DOCKETED	
Docket Number:	23-AFC-02
Project Title:	Elmore North Geothermal Project (ENGP)
TN #:	251683
Document Title:	Distribution and Occupancy of Yuma Ridgway's Rails Report - Public Version
Description:	Distribution and occupancy of Yuma Ridgway's rails within proposed geothermal development areas in Imperial Valley, California
Filer:	Ngoc Tran
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	8/18/2023 10:56:52 AM
Docketed Date:	8/18/2023

Distribution and occupancy of Yuma Ridgway's rails within proposed geothermal development areas in Imperial Valley, California

07 September 2022

Submitted to:
Jacobs Engineering Group

By

Kathryn M. Sliwa
Courtney J. Conway

Department of Fish and Wildlife Sciences
University of Idaho
875 Perimeter Dr., MS 1141
Moscow, Idaho 83844

Table of Contents

INTRODUCTION **4**

SURVEY LOCATIONS **4**

SURVEY METHODS **6**

SURVEY RESULTS **7**

MORTON BAY 7

ELMORE NORTH 8

IMPACT THRESHOLDS AND RECOMMENDED AVOIDANCE MEASURES 8

LITERATURE CITED **9**

List of Tables

Table 1. Numbers of Yuma Ridgway's rails detected during surveys at Morton Bay. Sites were surveyed over two days on each of three survey replicates at Morton Bay. Sites MB-01 to MB-14 were conducted on Day 1 of each survey replicate and MB-15 to MB-20 were conducted on Day 2 of each replicate.. 11
Table 2. Numbers of Yuma Ridgway's rails detected during each survey replicate. (Survey Replicate 1 = 6-7 May 2022; Survey Replicate 2 = 18-19 May 2022; Survey Replicate 3 = 30-31 May 2022) 11
Table 3. Numbers of Yuma Ridgway's rails detected during surveys at Elmore North . 12
Table 4. Numbers of marsh birds detected on call-broadcast surveys for each survey replicate. 12

List of Figures

Figure 1. Proposed development area at the southeastern edge of the Salton Sea... 13
Figure 2. Land cover within the proposed survey area. The mixed cover category was comprised of fragmented areas of bare ground and woody shrubs..... 14
Figure 3. Marshl habitat and survey locations in the Morton Bay area.. 15
Figure 4. Yuma Ridgway's rail habitat and survey locations in the Elmore North area 16
Figure 5. The 24 survey locations that had potential rail habitat where the survey team conducted call-broadcast surveys for Yuma Ridgway's rails are depicted by yellow circles 17
Figure 6. Survey points where the survey team detected ≥1 Yuma Ridgway's rail during at least one survey are depicted by green stars.. 18
Figure 7. Northwest pond in the Morton Bay proposed development area. When the survey team initially assessed this area in May 2022, cattails were short and just getting established and woody cover was dominant. By July 2022, cattails had grown substantially providing potentially good habitat for Yuma Ridgway's rail. The yellow line is a reference point for both photographs..... 19
Figure 8. Proximity of the proposed area of development to land currently managed by the Sonny Bono Salton Sea National Wildlife Refuge (SBSSNWR). The SBSSNWR manages wetlands within this area to provide nesting and year-round habitat for the Yuma Ridgway's rail..... 20

INTRODUCTION

The Yuma Ridgway's rail *(Rallus obsoletus yumanensis*) is a federally endangered bird endemic to wetlands throughout the Lower Colorado River Basin, including Salton Sea (Conway and Eddleman 2000, Conway et al. 2010). Yuma Ridgway's rails are partial migrants; most individuals are year-round residents within their breeding marshes but approximately 40% migrate south during winter (Harrity et al. 2020). Rails depend on patches of emergent wetlands with standing water in an area dominated by desert and agriculture (Conway et al. 1993, Harrity et al. 2020, Stevens and Conway 2020a). The hydrologic regime of wetlands throughout the species' range has been dramatically altered by dams and human modification (Conway and Eddleman 2000, Conway et al. 2010). The Yuma Ridgway's rail is most threatened by loss of emergent marsh vegetation, which is dependent on water from the Colorado River which is increasingly diverted for agricultural and municipal purposes. Despite best efforts to manage marshes to benefit this species, numbers of these birds in the U.S. have declined (Conway and Eddleman 2000). The Salton Sea remains a stronghold for their recovery and persistence (U.S. Fish and Wildlife Service 2009). Yuma Ridgway's rails are secretive marsh birds and are difficult to detect and seldom seen visually. Hence, specialized survey methods and trained surveyors are needed to document whether these rare birds occupy specific locations (Conway and Droege 2006, Conway 2011). The rails are also sensitive to disturbances or management actions that alter water levels, water quality, prey abundance, or structure and composition of emergent vegetation (Stevens and Conway 2020b). This report summarizes the results of Yuma Ridgway's rail surveys conducted in Imperial Valley during spring 2022. Surveys were conducted to quantify the distribution and occupancy of Yuma Ridgway's rails in areas considered for potential geothermal expansion sites.

SURVEY LOCATIONS

The survey areas are located at the southeastern edge of the Salton Sea near the Sonny Bono Salton Sea National Wildlife Refuge (SBSSNWR; Fig. 1). All accessible portions of the proposed development area for suitable Yuma Ridgway's rail habitat were reviewed, and the perimeter mapped for patches of rail habitat. The areas were also categorized based on the land-use and vegetation structure. These assessments were then used to map the area and to select the portions of the area where call-broadcast surveys were needed (i.e., those areas that could potentially support rails). The survey area is predominantly agriculture fields and portions of bare ground (Fig. 2). Yuma Ridgway's rails require areas with standing water and emergent marsh vegetation such as southern cattail (*Typha domingensis*), some of which are bordered by or intermixed with salt cedar (*Tamarix ramosissima*).

Morton Bay

The Morton Bay survey area (Fig. 3) is a 306-ha section of the proposed development area. The edges of the bay provide good rail habitat, with thick patches of cattail interspersed with salt cedar. A new north-south road was recently constructed, which connects McDonald Road and North Lateral, west of Davis Road. Along the west side of this new road is an irrigation ditch with patches of cattails (survey locations MB-06 to MB-09). At the start of the surveys, water in

the ditch was visibly deep (approximately 1 m) and by the final survey, water had receded to approximately ≤0.3 m.

The area between P Drain and McDonald Road consists of mostly old ponds with good rail habitat on the western side of this section (survey locations MB-10 to MB-14). The edge of the rail habitat has newly grown cattails, with more mature cattails extending to the east edge of Morton Bay (water body). The northwest pond (east of MB-10 and MB-11) has a large patch of salt cedar surrounded by water. When this area was initially assessed at the start of May 2022, some new-growth cattails (≤ 0.4 m tall) were on the edge of the salt cedar patch. By July 2022, the cattails had grown to 1-1.5 m tall, providing potential habitat for the Yuma Ridgway's rail. The southwest pond has varying levels of water throughout the survey period but is mostly bare ground. The northeast pond is bare, with no water present during the entirety of the survey period.

The property south of West Schrimpf Road is segmented into seasonally flooded ponds managed for waterfowl hunting. The surveys were conducted outside of hunting season, therefore most of the ponds on this property were drained. The exception being ponds bordering West Schrimpf Road and ponds running through the center of the property along Brandt Road. A series of smaller ponds to the west of Brandt Road are open water surrounded by salt cedar. One long pond to the east of Brandt Road has patches of cattail. Hazard Tract is west of this property and is a 272-ha wetland managed by SBSSNWR for waterfowl hunting. Waterfowl season runs between October through February and therefore the Hazard Tract was mostly drained of water during the survey period.

Elmore North

Elmore North survey area (Fig. 4) is an 841-ha area with transmission lines throughout the proposed development area covering an additional 181 ha. The northern section of Elmore North is surrounded by land managed by the SBSSNWR. Areas south of Hatfield Road are dominated by active agriculture. North of Hatfield Road, proposed development areas overlapped with land currently managed by SBSSNWR. The section west of Garst Road and north of Hatfield Road is mostly bare ground with 2 patches predominantly consisting of salt cedar; however, cattails are present within these otherwise woody patches. This area is supported by irrigation ditches. East of Garst Road is the 272 ha Hazard Tract managed by SBSSNWR for waterfowl hunting. In spring and summer 2022, this area had no water, but consisted of large patches of dead cattails.

Black Rock

Black Rock is a 275-ha area located south of land managed by the SBSSNWR and McKendry Road. This area is predominantly agriculture fields, most of which had active crops. Two sections of Black Rock are fallow fields. On McKendry and Severe Road, there is an irrigation ditch with deep water and very thick vegetation consisting primarily of phragmites (*Phragmites australis*). Overall, suitable rail habitat is currently not present in the Black Rock portion of the proposed project area; therefore, Yuma Ridgway's rail surveys were not conducted there.

SURVEY METHODS

Yuma Ridgway's rail surveys were conducted at 24 survey locations (Fig. 5) in the Morton Bay (20; Fig. 3) and Elmore North (4; Fig. 4) areas where wetlands were present that warranted call-broadcast surveys. Survey points were placed at 200-m intervals in areas with potential rail habitat (i.e., marshes and roadside irrigation ditches with emergent vegetation and standing water). Survey points were placed along the open-water and upland or road peripheries of all emergent marsh areas that were deemed potential habitat. Survey points were also placed as close to the marsh vegetation as possible at each survey point. A GPS receiver was used to record the coordinates of each survey point to facilitate surveyors revisiting the same location during replicate surveys. These sites are in an area that has historically used the National Marsh Bird Survey Protocol and, hence, those survey methods were used for efficiency and compatibility rather than the 2017 survey protocol for project evaluation. As per the 2017 project evaluation protocol, "*To help survey efficiency, if a site has historically used the National Marsh Bird Protocol but is planned for a potential project, the format of the National Marsh Bird Protocol can still be done*". Three replicate call-broadcast surveys were conducted for Yuma Ridgway's rails at each point between 6 May and 31 May 2022 following standard survey methods (Conway 2008, Conway 2011) approved by the U.S. Fish and Wildlife Service (USFWS). The inclusion of call-broadcast during surveys increases detection probability compared to passive surveys (Conway and Gibbs 2005, Conway and Nadeau 2010). Three replicate surveys were conducted every 10 days. Detection probability (i.e., the probability of detecting a bird that is present during a single survey) for Yuma Ridgway's rails during the breeding season is 20-40% (Conway et al. 1993, Conway and Gibbs 2011) and replicate surveys improve the chances of detecting occupancy (i.e., reduce the likelihood of false negatives). Surveys were conducted within the timeframe of 30 min before sunrise to 3 hr after sunrise. Because only three surveys (rather than six) were conducted, all three were conducted during the morning survey window given that is a more reliable period for highest detection probability. Detection probability of rails (and Ridgway's rails in particular) varies with date and time of day (Conway and Gibbs 2011, Stevens and Conway 2020) and 3 replicate surveys also help ameliorate some of that variation. Moreover, weather conditions can influence survey results (Conway and Gibbs 2011), and so call-broadcast surveys were only conducted on days without rain and with wind speeds <16 km/hr (<10 mi/hr) as recommended by national protocols (Conway 2011).

Nine-minute call-broadcast surveys were conducted at each survey point location. This included an initial 5-min passive listening period followed by a series of broadcasted vocalizations to elicit calling and increase detection probability of the focal species (as per the USFWS approved protocols; Conway 2011). The call-broadcast segment consisted of 1-min pre-recorded calls (30 sec of vocalizations followed by 30 sec of silence) for each of 4 species: (1) California black rail (*Laterallus jamaicensis*), (2) least bittern (*Ixobrychus exilis*), (3) Virginia rail (*Rallus limicola*), and (4) Yuma Ridgway's rail. Inclusion of heterospecific calls can increase detection of focal species for most rails, including for Yuma Ridgway's rails (Conway and Nadeau 2010, Nadeau et al. 2013). This broadcast sequence included 30 seconds of Yuma Ridgway's rail calls – the same number of seconds of Ridgway's rail calls recommended in the 2017 project evaluation protocol. Digital recordings were used of the 3 most-common breeding calls of Yuma Ridgway's rails (*kek*, *clatter*, *kek-hurrah*; Conway et al. 1993). A cell phone and Bluetooth enabled speakers

were used to broadcast the calls. At each survey point, speakers were placed on the ground at the marsh edge and faced the speakers toward the marsh vegetation (Conway and Gibbs 2005, Conway 2011).

All Yuma Ridgway's rails heard or seen during the survey period at each survey point were recorded, and distance and direction of each rail from the survey point were estimated (Nadeau and Conway 2012). If an individual was detected at a previous survey point it was documented to prevent double counting of the same individual (Conway 2011). If more than one rail was detected at a survey point, it was noted if it was thought to be part of a breeding pair. Additionally, the detection of other marsh bird species was recorded including: California black rail, Virginia rail, least bittern, American bittern (*Botaurus lentiginosus*), sora (*Porzana odiceps*), common gallinule (*Gallinula galeata*), pied-billed grebe (*Podilymbus odiceps*), and American coot (*Fulica americana*). At each survey point, percent cloud cover, wind speed, ambient temperature, and the amount of background noise were recorded as these factors have been shown to influence a surveyor's ability to hear calling rails (Conway 2011, Conway and Gibbs 2011). Surveyors were permitted by the USFWS to conduct Yuma Ridgway's rail surveys. Survey data was documented into an Excel database to aid in summary and reporting, and for storage and sharing.

SURVEY RESULTS

Copies of all original survey data sheets and notes are attached as an Appendix.

Morton Bay

During the first round of surveys (6-7 May 2022), 9 Yuma Ridgway's rails were detected in the Morton Bay area (Table 1) at 5 different survey point locations (Table 2). Ridgway's rails were detected primarily giving *kek-hurrah* and *paired clatter* calls (along with some *kek*, *purr*, and single *clatter* calls), as these calls indicate active rail breeding in these locations (Conway 2011). At MB-01, a pair of Yuma Ridgway's rails were on the edge of the marsh near a salt cedar bush within 10 m of the survey point. Once the survey was completed, the pair walked across an open area towards a different patch of marsh where MB-02 was located. One of the rails had a GPS transmitter and its movements are being monitored by our research team at the University of Idaho. A Yuma Ridgway's rail was also seen standing on the edge of a dirt road at MB-18 while surveys were conducted, although this individual did not respond audibly during the 9-min call-broadcast survey (i.e., it was only detected visually).

During the second round of surveys (18-19 May 2022), 13 Yuma Ridgway's rails were detected at 9 survey locations at Morton Bay. A Yuma Ridgway's rail was seen at the same spot near MB-01 and crossed over to the same marsh patch as it did during Survey 1. At MB-15, a Yuma Ridgway's rail was seen walking along the edge of the cattails in a dry pond. This individual was first seen about 70 m away from the survey location and proceeded to walk along the edge to within 20 m of the surveyor. At MB-16, a Yuma Ridgway's rail was observed walking in and out of a salt cedar bush within 5 m of the survey point.

During the third round of surveys (30-31 May 2022), 12 Yuma Ridgway's rails at 6 of the Morton Bay survey locations were detected. Once again, a Yuma Ridgway's rail was observed at MB-16 walking to and from a nearby salt cedar bush.

Across all 3 replicate visits, ≥1 Yuma Ridgway's rail were detected at 11 of the 20 Morton Bay survey locations (Fig. 6). MB-01 and MB-09 were the only survey locations where Yuma Ridgway's rails were detected during all 3 replicate surveys. Yuma Ridgway's rails were heard at MB-12 during all 3 survey replicates as well; however, during round 2 the rail calling was previously detected at an earlier survey point. During the survey window, Yuma Ridgway's rails in the emergent area south of P Drain (Fig. 7) were not detected. All the Yuma Ridgway's rails detected were calling from the cattails on the western side of that section. However, by July 2022 Yuma Ridgway's rail tracks were identified traveling between these 2 areas. Additional marsh bird species detected at the Morton Bay site during the 3 survey replicates included: Virginia rails, least bitterns, common gallinules, pied-billed grebes, and American coots (Table 4).

Elmore North

There was no suitable breeding habitat for Yuma Ridgway's rails at the Elmore North area – the patches of marsh vegetation are too small and standing water is not always present. This area is not suitable to support nests or breeding activities for Yuma Ridgway's rails. However, surveys were conducted in this area just to be certain. No Yuma Ridgway's rails were detected at the Elmore North survey point locations during each of the 3 survey replicates (Table 3). The proximity of the 4 survey points to a nearby facility made it difficult to hear any birds that were >50-100 m away. Moreover, no marsh birds of any species were detected at the Elmore North site.

Impact thresholds and recommended avoidance measures

Any activity that results in changes to water levels in marshes that support rails will likely affect habitat suitability and, hence, rail occupancy in those marshes. Draining, ditching, or filling marshes that currently support rails has the potential to adversely affect their occupancy. Any action that restricts waterflow into or out of occupied marshes has the potential to adversely affect rail occupancy. Ground-disturbance activities in adjacent areas that cause water level subsidence within rail habitat could adversely impact rail populations. Activities that reduce cattail density or cattail re-growth during any month of the year within occupied rail habitat has the strong potential to reduce occupancy by rails.

The effect of noise on rail behavior and occupancy has not been studied and so reasonable impact thresholds regarding noise in areas adjacent to rail habitat are not known. That said, rails primarily communicate during the first 3 hours of daylight (0.5 hours before civil sunrise through 2.5 hours after civil sunrise) and during the final 3 hours of daylight. Loud noises in areas adjacent to occupied rail habitat should be avoided during those time windows each day, especially during the courtship, pair-bonding, egg-laying, and incubation periods (1 March – 30 June). Avoidance measures and mitigation strategies are best recommended when details related directly to explicit activities and actions proposed are published/provided. That said, activities that create loud noises would likely affect rails least if the following avoidance measures are used:

- the noise levels at marshes occupied by rails (e.g., those at Morton Bay) never exceed 80 decibels
- noise from construction activities in areas adjacent to marshes occupied by rails were confined to the period from 9:00am-5:00pm (when rail calling behavior is lowest).
- Noise from construction activities in areas adjacent to marshes occupied by rails were confined to outside the rails breeding season (i.e., August through February).

The proposed area of development either overlaps or is adjacent to land managed by the SBSSNWR (Fig. 8). The SBSSNWR manages wetlands within this area to provide nesting and year-round habitat for the Yuma Ridgway's rail. The 3 proposed geothermal expansion sites are all adjacent to refuge land. The expansion site within the Morton Bay survey area includes rail habitat and Yuma Ridgway's rails were detected in this area. The expansion site within Elmore North was adjacent to small marsh patches that were considered unsuitable for nesting Yuma Ridgway's rails, and as expected no Yuma Ridgway's rails were detected during the surveys. The expansion site within Black Rock was adjacent to refuge land, but no rail habitat was observed in the surrounding area.

LITERATURE CITED

Conway, C. J. 2008. Standardized North American Marsh Bird Monitoring Protocols, Version 08-3. Wildlife Research Report #2008-01. Arizona Cooperative Fish and Wildlife Research Unit, Tucson, AZ.

Conway, C. J. 2011. Standardized North American marsh bird monitoring protocol. Waterbirds 34:319–346.

Conway, C. J., and S. Droege. 2006. A unified strategy for monitoring changes in abundance of birds associated with North American tidal marshes. Studies in Avian Biology 32:382-397.

Conway, C.J., and W.R. Eddleman. 2000. Yuma clapper rail. In: Endangered animals: a reference guide to conflicting issues (P.P. Reading and B.J. Miller, eds.), pp, 277–284, Greenwood Press. Westport, CT.

Conway, C. J., W. R. Eddleman, S. H. Anderson, L. R. Hanebury. 1993. Seasonal changes in Yuma Clapper Rail vocalization rate and habitat use. Journal of Wildlife Management 57:282–290.

Conway, C. J., and J. P. Gibbs. 2005. Effectiveness of call-broadcast surveys for monitoring marsh birds. The Auk 122:26-35.

Conway, C. J., and J. P. Gibbs. 2011. Summary of intrinsic and extrinsic factors affecting detection probability of marsh birds. Wetlands 31:403-411.

Conway, C. J., and C. P. Nadeau. 2010. Effects of broadcasting conspecific and heterospecific calls on detection of marsh birds in North America. Wetlands 30:358-368.

Conway, C. J., C. P. Nadeau, and L. Piest. 2010. Fire helps restore natural disturbance regime to benefit rare and endangered marsh birds endemic to Colorado River. Ecological Applications 20:2024-2035.

Harrity, E. J., and C. J. Conway. 2020. Satellite transmitters reveal previously unknown migratory behavior and wintering locations of Yuma Ridgway's Rails. Journal of Field Ornithology 91:300-312.

Harrity, E. J., B. S. Stevens, and C. J. Conway. 2020. Keeping up with the times: mapping range-wide habitat suitability for endangered species in a changing environment. Biological Conservation 250:108734.

Nadeau, C. P., and C. J. Conway. 2012. Field evaluation of distance-estimation error during wetland-dependent bird surveys. Wildlife Research 39:311-320.

Nadeau, C. P., C. J. Conway, L. Piest, and B. Burger. 2013. Multi-species call-broadcast improved detection of endangered Yuma clapper rail compared to single-species call-broadcast. Wetlands 33:699-706.

Stevens, B. S., and C. J. Conway. 2020a. Mapping habitat suitability at range-wide scales: spatially-explicit distribution models to inform conservation and research for marsh birds. Conservation Science and Practice 2:e178.

Stevens, B. S., and C. J. Conway. 2020b. Predictive multi-scale occupancy models at range-wide extents: effects of habitat and human disturbance on distributions of wetland birds. Diversity and Distributions 26:34-48.

U.S. Fish and Wildlife Service. 2009. Yuma Clapper Rail (*Rallus longirostris yumanensis*) Recovery Plan. Draft First Revision. U.S. Fish and Wildlife Service, Southwest Region, Albuquerque, New Mexico.

Table 1. Numbers of Yuma Ridgway's rails detected during surveys at Morton Bay. Sites were surveyed over two days on each of three survey replicates at Morton Bay. Sites MB-01 to MB-14 were conducted on Day 1 of each survey replicate and MB-15 to MB-20 were conducted on Day 2 of each replicate.

Survey Replicate	Date	Total # of Yuma Ridgway's Rails	# of Yuma Ridgway's Rail Pairs
1	6-May	8	1
	7-May	1	0
2	18-May	10	2
	19-May	4	1
3	30-May	11	3
	31-May	2	0

Table 2. Numbers of Yuma Ridgway's rails detected during each survey replicate. (Survey Replicate 1 = 6-7 May 2022; Survey Replicate 2 = 18-19 May 2022; Survey Replicate 3 = 30-31 May 2022; s = visual detection of a Yuma Ridgway's rail).

	Survey Replicate		
Survey Location	**1**	**2**	**3**
MB-01	2s	1s	4
MB-02	3	2	0
MB-09	1	1	1
MB-10	0	1	3
MB-11	0	2	0
MB-12	2	0	2
MB-13	0	2	0
MB-15	0	1s	0
MB-16	0	1s	1s
MB-18	1s	0	0
MB-19	0	2	1
Total Detected	**9**	**13**	**12**

Table 3. Numbers of Yuma Ridgway's rails detected during surveys at Elmore North.

Survey Replicate	Date	Total # of Yuma Ridgway's Rails	# of Yuma Ridgway's Rail Pairs
1	7-May	0	0
2	18-May	0	0
3	30-May	0	0

Table 4. Numbers of marsh birds detected during call-broadcast surveys by species for each survey replicate.

Survey Point	Survey Replicate	Total # RIRA	Total # BLRA	Total # LEBI	Total # VIRA	Total # COGA	Total # PBGR	Total # AMCO
Morton Bay	**1**	9	0	3	1	7	10	14
	2	14	0	1	2	8	6	8
	3	13	0	2	3	8	6	29
Elmore North	**1**	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0

Figure 1. Proposed development area at the southeastern edge of the Salton Sea.

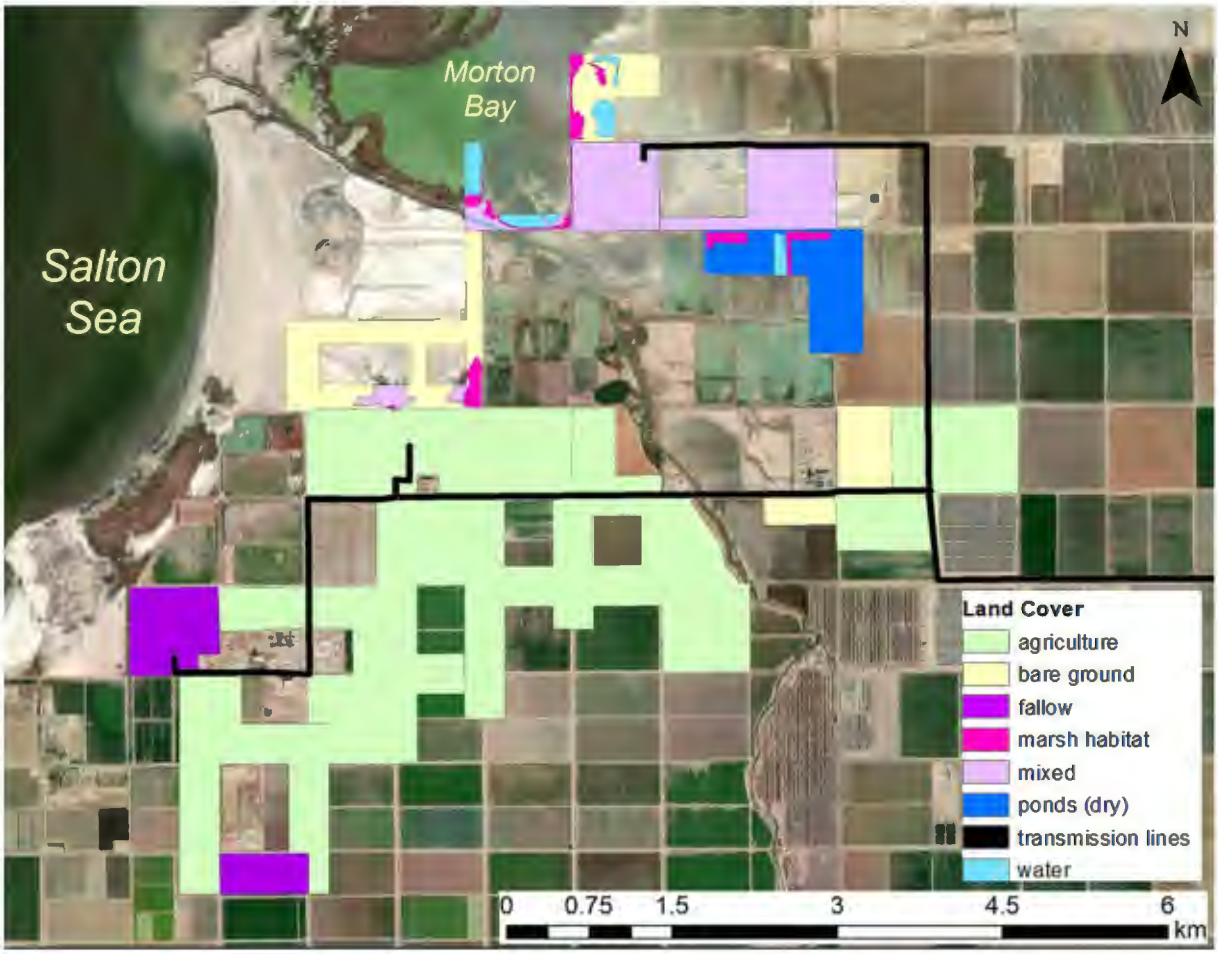

Figure 2. Land cover within the proposed survey area. The mixed cover category was comprised of fragmented areas of bare ground and woody shrubs.

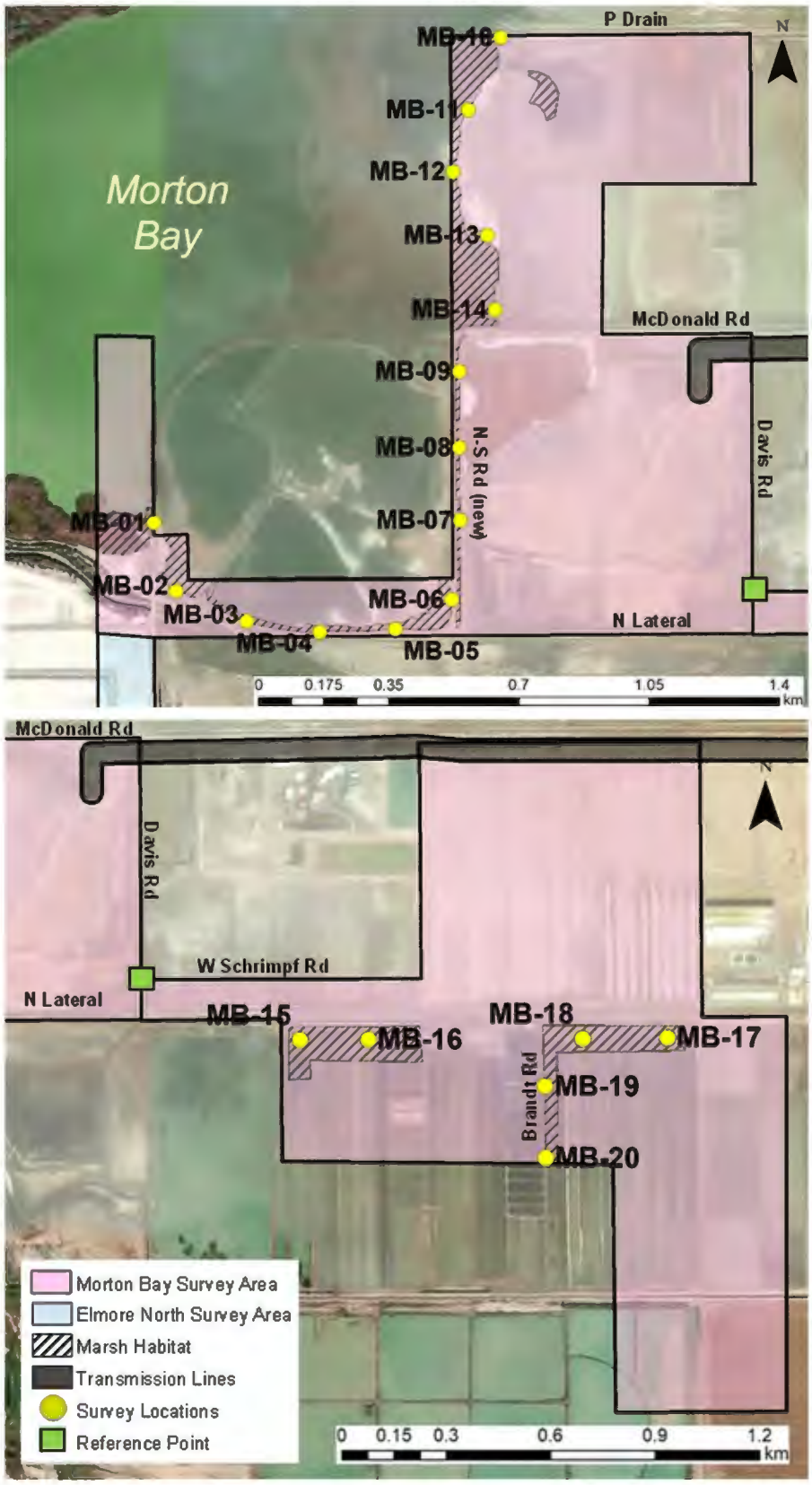

Figure 3. Marsh habitat and survey locations in the Morton Bay area.

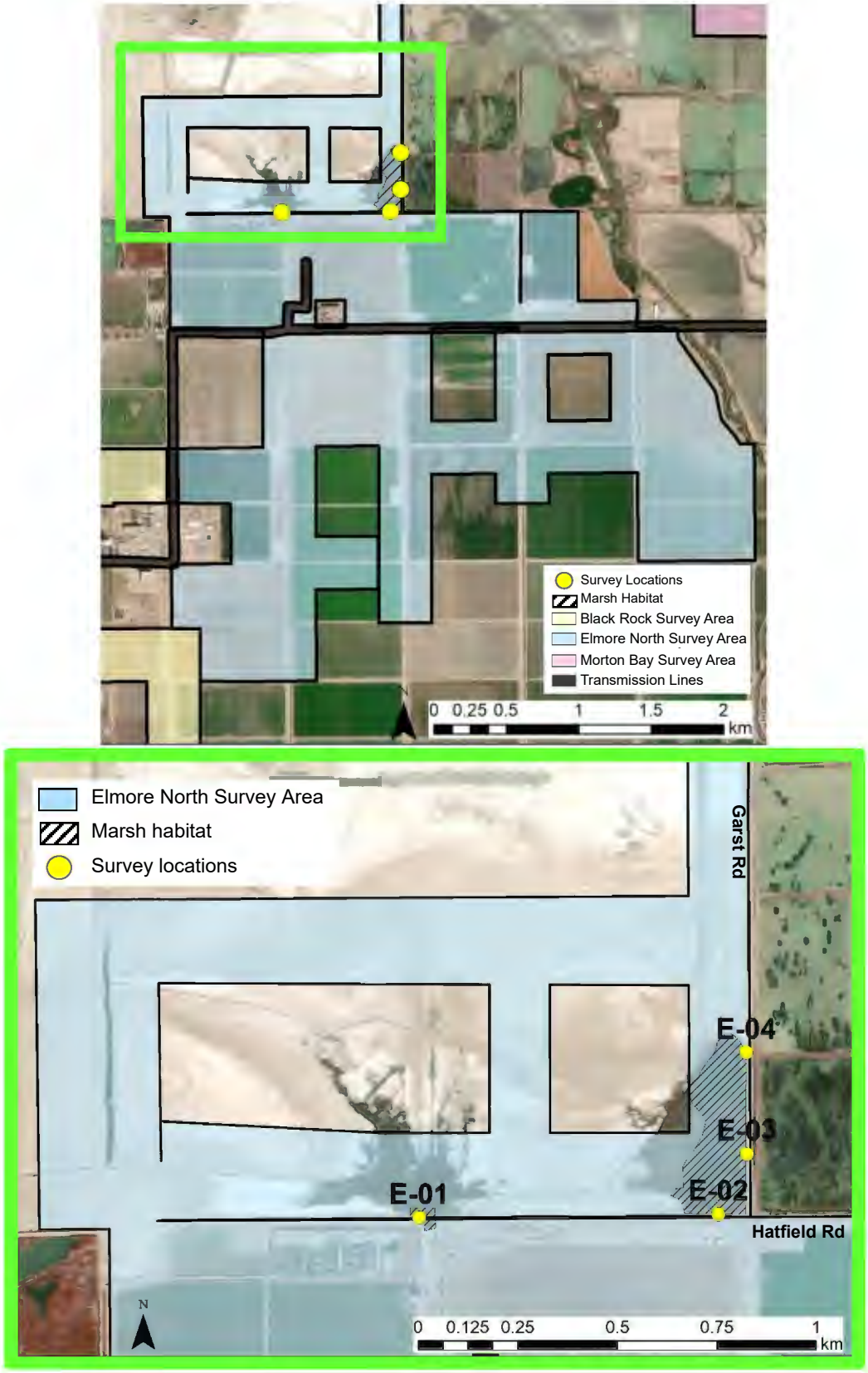

Figure 4. Yuma Ridgway's rail survey locations in the Elmore North area.

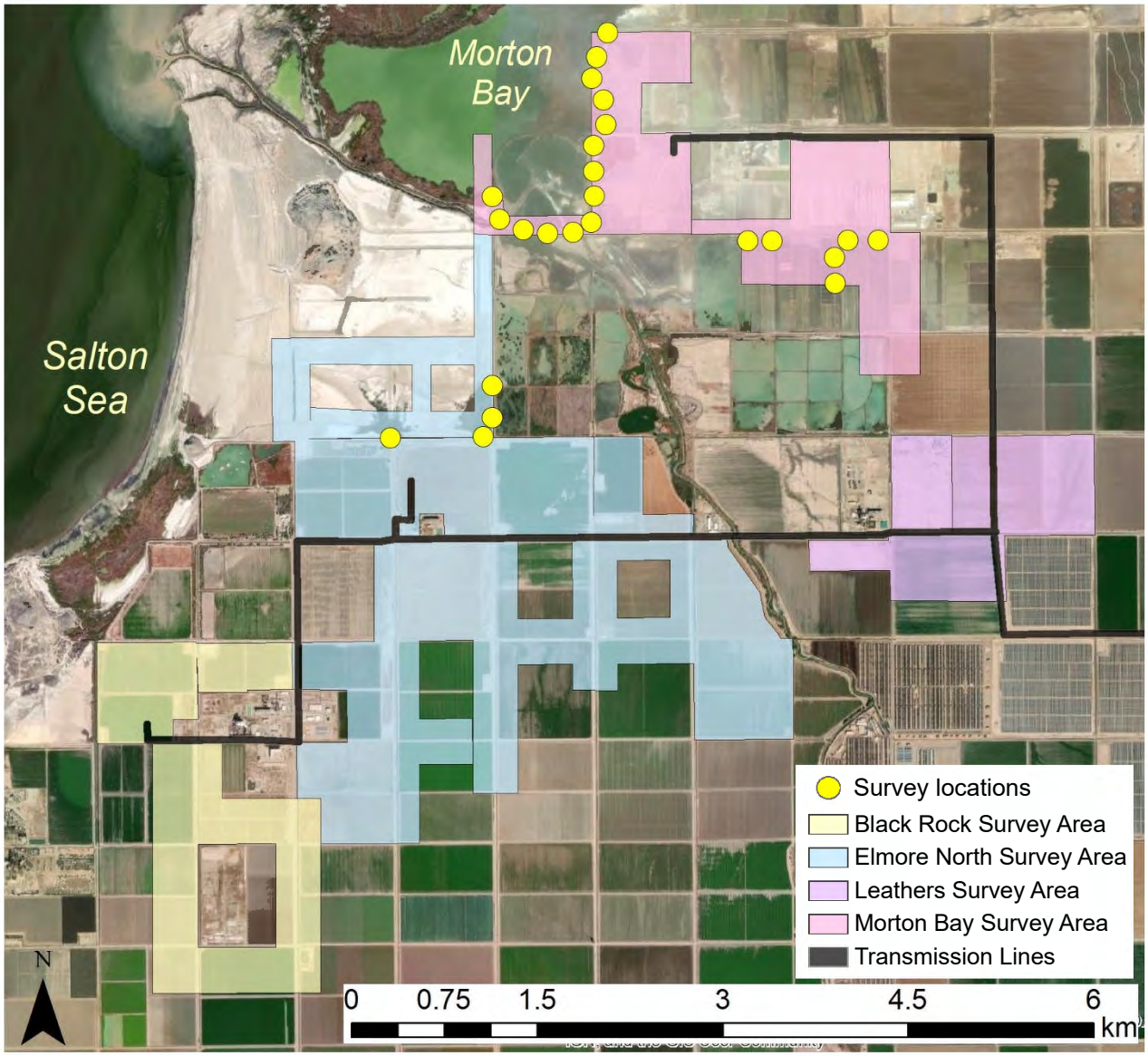

Figure 5. The 24 survey locations that had potential rail habitat where the survey team conducted call-broadcast surveys for Yuma Ridgway's rails are depicted by yellow circles.

Figure 7. Northwest pond in the Morton Bay proposed development area. When the survey team initially assessed this area in May 2022, cattails were short and just getting established and woody cover was dominant. By July 2022, cattails had grown substantially providing potentially good habitat for Yuma Ridgway's rail. The yellow line is a reference point for both photographs.