From:	Strohl, Virginia
To:	Aaron Yue; Kevin Russell
Cc:	Innis, Pamela S; "richard_meyers@fws.gov"; Sparks, Edwin A; Funk, Alexander@Wildlife; Russell, Curt; Bonnett, Kristina; Hong, Christina/LAC; Eisert, Marjorie/SAC
Subject:	[EXTERNAL] 2021 Southwestern Willow Flycatcher Presence/Absence Surveys Report
Date:	Friday, May 20, 2022 5:57:23 PM
Attachments:	2021 SWFL Survey Report for the Topock Compresor Station Groundwater Remediation Project.pdf

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Please find attached the 2021 Southwestern Willow Flycatcher Presence/Absence Surveys Report which presents the findings of the five Southwestern Flycatcher (SWFL) protocol surveys conducted between May and June 2021 in areas near the PG&E Topock Compressor Station. This survey and report was completed in compliance of the Programmatic Biological Agreements and the Bird Impact Avoidance and Minimization Plan that was a requirement of Mitigation Measure BIO-2a of the SEIR. Please don't hesitate to contact me with any questions.

Regards, -Virginia

Virginia Strohl | Senior Biologist
Pacific Gas and Electric Company | 406 Higuera Street | San Luis Obispo, California 93401-3869
559.515.3904 cell | v1s4@pge.com

Topock Project Executive Abstract

Document Title: *2021 Southwestern Willow Flycatcher Presence/Absence Surveys for the PG&E Topock Compressor Station* Submitting Agency: BLM, USFWS, and DTSC Final Document? ☒ Yes ☐ No	Date of Document: March 21, 2022 Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) – PG&E
Priority Status: ☐ **HIGH** ☒ **MED** ☐ **LOW** Is this time critical? ☒ Yes ☐ No Type of Document: ☐ Draft ☒ Report ☐ Letter ☐ Memo ☐ Other / Explain:	Action Required: ☒ Information Only ☐ Review & Comment Return to: _____ By Date:_____ ☐ Other / Explain:
What does this information pertain to? ☐ Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA) ☐ RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment) ☐ Corrective Measures Study (CMS)/Feasibility Study (FS) ☐ Corrective Measures Implementation (CMI)/Remedial Action ☒ California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR) ☐ Interim Measures ☒ Other / Explain: Programmatic Biological Opinion	Is this a Regulatory Requirement? ☒ Yes ☐ No If no, why is the document needed?
What is the consequence of NOT doing this item? What is the consequence of DOING this item? Non-compliance with Programmatic Biological Opinion and Mitigation Measure BIO-2a in SEIR (DTSC, December 2017).	Other Justification/s: ☐ Permit ☐ Other / Explain:

Brief Summary of attached document:

The 2021 Southwestern Willow Flycatcher Presence/Absence Surveys Report presents the finding of the five Southwestern Flycatcher (SWFL) protocol surveys conducted between May and July 2021 in areas near the PG&E Topock Compressor Station. Three SWFL individuals were detected only at the Arizona location, AZ-1, during the 2021 survey. A single individual on May 18 and two individuals detected together on June 8 at AZ-1 were considered to be transients. In fact, transient SWFL have been detected in all survey years since SWFL surveys began in 2006, except in 2010 and 2017. It was noted that habitat quality had improved slightly since the 2017 survey when damage from wildfires in 2015 and 2016 and introduced tamarisk leaf beetles (*Diorhabda* spp.) in 2017 was more prevalent. Given the cumulative detections of SWFL over the years and the presence of suitable habitat, there is potential for SWFL to breed in suitable habitat identified in the Action Area. For this reason, continuing SWFL surveys and monitoring of habitat quality was recommended. In addition, given the anticipated changes in project activities that will avoid impacts near several of the survey areas, a reduction in the size of the survey areas is being proposed for the 2024 SWFL survey.

Written by: PG&E

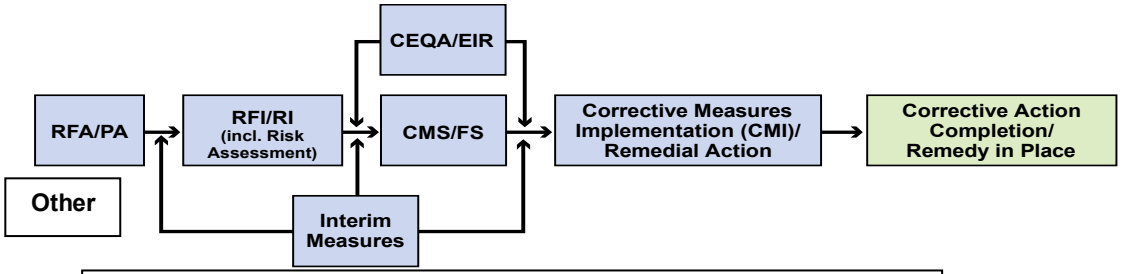
Recommendations:
The report is for information only.

How is this information related to the Final Remedy or Regulatory Requirements:
The survey and this report fulfill the requirement of General Management Measure 27 of the PBA; Species-Specific Mitigation Measure in the Bird Impact Avoidance and Minimization Plan; and Mitigation Measure BIO-2a in the SEIR.

Other requirements of this information?
None

Related Reports and Documents:

Click any boxes in the Regulatory Road Map (below) to be linked to the Documents Library on the DTSC Topock Web Site (www.dtsc-topock.com).



Legend
RFA/PA – RCRA Facility Assessment/Preliminary Assessment
RFI/RI – RCRA Facility Investigation/CERCLA Remedial Investigation (including Risk Assessment)
CMS/FS – RCRA Corrective Measure Study/CERCLA Feasibility Study
CEQA/EIR – California Environmental Quality Act/Environmental Impact Report

Version 9

2021 Southwestern Willow Flycatcher Presence/Absence Surveys for the PG&E Topock Compressor Station

Prepared by:

Kleinfelder

Prepared for:

Jacobs and

Pacific Gas & Electric Co.

October 2021

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Introduction

Under contract to Jacobs, Kleinfelder conducted a protocol survey for the southwestern willow flycatcher (SWFL) (*Empidonax traillii extimus*) for Pacific Gas and Electric (PG&E) near the Topock Compressor Station Groundwater Remediation Project, 15 miles southeast of Needles, California. The purpose of the survey was to determine the presence or absence of SWFL, which are listed as endangered by the Arizona Game and Fish Department (AZGFD) and threatened by the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS). Surveys were conducted by Jeff Steinman a USFWS and CDFW permitted SWFL biologist and followed the survey protocol outlined in *A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher* (Sogge *et al.* 2010). In addition to this year's survey, Garcia and Associates conducted previous SWFL surveys in this area annually between 2005 and 2010 as prescribed in the 2007 Programmatic Biological Assessment (PBA) prepared for the project (CH2M HILL 2007). Based on these survey results, the SWFL survey frequency was reduced with surveys occurring every 2 years between 2010 and 2014. Currently, the survey frequency is every 3 years as prescribed by mitigation measure 27 of the 2014 PBA (CH2M HILL 2014), which states:

> *Riparian areas surrounding the proposed Action Area and subject to influence of operations and maintenance activities shall be surveyed for southwestern willow flycatcher according to the protocol established by the USFWS. These surveys shall be completed every three years by a biologist permitted by the USFWS to carry out flycatcher surveys until the project has been completed and all facilities have been removed. Reports shall be provided to the biologists in the BLM Lake Havasu Field Office and the USFWS's Phoenix, Arizona Ecological Services Field (AESO) Office (2321 West Royal Palm Road, Suite 103, Phoenix, AZ 85021, 602-242-0210) at the end of each survey period.*

According to this schedule of survey frequency, SWFL surveys were conducted in 2017 and should have been conducted again in 2020. However, due to the Covid pandemic, the 2020 surveys were, instead, conducted in 2021.

Site Description

The Action Area defined in the 2007 and 2014 PBA is the area in which groundwater remediation activities and monitoring well maintenance are occurring and potential impacts to SWFL are being considered. Three sites that contain suitable habitat for SWFL have been identified within the Action Area. One site in San Bernardino County, California, and two sites in Mohave County, Arizona. During previous surveys the sites were further divided into six sites in San Bernardino County, California, and four sites in Mohave County, Arizona. However, it was suggested by the USFWS that the sites be consolidated since the survey sites were small and multiple sites were being surveyed on the same day. In California site CA-1 is located on land owned or managed by the Bureau of Land Management, Moabi Regional Park, Burlington Northern Santa Fe Railway, and the California portion of the USFWS Havasu National Wildlife Refuge (Figure 1). In Arizona

both sites are located in the Arizona portion of the USFWS Havasu National Wildlife Refuge (Figure 2). Although the naming and grouping of the sites have been changed, no changes were made to the footprint of the survey area since the 2017 survey. The sites still total approximately 160 acres in size and vary in elevation from 300 to 500 feet above sea level. None of the survey sites are located within USFWS designated critical habitat for the SWFL (USFWS 2005). Photographs of the sites are provided in Appendix A.

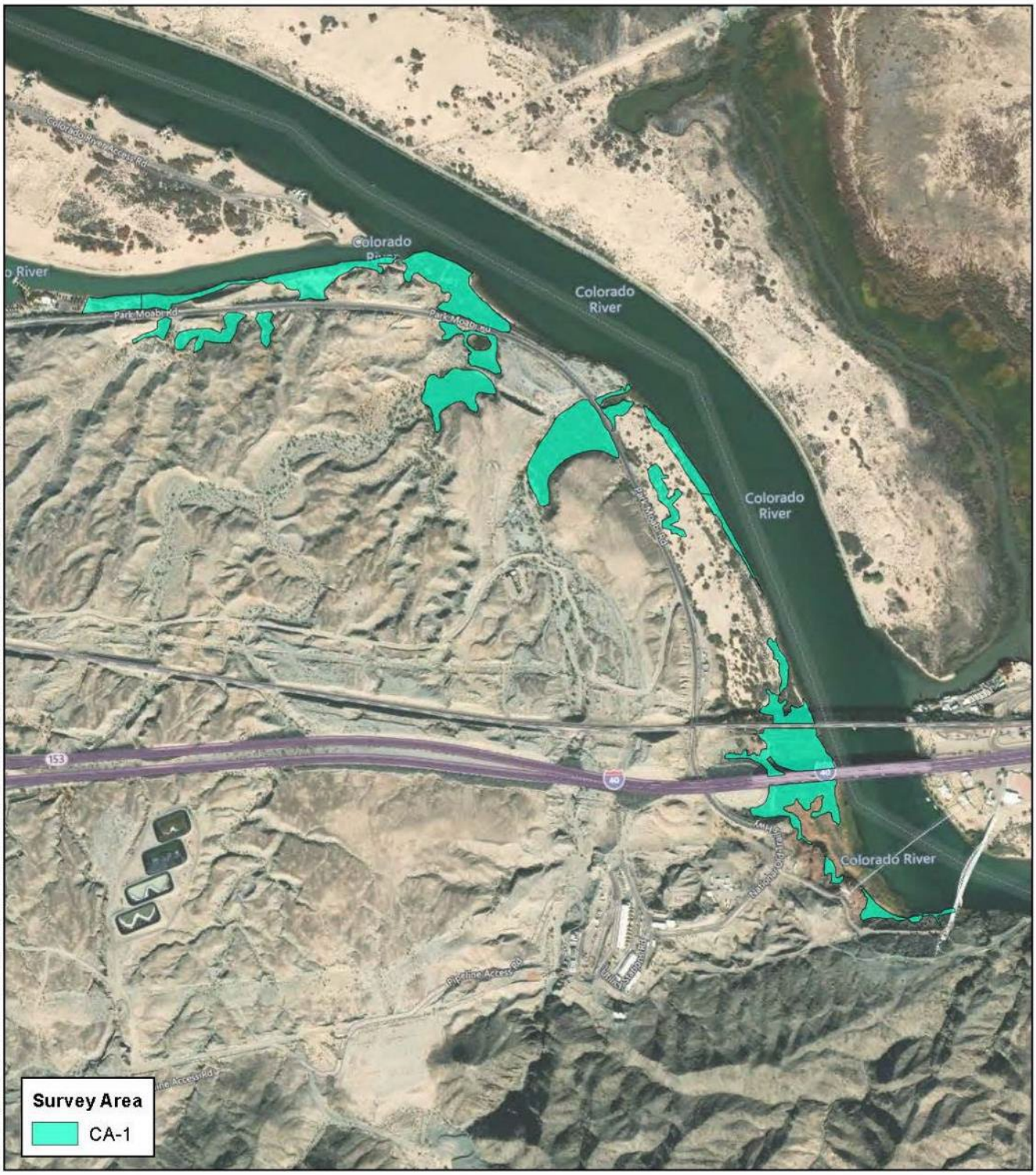
Vegetation and Habitat Quality

The most abundant plant species in the survey sites include tamarisk (*Tamarix ramosissima* and *Tamarix aphylla*), sandbar willow (*Salix exigua*), screw bean mesquite (*Prosopis pubescens*), catclaw acacia (*Senegalia greggii*), arundo (*Arundo donax*), and arrow weed (*Pluchea sericea*). Tamarisk is the dominant species throughout the survey sites, often forming dense thickets over eight feet in height. A complete list of the plant species observed is included in Appendix B.

Habitat Quality

Overall, the survey sites are of moderate habitat quality for SWFL. The Colorado River provides standing surface water throughout the breeding season and includes suitable vegetation composition; however, habitat fragmentation and human disturbance detract from the overall habitat quality. The habitat quality of the survey sites and the Action Area outlined in the 2007 and 2014 PBA (CH2M HILL 2007 and 2014) has been reassessed each year during the first survey. The reassessment consists of observing the Action Area and each site for any changes in habitat and vegetation quality. Any new potential habitat identified within the Action Area would be added to the surveys and any habitat that is determined to no longer be suitable would be eliminated from the survey based on the findings of this assessment. This year no additional potential habitat was added or subtracted from the survey area. Although some changes in habitat quality did occur, they were not significant enough to make any changes to the survey areas. These changes are addressed below.

The California site (Figure 1) is composed of several small pockets of habitat that are geographically isolated by the surrounding desert, National Trails Highway, and the Colorado River. Additionally, the California sites are subject to a high level of human disturbance due to their proximity to Moabi Regional Park, Interstate 40, the Burlington Northern Santa Fe Railway, the Pirate Cove Resort, and the PG&E Topock Compressor Station. Arizona site AZ-1 (Figure 2) is located on a large peninsula between the Colorado River and the Topock Marsh and is bordered by contiguous riparian habitat and bulrush-dominated marsh. However, this site and the other Arizona site AZ-2 (Figure 2) are also adjacent to the Oatman Topock Highway and the Topock Marina, a community that includes several houses and businesses. Recreational watercraft, frequently observed on the Colorado River and in the Topock Marsh, contribute to regular human disturbance at all the sites.



Source: Bing Maps

0 500 1,000 Feet

0 150 300 Meters

N

Scale 1:12,000

Figure 1.
2021 Topock SWFL Survey
San Bernardino County, California

KLEINFELDER

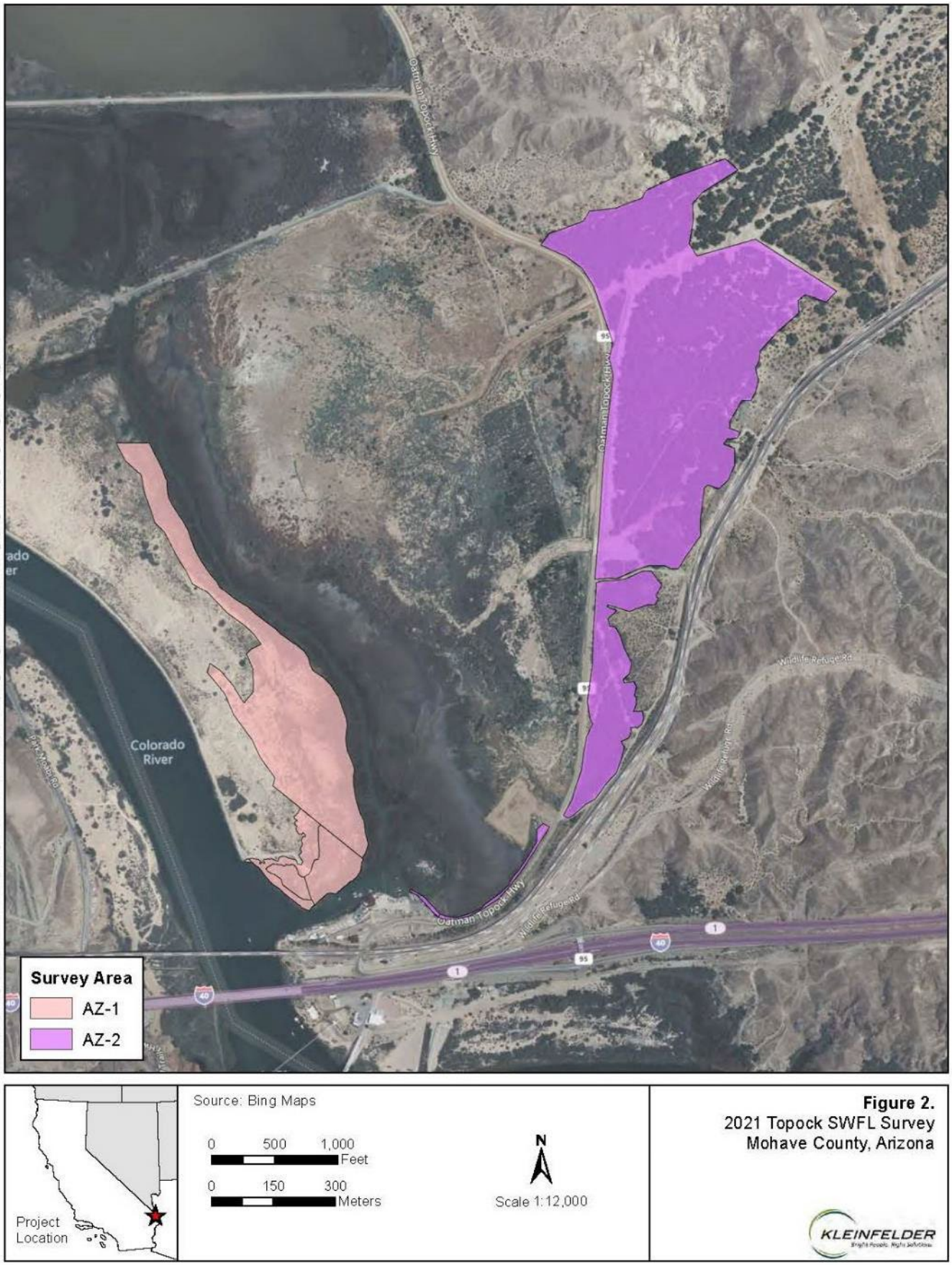


Figure 2. Arizona survey sites AZ-1 and AZ-2.

Habitat quality has improved since the 2017 survey, when habitat quality was observed to have diminished due to wildfires in 2015 and 2016 and damage from the introduced tamarisk leaf beetles (*Diorhabda* spp.) in 2017. Habitat quality has shown particular improvement in site AZ-1 along the Topock Marsh shoreline, where the number and size of sandbar willows have grown substantially since the 2017 survey. However, the inland habitat of site AZ-1 still suffers from reduced habitat quality and has not recovered enough to be surveyed. Appendix A photos 8 to 11 demonstrate the habitat along the Topock Marsh shoreline. Site CA-1 was not as significantly affected by the 2015 fire as AZ-1 was by the 2016 fire, but habitat quality still shows some signs of being affected by the 2015 fire and the tamarisk leaf beetle. However, the site has made some recovery. Tamarisk, the dominant plant in the survey area, is resprouting from the base of affected plants and those plants that were damaged but not killed by the fire and beetle damage are showing signs of regeneration. No changes were made to the CA-1 survey area in 2017 or this year. Appendix A photo 8 shows the persistent damage at site CA-1 from the 2015 fire and photos 12 and 13 show the persistent damage from the 2016 fires to site AZ-1. Habitat quality at site AZ-2 has diminished since the 2017 survey from the installation of rock flood control breaks along the Sacramento Wash, and the expansion of the laydown yard for construction of the overpass and flood control breaks. However, no changes were made to the survey area this year. Appendix A photos 18 to 23 show the flood control breaks and expanded lay down yard. Appendix A provides photos representative of each survey site.

Survey Methods

Surveys were conducted by Kleinfelder wildlife biologist Jeff Steinman (USFWS Permit #TE-085026-7, AZGFD Permit #SP407129, and CDFW Permit SC-007801). All surveys followed the protocol outlined by Sogge *et al.* (2010). For project-related surveys, the 2010 protocol recommends that five surveys be conducted during three survey periods, with two surveys occurring within each of the last two survey periods. The three survey periods are defined as May 15 to 31, June 1 to 24, and June 25 to July 17. Mr. Steinman conducted the SWFL surveys from May 17 to 19, June 6 to 9, June 14 to 16, June 28 to 30, and July 12 to 14. All surveys were conducted between 5:00 AM and 10:00 AM. Completed survey forms for each site are included in Appendix C.

The survey method consisted of using an MP3 player and speaker system to broadcast SWFL calls every 20 to 30 meters along survey routes through the survey sites. At each survey site, the first 10 minutes were spent listening for the presence of any singing flycatchers. After this initial listening period, SWFL "*fitz-bew*" calls were broadcast for a 30-second period, immediately followed by a 60-second listening period. To reduce bias, start times at each site and the survey starting points were intentionally varied from one visit to the next.

Results

Three SWFL were detected during the 2021 survey. A single individual was detected in site AZ-1 on May 18th and two individuals were detected together at site AZ-1 on June 8th. These detections are considered transient individuals since no detections occurred later in the season that would indicate SWFL were breeding in the area. Transient SWFL have been detected during every

previous survey year except 2010 and 2017, when no SWFL were detected. Previously, SWFL were detected in sites CA-1 in 2005, CA-1 and AZ-1 in 2007, AZ-1 in 2008, CA-1in 2009, CA-1 in 2012 and in CA-1 and AZ-1 in 2014. (GANDA 2005, 2006, 2007, 2008, 2009, 2010, 2012, 2014 and 2017). The locations of all SWFL observations recorded since 2005 are shown in Figure 3.

Incidental Species

Many additional wildlife species were observed during the SWFL survey. The diversity and abundance of wildlife species encountered are influenced by the proximity of the survey sites to the creosote-dominated desert and the Topock Marsh, a large wetland with abundant wildlife. The most commonly observed non-avian vertebrate species were black-tailed jackrabbit (*Lepus californicus)*, burro (*Equus asinus*) and western side-blotched lizard (*Uta stansburiana*). The most commonly observed avian species were great-tailed grackle (*Quiscalus mexicanus*), white-winged dove (*Zenaida asiatica*), and Abert's towhee (*Pipilo aberti*). The locations of all incidental observations recorded in 2021 are shown in Figure 4. Complete lists of wildlife species observed are included in Appendix B.

Incidental species observations during the 2021 surveys included multiple detections of Arizona Bell's vireo (*Vireo bellii arizonae*) and Yuma Ridgway's rail (*Rallus obsoletus yumanensis*). The Arizona subspecies of Bell's vireo are not listed as a special status species but were proposed to be listed in 1981. In California, the least Bell's vireo subspecies is listed as endangered. No Bell's vireo were observed in California; however the Arizona Bell's vireo were observed in both Arizona sites during every survey period, along Topock Marsh in site AZ-1, and from the eastern tip of site AZ-2 and outside of site AZ-2 along the boundary between Topock Marsh and the Oatman Highway. Arizona Bell's vireos are believed to be breeding in all three locations where they were observed. Yuma Ridgway's rail, which are listed as a species of special concern in Arizona and as Endangered by the USFWS, were observed in Arizona site AZ-1 during all the early surveys and are believed to be breeding in that area. Yuma Ridgway's rails were also observed in California at site CA-1 for the first time on June 29th. However, since they are expected to be finished with nesting by May 15th, their status as nesting in California could not be confirmed and additional breeding season surveys would be recommended. In addition to these species, a great blue heron rookery and an American kestrel nest were observed, and the locations are shown in Figure 4. Both species are protected by the International Migratory Bird Treaty Act. Disturbance to the rookery and nest should, therefore, be avoided. Brown-headed cowbird (*Molothrus ater*), a known nest parasite of SWFL, were observed at all three survey sites. The locations of all incidental species observations except for brown-headed cowbirds are shown in Figure 4 and their GPS coordinates are located in Appendix D.

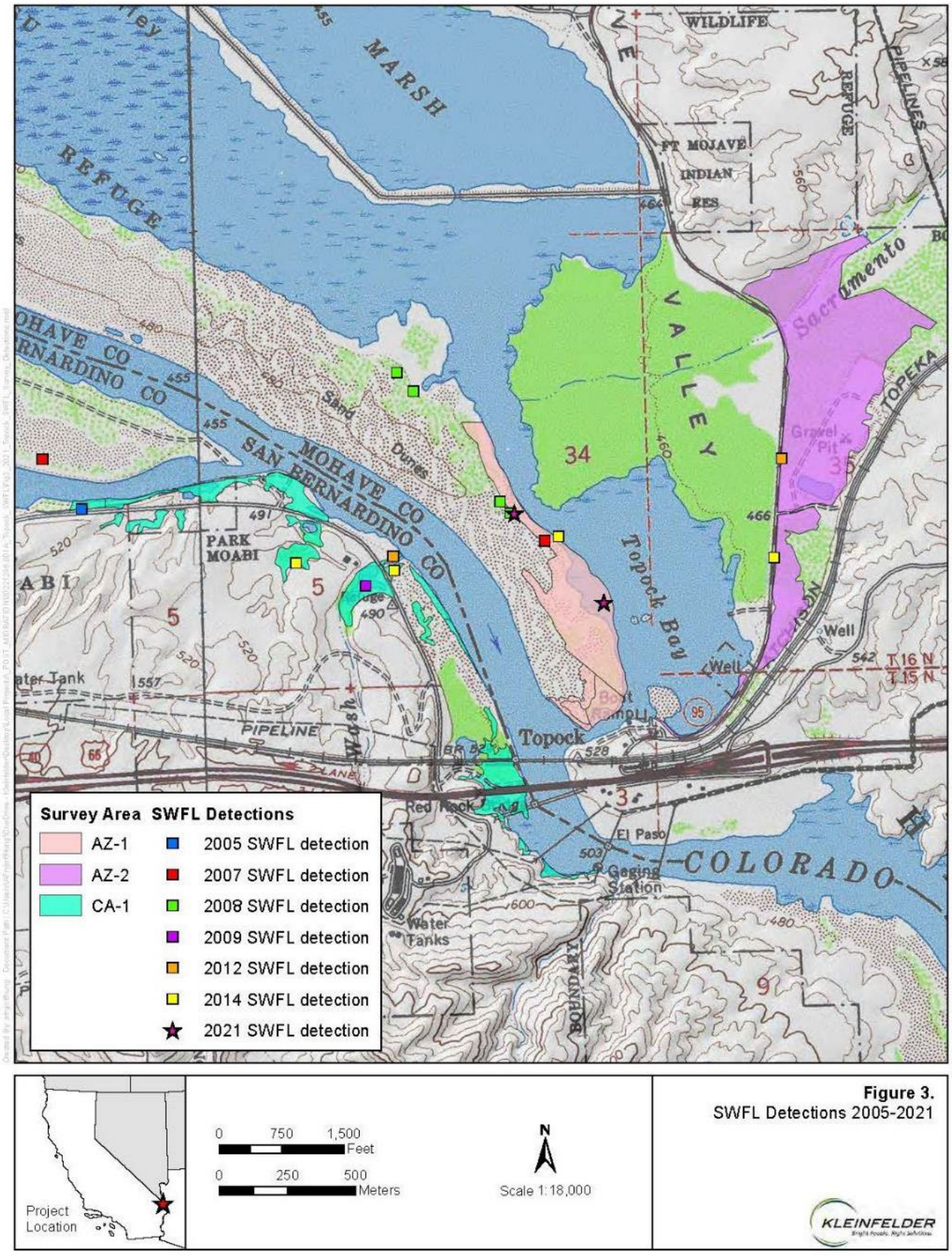


Figure 3. SWFL Detections. 2005-2021

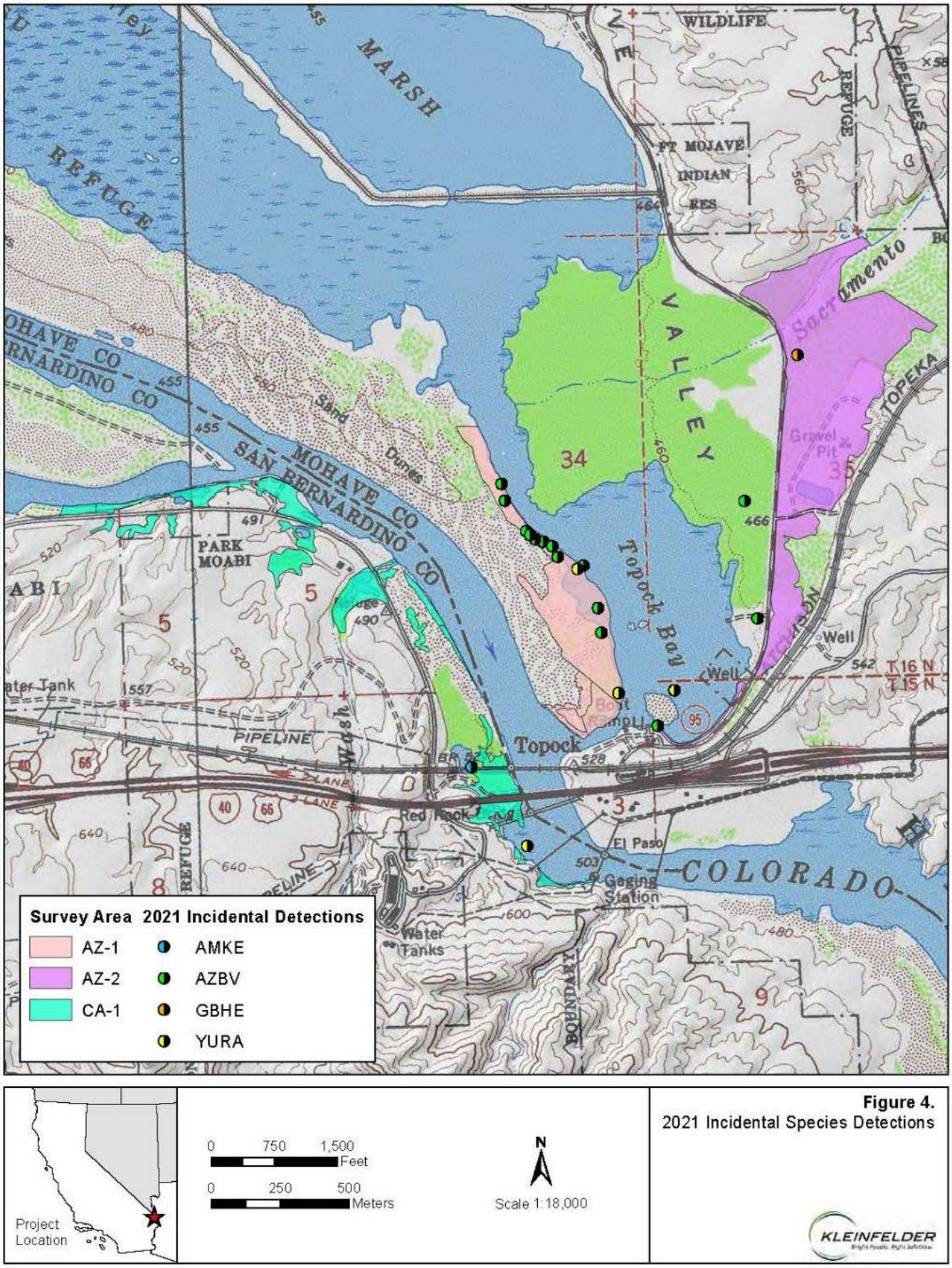


Figure 4. Incidental Species Detections

Conclusions

Before the Topock fires and the introduction of the tamarisk leaf beetles, the habitat within the survey sites and Action Area were continuing to improve. More transient SWFL were observed in 2014 than any of the previous surveys. However, no SWFL were observed during the 2017 survey, which could be contributed to the decline in habitat quality due to the fires and tamarisk leaf beetles. Fortunately, the reemergence of native vegetation could result in improved habitat in the future. In addition, if tamarisk leaf beetles continue to impact habitat in other nearby areas, SWFL could move out of those areas and establish nests in the native vegetation that is reemerging within the Action Area.

Coupled with the cumulative detections of SWFL over the years and the presence of suitable habitat (Ellis, *et al.* 2008, SWCA 2004), there is potential for SWFL to breed in the suitable habitat identified in the Action Area in the future. Given these conditions, continuing the survey effort is recommended, as agreed to in the 2014 PBA (CH2M HILL 2014). Additionally, given the fire and tamarisk leaf beetle impacts on habitat in the survey sites, it is recommended to continue to assess habitat quality during future surveys.

In addition to considering changes in the habitat quality in assessing the survey area, changes in activities within the project Action Area also need to be considered. After consultation with PG&E it was determined that there are no definitive, near-term plans to conduct any project activities in or near several of the areas that were surveyed this year and in previous years. In consideration of this, a reduction in size of the survey areas is being proposed for the 2024 survey.

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2009. Southwestern Willow Flycatcher Presence/Absence Surveys for the PG&E Topock Compressor Station. September.

2010. Southwestern Willow Flycatcher Presence/Absence Surveys for the PG&E Topock Compressor Station. September.

2012. Southwestern Willow Flycatcher Presence/Absence Surveys for the PG&E Topock Compressor Station. September.

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Appendix A

Photo Log

Photo 1. Site CA-1 View of southern portion of survey area (Facing South).

Photo 2. Site CA-1 View of southern portion of survey area and location of YURA detection (Facing North).

Photo 3. Site CA-1 Typical habitat in middle of survey area. Tamarisk, sandbar willow and mesquite overstory with arrow weed understory (Facing South).

Photo 4. Site CA-1 Middle of survey area showing remnant fire and tamarisk beetle damage.

Photo 5. Site CA-1 Northern portion of survey area showing Bat Cave Wash (Facing East).

Photo 6. Site CA-1 Eastern portion of survey area (Facing South).

Photo 7. Site CA-1 Northern portion of survey area (Facing North).

Photo 8. Site AZ-1 Eastern portion of survey area (Facing East).

Photo 9. Site AZ-1 Typical habitat along eastern portion of survey area (Facing North).

Photo 10. Site AZ-1 Closeup of typical habitat and location of SWFL detection. (Facing East).

Photo 11. Site AZ-1 Typical view of eastern habitat (Facing North).

Photo 12. Site AZ-1 Typical view of fire and beetle damaged habitat (Facing North).

Photo 13. Site AZ-1 Typical view of fire and beetle damaged habitat (Facing East).

Photo 14. Site AZ-2 Eastern portion of habitat (Facing East).

Photo 15. Site AZ-2 Interior showing typical Athel Tamarisk habitat (Facing East).

Photo 16. Site AZ-2 Exterior showing typical Athel Tamarisk habitat (Facing North)

Photo 17. Site AZ-2 Typical view of habitat along Kingman Highway (Facing West).

Photo 18. Site AZ-2 Flood damaged habitat (Facing East).

Photo 19. Site AZ-2 New flood control levee bisecting habitat (Facing South).

Photo 20. Site AZ-2 New flood control levee bisecting habitat (Facing North).

Photo 21. Site AZ-2 New flood control levee and overpass (Facing West).

Photo 22. Site AZ-2 Showing expanded laydown yard used for levee installation (Facing West).

Photo 23. Site AZ-2 Expanded portion of levee laydown Yard (Facing West).

Photo 25. Site AZ-2 Exterior of Arizona Bell's vireo habitat across from Site AZ-2 (Facing West).

Photo 26. Site AZ-2 Interior of vireo habitat (Facing West).

Appendix B

Incidental Plant, Vertebrate and Avian Species

Incidental Plant Species

Common Name	Latin Name
Arrowweed	*Pluchea sericea*
Athel Salt Cedar	*Tamarix aphylla*
Cheesebush	*Hymenoclea salsola*
Prickly Lettuce	*Lactuca serriola*
Buckhorn Cholla	*Cylindropuntia c.f. achanthocarpa*
Silver Cholla	*Cylindropuntia echinocarpa*
Pencil Cholla	*Cylindropuntia ramosissima*
California Barrel Cactus	*Ferocactus cylindraceus*
Beavertail	*Opuntia basilaris var. basilaris*
Russian Thistle	*Salsola tragus*
Catclaw Acacia	*Senagalia greggii*
Screw Bean Mesquite	*Prosopis pubescens*
Blue Palo Verde	*Parkinsonia florida*
Salt Cedar	*Tamarix ramosissima*
Coyote Willow	*Salix exigua*
Gooding's Willow	*Salix gooddingii*
Cattail	*Typha angustifolia*

Incidental Vertebrate Species

Common Name	Scientific Name
American Bullfrog	*Rana catesbeiana*
Beaver	*Castor canadensis*
Black-tailed Jackrabbit	*Lepus californicus*
Black-tailed Deer	*Odocoileus hemionus*
Burro	*Equus asinus*
Coyote	*Canis latrans*
Desert Cottontail	*Sylvilagus audubonii*
Desert Iguana	*Dipsosaurus dorsalis*
Gray Fox	*Urocyon cinereoargenteus*
Western Side-blotched Lizard	*Uta stanburiana*

Incidental Avian Species

Common Names	Scientific Names
Abert's Towhee	*Melozone aberti*
American Coot	*Fulica americana*
American Kestrel	*Falco sparverius*
Anna's Hummingbird	*Calypte anna*
Arizona Bell's Vireo	*Vireo bellii*
Ash-throated Flycatcher	*Myiarchus cinerascens*
Bewicks Wren	*Thryomanes bewickii*
Black Pheobe	*Sayornis nigricans*
Black-chinned Hummingbird	*Archilochus alexandri*
Black-tailed Gnatcatcher	*Polioptila melanura*
Blue Grosbeak	*Passerina caerulea*
Brown-headed Cowbird	*Molothrus ater*
Bushtit	*Psaltriparus minimus*
California Gull	*Larus californicus*
Canada Goose	*Branta canadensis*
Caspian Turn	*Hydroprogne caspia*
Cliff Swallow	*Petrochelidon pyrrhonota*
Common Raven	*Corvus corax*
Common Yellowthroat	*Geothlypis trichas*
Double-crested Cormorant	*Phalacrocorax auritus*
Eared Grebe	*Podiceps nigricollis*
Eurasian-collared Dove	*Streptopelia decaocto*
Gambel's Quail	*Callipepla gambelii*
Great Blue Heron	*Ardea herodias*
Great Horned Owl	*Bubo virginianus*
Greater Roadrunner	*Geococcyx californianus*
Great-tailed Grackle	*Quiscalus mexicanus*
Green Heron	*Butorides virecens*
House Finch	*Haemorhous mexicanus*
Killdeer	*Charadrius vociferous*
Ladder-backed Woodpecker	*Picoides scalaris*
Lesser Nighthawk	*Chordeiles acutipennis*
Loggerhead Shrike	*Lanius ludovicianus*
Lucy's Warbler	*Oreothlypis luciae*
Mallard	*Anas platyrhynchos*
Marsh Wren	*Cistothorus palustris*
Mourning Dove	*Zenaida macroura*
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
Orange-crowned Warbler	*Leiothlypis celata*
Osprey	*Pandion haliaetus*
Pacific-slope Flycatcher	*Empidonax difficilis*
Pied-billed Grebe	*Podilymbus podiceps*
Red-winged Blackbird	*Agelaius phoeniceus*
Rock Pigeon	*Columba livia*
Song Sparrow	*Melospiza melodia*
Southwestern Willow Flycatcher	*Empidonax traillii extimus*
Townsend's Warbler	*Setophaga townsendi*
Turkey Vulture	*Cathartes aura*
Verdin	*Auriparus flaviceps*
Western Grebe	*Aechmorphous occidentalis*
Western Kingbird	*Tyrannus verticalis*
White-faced Ibis	*Plegadis chihi*
White-throated Swift	*Aeronautes saxatalis*
White-winged Dove	*Zenaida asiatica*
Wilson's Warbler	*Cardellina pusilla*
Yellow-breasted Chat	*Icteria virens*
Yuma Clapper Rail	*Rallus obsoletus yumanensis*

Appendix C

Survey Forms

Willow Flycatcher (WIFL) Survey and Detection Form (revised April, 2010)

Site Name: **Topock AZ-1** State: **AZ** County: **Mohave**

USGS Quad Name: **Topock** Elevation: **134** (meters)

Creek, River, or Lake Name: **Colorado River**

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ***Yes*** **X** ***No*** ____

Survey Coordinates: Start: E **-114.485273** N **34.719818** UTM Datum: **83** (See instructions)

Stop: E **-114.489053** N **34.728677** UTM Zone: **11**

If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

*****Fill in additional site information on back of this page*****

Survey # Observer(s) (Full Name)	Date (m/d/y) Survey Time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding;-potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator.	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
Survey # 1	Date: 5/18/2021	1	0	0	No	AZBV and RIRA observed	# Birds	Sex	UTM E	UTM N
Observer(s): J Steinman	Start: 6:06						1	unk	34.72633	-114.488185
	Stop: 9:03									
	Total hrs: 177.0									
Survey # 2	Date: 6/8/2021	2	0	0	NA	BHCO and AZBV observed	# Birds	Sex	UTM E	UTM N
Observer(s): J Steinman	Start: 5:57						2		34.7233	-114.484683
	Stop: 9:10									
	Total hrs: 193.0									
Survey # 3	Date: 6/14/2021	0	0	0	NA	AZBV and RIRA observed	# Birds	Sex	UTM E	UTM N
Observer(s): J Steinman	Start: 6:14									
	Stop: 8:59									
	Total hrs: 165.0									
Survey # 4	Date: 6/29/2021	0	0	0	NA	AZBV and RIRA observed	# Birds	Sex	UTM E	UTM N
Observer(s): J Steinman	Start: 6:06									
	Stop: 9:07									
	Total hrs: 181.0									
Survey # 5	Date: 7/13/2021	0	0	0	NA	BHCO and AZBV observed	# Birds	Sex	UTM E	UTM N
Observer(s): J Steinman	Start: 6:06									
	Stop: 9:11									
	Total hrs: 185.0									
Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings Be careful not to double count individuals Total survey hrs: 15.0		Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any WIFLs color-banded? Yes ____ No X If yes, report color combination(s) in the comments section on back of form and report to USFWS.				
		0	0	0	na					

Reporting Individual: **Jeff Steinman** Date Report Completed: **9/30/2021**

US Fish & Wildlife Service Permit #: **TE-085026-5** State Wildlife Agency Permit #: **AZ SP407129**

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual: **Jeff Steinman** Phone #: **(415) 250-2692**

Affiliation: **Kleinfelder** E-mail: JSteinman@Kleinfelder

Site Name: **Topock AZ-1** Date report Completed: **9/30/2021**

Was this site surveyed in a previous year? Yes____ No_X___ Unknown____

Did you verify that this site name is consistent with that used in previous yrs? Yes **x** No _____ Not Applicable _____

If name is different, what name(s) was used in the past? **Topack AZ**

If site was surveyed last year, did you survey the same general area this year? Yes _____ No **x** If no, summarize below.

Did you survey the same general area during each visit to this site this year? Yes **x** No _____ If no, summarize below.

Management Authority for Survey Area: Federal **x** Municipal/County _____ State _____ Tribal _____ Private _____

Name of Management Entity or Owner (e.g., Tonto National Forest) **Havasu National Wildlife Refuge**

Length of area surveyed: **1.2** (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

_____ Native broadleaf plants (entirely or almost entirely, > 90% native)

_____ Mixed native and exotic plants (mostly native, 50 - 90% native)

x Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name.

Tamarix spp., Salix Gooddingii, Senagalia gregii.

Average height of canopy (Do not include a range): **2** (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections;
2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests;
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

This survey area was severally damaged by both the Topock Fire and Tamarisk leaf beetles. The remainng stands consisted almost entirely of native vegetation. However some tamarisk had started to regrow by the end of the season.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Willow Flycatcher (WIFL) Survey and Detection Form (revised April, 2010)

Site Name: **Topock AZ-2** State: **AZ** County: **Mohave**

USGS Quad Name: **Topock** Elevation: **145** (meters)

Creek, River, or Lake Name: **Colorado River**

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? *Yes* **X** *No* ____

Survey Coordinates: Start: E **-114.482644** N **34.719196** UTM Datum: **83** (See instructions)

Stop: E **-114.478921** N **34.733641** UTM Zone: **11**

If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

*****Fill in additional site information on back of this page*****

Survey # Observer(s) (Full Name)	Date (m/d/y) Survey Time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding-potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator.	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1	Date:									
Observer(s):	5/17/2021									
J Steinman	Start:									
	6:15	0	0	0	NA	AZBV observed				
	Stop:									
	9:28									
	Total hrs:									
min.	193 min									
Survey # 2	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	6/7/2021									
J Steinman	Start:									
	6:20	0	0	0	NA	AZBV observed				
	Stop:									
	9:17									
	Total hrs:									
min.	177 min									
Survey # 3	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	6/15/2021									
J Steinman	Start:									
	5:29	0	0	0	NA	AZBV observed				
	Stop:									
	8:46									
	Total hrs:									
	197 min									
Survey # 4	6/29/2017						# Birds	Sex	UTM E	UTM N
Observer(s):	6/28/2021									
J Steinman	Start:									
	5:50	0	0	0	NA	AZBV observed				
	Stop:									
	9:15									
	Total hrs:									
	205 min									
Survey # 5	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	7/12/2021									
J Steinman	Start:									
	5:49	0	0	0	NA	AZBV and BHCO observed				
	Stop:									
	9:07									
	Total hrs:									
	198 min									

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals.	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any WIFLs color-banded? Yes ____ No ____ If yes, report color combination(s) in the comments section on back of form and report to USFWS.
Total survey hrs: 16.2	0	0	0	na	

Reporting Individual: **Jeff Steinman** Date Report Completed: **9/30/2021**

US Fish & Wildlife Service Permit #: **TE-085026-5** State Wildlife Agency Permit #: **AZ SP407129**

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual: **Jeff Steinman** Phone #: **(415) 250-2692**

Affiliation: **Kleinfelder** E-mail: JSteinman@Kleinfelder

Site Name: **Topock AZ-2** Date report Completed: **9/30/2021**

Was this site surveyed in a previous year? Yes____ No_x___ Unknown___

Did you verify that this site name is consistent with that used in previous yrs? Yes____ No__x__ Not Applicable____

If name is different, what name(s) was used in the past? **Previously surveyed as sites AZ2,3,4 and 5 in 2017**

If site was surveyed last year, did you survey the same general area this year? Yes____ No____ If no, summarize below.

Did you survey the same general area during each visit to this site this year? Yes__X__ No____ If no, summarize below.

Management Authority for Survey Area: Federal__x__ Municipal/County____ State____ Tribal____ Private____

Name of Management Entity or Owner (e.g., Tonto National Forest) **Havasu National Wildlife Refuge**

Length of area surveyed: **1,950 meters** (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

____ Native broadleaf plants (entirely or almost entirely, > 90% native)

____ Mixed native and exotic plants (mostly native, 50 - 90% native)

____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

__x__ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name.

Tamarix spp.

Average height of canopy (Do not include a range): **5** (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections;
2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests;
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

This survey are had considerable flood conrol work done since surveyed in 2017

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Willow Flycatcher (WIFL) Survey and Detection Form (revised April, 2010)

Site Name: **Topock CA-1** State: **CA** County: **San Bernardino**

USGS Quad Name: **Whale Mountain** Elevation: **134** (meters)

Creek, River, or Lake Name: **Colorado River**

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? *Yes* **X** *No* ____

Survey Coordinates: Start: E **729285** N **3845544** UTM Datum: **83** (See instructions)

Stop: E **729038** N **3845681** UTM Zone: **11**

If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

*****Fill in additional site information on back of this page*****

Survey # Observer(s) (Full Name)	Date (m/d/y) Survey Time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding-potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator.	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
Survey # 1	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	5/19/2021									
J Steinman	Start: 6:01	0	0	0	NA					
	Stop: 9:19									
	Total hrs: 198 min									
Survey # 2	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	6/9/2021									
J Steinman	Start: 6:03	0	0	0	NA	BHCO observed				
	Stop: 9:11									
	Total hrs: 188 min									
Survey # 3	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	6/16/2021									
J Steinman	Start: 5:51	0	0	0	NA	YURA observed				
	Stop: 8:55									
	Total hrs: 184 min									
Survey # 4	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	6/30/2021									
J Steinman	Start: 5:46	0	0	0	NA					
	Stop: 8:04									
	Total hrs: 138 min									
Survey # 5	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	7/14/2021									
J Steinman	Start: 5:31	0	0	0	NA					
	Stop: 7:35									
	Total hrs: 124 min									

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total survey hrs: 14.0	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any WIFLs color-banded? Yes ____ No ____ If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	na	

Reporting Individual: **Jeff Steinman** Date Report Completed: **9/30/2021**

US Fish & Wildlife Service Permit #: **TE-085026-5** State Wildlife Agency Permit #: **CA -007801**

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual: **Jeff Steinman** Phone #: **(415) 250-2692**

Affiliation: **Kleinfelder** E-mail: JSteinman@Kleinfelder

Site Name: **Topock CA-1** Date report Completed: **9/30/2021**

Was this site surveyed in a previous year? Yes_X___ No____ Unknown____

Did you verify that this site name is consistent with that used in previous yrs? Yes X No _____ Not Applicable _____

If name is different, what name(s) was used in the past? _____

If site was surveyed last year, did you survey the same general area this year? Yes X No _____ If no, summarize below.

Did you survey the same general area during each visit to this site this year? Yes X No _____ If no, summarize below.

Management Authority for Survey Area: Federal X Municipal/County _____ State _____ Tribal _____ Private _____

Name of Management Entity or Owner (e.g., Tonto National Forest) **BLM, Havasu Refuge, Park Moab**

Length of area surveyed: **2900 meters** (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

_____ Native broadleaf plants (entirely or almost entirely, > 90% native)

_____ Mixed native and exotic plants (mostly native, 50 - 90% native)

x Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name.

Acaci gregii, Tamarix spp.

Average height of canopy (Do not include a range): **3** (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections;
2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests;
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Appendix D

Incidental Species UTM Coordinates

Date	Site	Species	Location
5/17/21	AZ-2	AZBV	34.719416°, -114.482518°
5/17/21	AZ-2	GBHE	34.731444°, -114.476604°
5/18/21	AZ-1	SWFL	34.726330°, -114.488185°
5/18/21	AZ-1	YURA	34.724620°, -114.485530°
5/18/21	AZ-1	AZBV	34.726910°, -114.488340°
5/18/21	AZ-1	AZBV	34.725900°, -114.487530°
5/18/21	AZ-1	AZBV	34.725530°, -114.486870°
6/7/21	AZ-2	AZBV	34.726700°, -114.478845°
6/7/21	AZ-2	AZBV	34.719416°, -114.482518°
6/8/21	AZ-1	SWFL	34.723300°, -114.484683°
6/8/21	AZ-1	SWFL	34.723300°, -114.484683°
6/8/21	AZ-1	AZBV	34.722852°, -114.478456°
6/8/21	AZ-1	AZBV	34.725630°, -114.487180°
6/14/21	AZ-1	AZBV	34.727466°, -114.488455°
6/14/21	AZ-1	AZBV	34.722510°, -114.484660°
6/14/21	AZ-1	AZBV	34.725030°, -114.486300°
6/14/21	AZ-1	AZBV	34.725030°, -114.486300°
6/14/21	AZ-1	YURA	34.720512°, -114.484033°
6/15/21	AZ-2	AZBV	34.722852°, - 114.478456°
6/15/21	AZ-2	AZBV	34.726700°, -114.478845°
6/16/21	CA-1	YURA	34.720512°, -114.484033°
6/28/21	CA-1	MAKE	34.718224°, -114.489947°
6/28/21	AZ-2	AZBV	34.726700°, -114.478845°
6/28/21	AZ-2	AZBV	34.719416°, -114.482518°
6/29/21	AZ-1	AZBV	34.728536°, -114.489060°
6/29/21	AZ-1	AZBV	34.725379°, -114.486512°
6/29/21	AZ-1	AZBV	34.724715°, -114.485294°
6/29/21	AZ-1	AZBV	34.723325°, -114.484753°
6/29/21	AZ-1	YURA	34.720562°, -114.481822°
7/12/21	AZ-2	AZBV	34.719416°, -114.482518°
7/13/21	AZ-1	AZBV	34.725771°, -114.487388°