005). ESA detected CBR only outside of the Project area, in the North Reach tidal marsh where tidal influence is greater than in the South Reach and the proportion of tidal marsh proximate to the Project area is greater, and in the larger Peyton

Marsh to the west. ESA's surveys from 2019 detected six to eight individual CBR at the North Reach, near stations 5 and 6. Results from 2020 surveys could represent an increase in the population and range of CBR at this site, or an interannual variation in survey results due to the generally low detectability of CBR.

ESA recommends prudent measures to avoid disruptions to CBR breeding from restoration activities in the North Reach, including but not limited to: restricting use of heavy equipment in close proximity to known CBR locations during the breeding season (approximately February 1 through August 31); restricting activities in close proximity to suitable habitat during extreme high tides when CBR may be forced onto levees or seasonal wetlands; implementing worker education training to help workers recognize CBR and understand the importance of avoiding harm to CBR; and monitoring of work activities by a qualified biologist. With the implementation of prudent mitigation measures that avoid direct and indirect effect to this species during the breeding season, this restoration project should result in a net benefit for California black rail.

I, Leonard Liu (TE-94998A-1) certify that the information in this survey report and attached exhibits fully and accurately represents my work.

A handwritten signature in blue ink, appearing to read 'L. Liu', is positioned above a horizontal line.

Signature

March 13, 2020

Date

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- Yakich, J., 2017. 2017 California Ridgway's (Clapper) Rail Survey Results, WMUs 10/11/14, 31 and 32, Tesoro Martinez Refinery, Martinez, Contra Costa County, California (USFWS file number 08ESMF00-2012-TA-0213-1). Report to U.S. Fish and Wildlife Service by WRA, Inc. June 8, 2017.

Table 1. Rail survey points at Lower Walnut Creek. Coordinates are in WGS 84.

Point	Longitude	Latitude
1	-122.097823	38.034865
2	-122.097799	38.036853
3	-122.097806	38.038919
4	-122.093607	38.040539
5	-122.092386	38.038981
6	-122.091065	38.037499
7	-122.089829	38.035930
8	-122.088498	38.034458
9	-122.087093	38.033049
10	-122.085489	38.031749
11	-122.071579	38.023237
12	-122.071355	38.021411
13	-122.071019	38.019576
14	-122.070504	38.017782
15	-122.070051	38.016013
16	-122.096272	38.042139
17	-122.097797	38.040701

Table 2. Results of 2020 rail surveys. Noise code: 0, no noise; 1, faint noise; 2, moderate noise; 3, loud noise; 4, intense noise.

Round	Date	Route	Acres surveyed	Rails Detected	Temp. start (°F)	Temp. end (°F)	Sky start	Sky end	Wind speed start (mph)	Wind speed end (mph)	Noise code
1	20-Jan	Northwest	104	0	42	42	Fog	Fog	1-4	1-4	0
1	21-Jan	Northeast	145	2 CBR	52	48	Partly cloudy	Partly cloudy	1-4	1-4	1
1	24-Jan	South	108	0	45	47	Partly cloudy	Partly cloudy	1-4	1-4	2
2	7-Feb	Northwest	104	0	35	41	Fog	Fog	1-4	1-4	1
2	7-Feb	Northeast	145	7 CBR	67	43	Clear	Clear	1-4	1-4	1
2	11-Feb	South	108		44	42	Clear	Clear	1-4	1-4	3
3	4-Mar	Northeast	108	1 CBR	43	52	Partly cloudy	Partly cloudy	1-4	1-4	1
3	4-Mar	Northwest	219	3 CBR	76	60	Clear	Clear	0	0	1
3	6-Mar	South	108	0	54	56	Cloudy	Cloudy	5-7	5-7	2

Table 3. Birds detected during 2020 rail surveys.

Common name	Scientific name		Common name	Scientific name
Canada goose	<i>Branta canadensis</i>		Sharp-shinned hawk	<i>Accipiter striatus</i>
Gadwall	<i>Mareca strepera</i>		Red-tailed hawk	<i>Buteo jamaicensis</i>
American wigeon	<i>Mareca americana</i>		Barn owl	<i>Tyto alba</i>
Mallard	<i>Anas platyrhynchos</i>		Short-eared owl	<i>Asio flammeus</i>
Wild turkey	<i>Meleagris gallopavo</i>		Northern flicker	<i>Colaptes auratus</i>
Rock pigeon	<i>Columba livia</i>		American kestrel	<i>Falco sparverius</i>
Mourning dove	<i>Zenaidura macroura</i>		Black phoebe	<i>Sayornis nigricans</i>
American avocet	<i>Recurvirostra americana</i>		Common raven	<i>Corvus corax</i>
Killdeer	<i>Charadrius vociferus</i>		Marsh wren	<i>Cistothorus palustris</i>
Greater yellowlegs	<i>Tringa melanoleuca</i>		Northern mockingbird	<i>Mimus polyglottos</i>
California gull	<i>Larus californicus</i>		European starling	<i>Sturnus vulgaris</i>
Double-crested cormorant	<i>Phalacrocorax auritus</i>		House finch	<i>Haemorhous mexicanus</i>
Great blue heron	<i>Ardea herodias</i>		White-crowned sparrow	<i>Zonotrichia leucophrys</i>
Great egret	<i>Ardea alba</i>		Savannah sparrow	<i>Passerculus sandwichensis</i>
Snowy egret	<i>Egretta thula</i>		Song sparrow	<i>Melospiza melodia</i>
Black-crowned night-heron	<i>Nycticorax nycticorax</i>		Western meadowlark	<i>Sturnella neglecta</i>
Turkey vulture	<i>Cathartes aura</i>		Red-winged blackbird	<i>Agelaius phoeniceus</i>
White-tailed kite	<i>Elanus leucurus</i>		Great-tailed grackle	<i>Quiscalus mexicanus</i>
Northern harrier	<i>Circus hudsonius</i>		Common yellowthroat	<i>Geothlypis trichas</i>



SOURCE: ESA, 2019; Digital Globe, 2017

Lower Walnut Creek Restoration . D170378

Figure 1
Project Location



SOURCE: ESA; ESRI; DigitalGlobe 2017

Lower Walnut Creek Restoration Project D170378

Figure 2
2020 Rail Survey Locations



SOURCE: ESA; ESRI; DigitalGlobe 2017

Lower Walnut Creek Restoration Project D170378