Pacific Gas and Electric Company

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September 17, 2007

Ms. Cathy Wolff-White
U.S. Department of the Interior
Bureau of Land Management
2610 Sweetwater Avenue
Lake Havasu City, AZ 86406

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

Dear Ms. Wolff-White:

This letter transmits the *Southwestern Willow Flycatcher Presence/Absence Surveys for the PG&E Topock Compressor Station*. This report was prepared in conformance with the Programmatic Biological Assessment, general project management measure 26, and includes information on the 2007 annual field survey for the southwestern willow flycatcher on lands near the PG&E Topock Compressor Station. The survey was conducted by Garcia and Associates (GANDA), and followed protocols established by the U.S. Fish and Wildlife Service. The survey results were similar to the past with no positive confirmation of southwestern willow flycatcher presence.

If you have any questions, please do not hesitate to contact me at (805) 546-5243.

Sincerely,

Yvonne Meeks

Cc: Jim Priest/BLM
John Earle/USFWS
Lesley Fitzpatrick/USFWS
Aaron Yue/DTSC
Canh Nguyen/CDFG
Rebecca Davidson/ADGF
Rob Knutson/PG&E

September 2007

SOUTHWESTERN WILLOW FLYCATCHER PRESENCE/ABSENCE SURVEYS FOR THE PG&E TOPOCK COMPRESSOR STATION

Prepared By:

Garcia and Associates

1 Saunders Avenue

San Anselmo, CA 94960

GARCIA and ASSOCIATES

NATURAL & CULTURAL RESOURCE CONSULTANTS

GANDA

Contents

Acronyms and Abbreviations

APE	Area of Potential Effect
GANDA	Garcia and Associates
PBA	Programmatic Biological Assessment
PG&E	Pacific Gas and Electric Company
SWFL	southwestern willow flycatcher
USFWS	United States Fish and Wildlife Service
UTM	Universal Transverse Mercator

1.0 Introduction

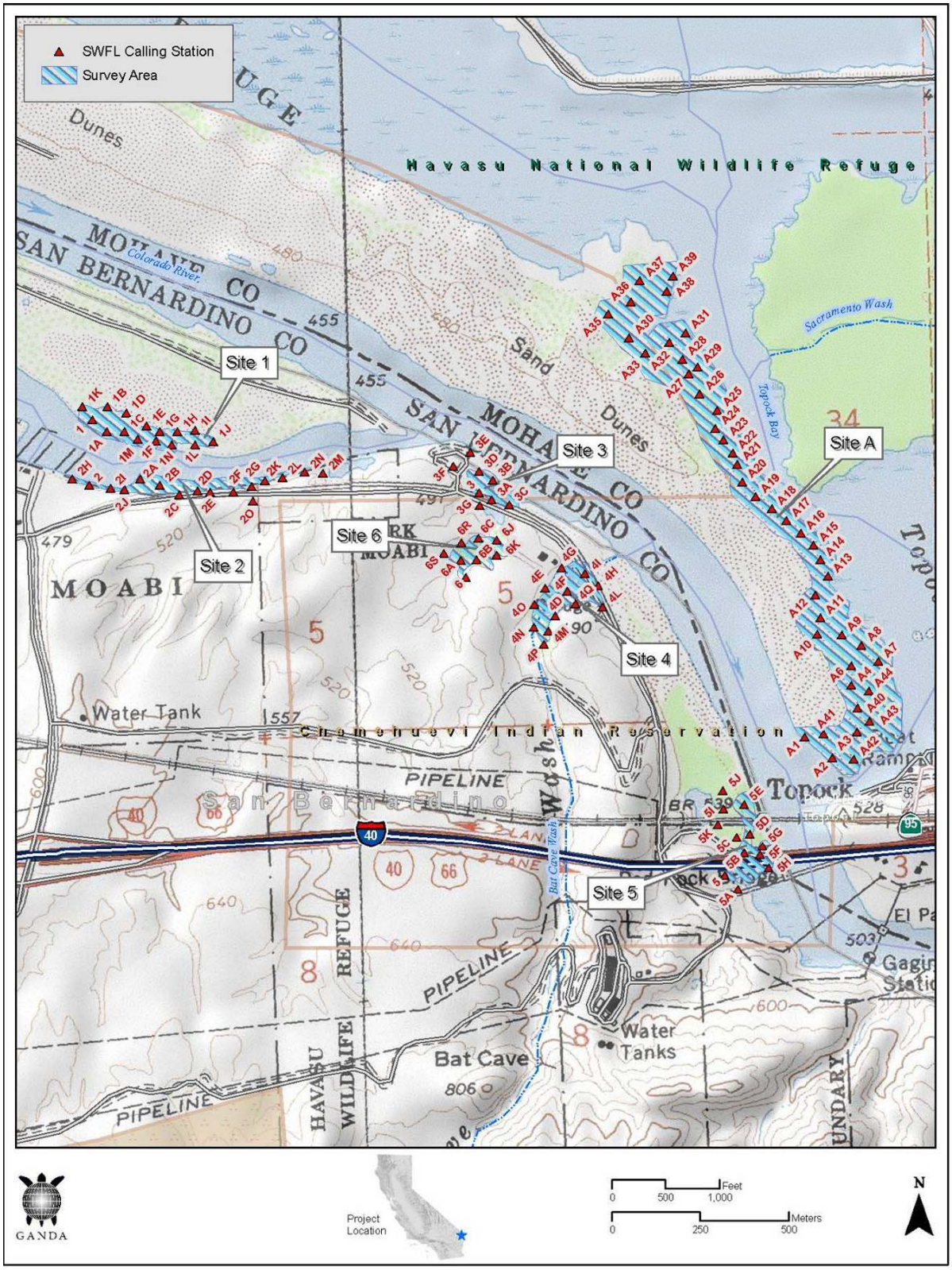
Under contract to CH2M HILL, Garcia and Associates (GANDA) conducted a protocol survey for the southwestern willow flycatcher (SWFL) (*Empidonax traillii extimus*) for Pacific Gas and Electric Company (PG&E) near the Topock Compressor Station, 15 miles southeast of Needles, California. The purpose of the survey was to determine the presence or absence of the federally- and State of California-threatened SWFL. A United States Fish and Wildlife Service (USFWS)-approved biologist conducted surveys following the survey protocol outlined in *A Southwestern Willow Flycatcher Natural History and Survey Protocol* (Sogge et al., 1997) and the changes outlined in the 2000 USFWS revision (USFWS, 2000). This report fulfills general project management Measure 26 of the programmatic biological assessment (PBA) (CH2M HILL, 2007). Measure 26 states:

> *Riparian areas surrounding the proposed action site 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 each year by a biologist permitted by the USFWS to carry out flycatcher surveys until the action has been completed and all facilities have been removed. Reports shall be provided to the biologists in the BLM Lake Havasu Field Office on an annual basis.*

2.0 Site Description

The survey area consisted of seven sites near the Topock Compressor Station. The sites were located along either side of the Colorado River. Six sites were in San Bernardino County, California, and one site was in Mohave County, Arizona. These seven sites were all located within the area of potential effect (APE) of the PBA. None of the survey sites are located within USFWS designated critical habitat for the SWFL (USFWS, 2005), in fact there is no critical habitat for this species within the APE. The largest site was in Arizona on the Havasu National Wildlife Refuge that is managed by the USFWS (Site A in Figure 2-1). Three of the California sites were on Bureau of Land Management land (Sites 3, 4 and 6 in Figure 2-1), two sites were in the Moabi Regional Park (Sites 1 and 2 in Figure 2-1), and one site was in the California portion of the Havasu National Wildlife Refuge (Site 5 in Figure 2-1). Overall, the survey sites total 80 acres and vary in elevation from 400 to 500 feet above sea level.

FIGURE 2-1
Survey Areas and Call Points



3.0 Vegetation, Habitat Quality, and Wildlife

The most abundant plant species in the survey area included salt cedar (*Tamarix ramosissima*), coyote willow (*Salix exigua*), catclaw acacia (*Acacia greggii*), arrowweed (*Pluchea sericea*), and palo verde (*Cercidium microphyllum*). Salt cedar was the predominant species throughout the survey area and often formed dense thickets that reach heights of over 8 feet. A complete list of the plant species observed in the survey area is included in Appendix A.

3.1 Habitat Quality

Overall, the survey area was of moderate habitat quality for SWFL. The Colorado River provided standing surface water throughout the breeding season and a suitable vegetation composition; however, habitat fragmentation and human activity detract from the overall habitat quality. The California sites (Sites 1-6 in Figure 2-1) were small and geographically isolated by the surrounding desert, Park Moabi Drive, and the Colorado River. Additionally the California sites' proximity to Park Moabi, Interstate 40, the Burlington Northern Santa Fe Railway, and the PG&E Topock Compressor Station also result in a high level of human activity. The Arizona site (Site A in Figure 2-1) was located on a large peninsula and was bordered by contiguous riparian habitat and a bulrush-dominated marsh. However, this site was also adjacent to the Topock Marina, a community that includes a dozen houses and several businesses. Watercraft are frequently observed on both the Colorado River and in the Topock Marsh and are likely a contributing factor to the increase in human activity at this location. Photographs of each survey site are presented in Appendix B.

3.2 Wildlife

A variety of wildlife species were observed during the SWFL survey. The diversity and quantity of wildlife species encountered are influenced by the wildlife's proximity to the creosote-dominated desert and the Topock Marsh, a large wetland with abundant wildlife and bird species. The most commonly observed non-avian vertebrate species were beaver (*Castor canadensis*), black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), bullfrog (*Rana catesbeiana*), and western side-blotched lizard (*Uta stansburiana*). The most commonly observed avian species were great-tailed grackle (*Quiscalus mexicanus*), white-winged dove (*Zenaida asiatica*), lesser nighthawk (*Chordeiles acutipennis*), and black-tailed gnatcatcher (*Polioptila melanura*). Complete lists of the avian and non-avian vertebrate species encountered are included in Appendix A.

Two significant observations were the detections of both Arizona Bell's vireo (*Vireo bellii arizonae*) and brown-headed cowbird (*Molothrus ater*).

Arizona Bell's vireos were detected during each survey visit in the Arizona portion of the survey area (Site A in Figure 2-1). Although this species has no Arizona State or federal protective status, the species is listed as endangered in California. This is the third consecutive year that Arizona Bell's vireos were detected and the first year that the

detection occurred during every visit. Arizona Bell's vireos were detected from the northern end to the middle portion of the survey area (call points A39-A23 in Figure 2-1).

Brown-headed cowbirds were observed at four sites in the survey area. In 2005 and 2006, the birds were observed at all seven survey sites. Brown-headed cowbirds are known to parasitize SWFL and other songbirds' nests; their presence may explain the absence of nesting SWFL in the area.

4.0 Survey Methods and Results

4.1 Methods

GANDA wildlife biologist Jeff Steinman (USFWS permit #TE-085026, Arizona Game and Fish Department Permit #SP-716513, and California Fish and Wildlife Permit SC-007801) conducted the SWFL surveys, following the protocol outlined by Sogge et al. (1997) and protocol revision prepared by the USFWS (2000). This protocol revision for project-related surveys recommends that five surveys be conducted during three survey periods, with three of the surveys occurring during the last survey period. These three periods are from May 15 to 31, June 1 to 21, and June 22 to July 17. Mr. Steinman conducted the SWFL surveys from May 15 to 18, June 5 to 8, June 22 to 25, June 27 to 30, and July 10 to 13. All surveys were conducted between 4:30 a.m. and 10:00 a.m. Survey forms are included in Appendix C.

The 2007 survey area was the same as surveyed in the 2006 and similar to the area surveyed in 2005, with the exception of Call Points 2 and 2H in the northern portion of Site 2. These call points were eliminated in 2006 due to the removal of vegetation in the area presumably by Park Moabi staff between the 2005 and 2006 surveys (Figure 2-1).

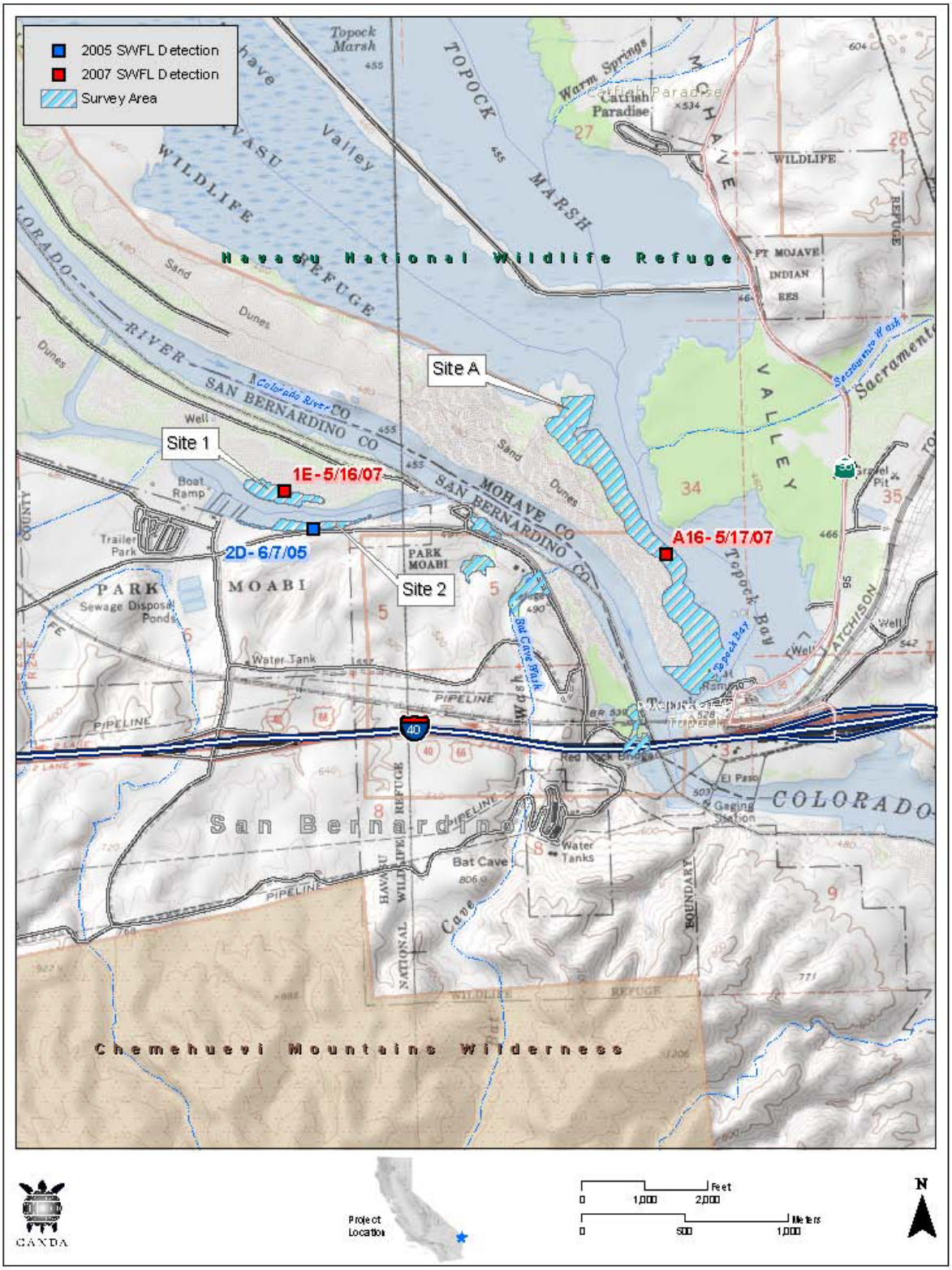
The survey method consisted of using a portable tape player to broadcast SWFL calls from call points established during the 2005 survey. Call points were originally established in the field using aerial photographs, topographic maps, and global positioning system units to ensure that the same call points were used each year. Call points were placed between 30 and 50 meters apart, depending on the quality of the habitat, thickness of vegetation, and accessibility. The call points were located in 2007 using a global positioning system unit containing their Universal Transverse Mercator (UTM) coordinates. See Appendix D for a complete list of call points and UTM coordinates and Figure 2-1 for a map of all the call points.

At the start of each survey site, Mr. Steinman spent 10 minutes listening for the presence of any singing male flycatchers. After this initial listening period, SWFL "fitz-bew" calls were broadcasted at each call point for a 30-second period that was immediately followed by a 60-second listening period. The start time of each site and the order in which the call points were surveyed were intentionally varied from one visit to the next to reduce bias.

4.2 Results

Two potential SWFLs were observed during the first survey period. Both detections were based solely on the visual characteristics of individual birds. No vocalizations were heard, including the "fitz-bew" call, which is required for a confirmed detection. One potential SWFL was observed on May 16 in Site 1, Call Point 1E along the California side of the Colorado River, and a second potential SWFL was observed on May 17 in Site A, Call Point A16 along the Arizona side of the Colorado River (Figure 4-1). The survey of the same sites on subsequent visits resulted in no detection of SWFL. There were no SWFL detections in the other survey sites.

FIGURE 4-1
Potential Southwestern Willow Flycatcher Detections



5.0 Conclusions

Although no SWFLs were confirmed to be occupying the survey area, there were two potential detections during the 2007 survey. These detections were most likely of transients due to there being no vocalizations and no subsequent detections during any of the other survey periods. No SWFL were detected in 2006 but there was one potential detection at Call Point 2D in 2005, less then 100 meters from the 2007 detection at Call Point 1E and almost directly across an inlet (Figure 4-1). Although a single "whitt" call was heard in 2005, the "fitz-bew" call required for a confirmed detection was not heard during any of the detections. If any of the detections in 2005 or 2007 were SWFL, they were most likely transient birds since there were no subsequent detections during any of the other survey periods. It should also be noted that there is no critical SWFL habitat within the APE, which includes all seven of the survey sites. However, the known presence of nearby populations, combined with the suitability of the habitat and the detection of potential transients, increases the likelihood that an increase in breeding success and survivorship in the nearby populations may result in future use of the survey area.

6.0 References

CH2M HILL. 2007. *Programmatic Biological Assessment for Pacific Gas and Electric Topock Compressor Station Remedial and Investigative Actions*. January.

Sogge, M.K., R.M. Marshall, S.J. Sferra, and T.J. Tibbits. 1997. *A Southwestern Willow Flycatcher Natural History Summary and Survey Protocol.* National Park Service Cooperative Studies Unit. USGS Colorado Plateau Research Station—Northern Arizona University, Flagstaff, Arizona.

United States Fish and Wildlife Service (USFWS). 2000. *Southwestern Willow Flycatcher Protocol Revision 2000*. July 11.

United States Fish and Wildlife Service (USFWS). 2005. Federal Register, Department of the Interior, Fish and Wildlife Service. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Southwestern Willow Flycatcher; Final Rule. 50 CFR Part 17. RIN 1018-AT88. October 19.

Appendix A
Photograph Log

Site 1

Site 2

Site 3

Site 4

Site 5

Site 6

Site A

Appendix B
Incidental Plant and Vertebrate Species

Table 1. Incidental Plant Species.

Common Name	Latin Name
Arrowweed	*Pluchea sericea*
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* var *cylindraceus*
Beavertail	*Opuntia basilaris* var. *basilaris*
Fish-Hook Cactus	*Mammillaria dioica*
Russian Thistle	*Salsola tragus*
Catclaw Acacia	*Acacia greggii*
Palo Verde	*Cercidium microphyllum*
Honey Mesquite	*Prosopis glandulosa* var *torreyana*
Desert-Lavender	*Hyptis emoryi*
Anderson Wolfberry	*Lycium andersonii*
Cooper's Wolfberry	*Lycium cooperi*
Desert Tobacco	*Nicotiana obtusifolia*
Thick-Leaf Ground Cherry	*Physalis crassifolia*
Salt Cedar	*Tamarix ramosissima*
Cottonwood	*Populus deltoides*
Coyote Willow	*Salix exigua*
Gooding's Willow	*Salix gooddingii*
Cattail	*Typha angustifolia*
Ironwood	*Olneya tesota*

Table 2. Incidental Mammals and Reptiles.

Common Name	Scientific Name
Burro	*Equus asinus*
Kit Fox	*Vulpes macrotis*
Coyote	*Canis latrans*
Desert Cottontail	*Sylvilagus audubonii*
Black-tailed Jackrabbit	*Lepus californicus*
Beaver	*Castor canadensis*
Desert Iguana	*Dipsosaurus dorsalis*
Side-blotched Lizard	*Uta stanburiana*
Western Whiptail	*Cnemidophorus tigris*

Table 3. Incidental Bird Species.

Common Names	Scientific Names
Canada Goose	*Branta canadensis*
Mallard	*Anas platyrhynchos*
Ruddy Duck	*Oxyura jamaicensis*
Gambel's Quail	*Callipepla gambelii*
Clark's Grebe	*Aechmophorus clarkia*
Double-Crested Cormorant	*Phalacrocorax auritus*
Least Bittern	*Ixobrychus exilis*
Great Blue Heron	*Ardea herodias*
Green Heron	*Butorides virescens*
Great Egret	*Ardea alba*
White-Faced Ibis	*Plegadis chihi*
Turkey Vulture	*Cathartes aura*
Osprey	*Pandion haliaetus*
American Kestrel	*Falco sparverius*
American Coot	*Fulica americana*
Killdeer	*Charadrius vociferous*
Caspian Tern	*Sterna caspia*
Rock Pigeon	*Columba livia*
Common-Ground Dove	*Columbina passerina*
White-Winged Dove	*Zenaida asiatica*
Mourning Dove	*Zenaida macroura*
Inca Dove	*Columbina inca*
Greater Roadrunner	*Geococcyx californianus*
Lesser Nighthawk	*Chordeiles acutipennis*
Black-Chinned Hummingbird	*Archilochus alexandri*
Anna's Hummingbird	*Calypte anna*
Ladder-Backed Woodpecker	*Picoides scalaris*
Black Phoebe	*Sayornis nigricans*
Say's Phoebe	*Sayornis saya*
Ash-Throated Flycatcher	*Myiarchus cinerascens*
Western Kingbird	*Tyrannus verticalis*
Loggerhead Shrike	*Lanius ludovicianus*
Bell's Vireo	*Vireo bellii*
Common Raven	*Corvus corax*
Northern Rough-Winged Swallow	*Stelgidopteryx serripennis*
Cliff Swallow	*Petrochelidon pyrrhonota*
Verdin	*Auriparus flaviceps*
Bewick's Wren	*Thryomanes bewickii*
Marsh Wren	*Cistothorus palustris*
Black-Tailed Gnatcatcher	*Polioptila melanura*
Crissal Thrasher	*Toxostoma crissale*
European Starling	*Sturnus vulgaris*
Wilson’s Warbler	*Wilsonia pusilla*
Orange-Crowned Warbler	*Vermivora celata*
Lucy's Warbler	*Vermivora luciae*
Yellow Warbler	*Dendroica petechia*
Common Yellowthroat	*Geothlypis trichas*
Yellow-Breasted Chat	*Icteria virens*
Bushtit	*Psaltriparus minimus*

Common Names	Scientific Names
Summer Tanager	*Piranga rubra*
Abert's Towhee	*Pipilo aberti*
Song Sparrow	*Melospiza melodia*
Rose Breasted Grosbeak	*Pheucticus ludovicianus*
Blue Grosbeak	*Passerina caerulea*
Lazuli Bunting	*Passerina amoena*
Red-Winged Blackbird	*Agelaius phoeniceus*
Yellow-Headed Blackbird	*Xanthocephalus xanthocephalus*
Great-Tailed Grackle	*Quiscalus mexicanus*
Brown-Headed Cowbird	*Molothrus ater*
Purple Finch	*Carpodacus purpureus*
Lesser Goldfinch	*Carduelis psaltria*

Appendix C
Survey Forms

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

Reporting Individual Jeff Steinman Phone (415) 640-8769
Affiliation Garcia and Associates E-mail garciaandassociates.com
Site Name Topock Compressor Station CA-1 Date Report Completed 8/15

Did you verify that this site name is consistent with that used in previous years? (Yes) No (circle one)
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) No If no, summarize in comments below.
Did you survey the same general area during each visit to this site this year? (Yes) No If no, summarize in comments below.

Management Authority for Survey Area (circle one): Federal (Municipal/County) State Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) Mohave Regional Park

Length of area surveyed: 1500 ft (specify units, e.g., miles = mi, kilometers = km, meters = m)

Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

☐ Native broadleaf plants (entirely or almost entirely, includes high-elevation willow)

☐ Mixed native and exotic plants (mostly native)

☐ Mixed native and exotic plants (mostly exotic)

☒ Exotic/introduced plants (entirely or almost entirely)

Identify the 2-3 predominant tree/shrub species: Tamarix ramosissima/Cercidium microphyllum

Average height of canopy (Do not put a range): 10 ft (specify units)

Was surface water or saturated soil present at or adjacent to site? (Yes) No (circle one)
Distance from the site to surface water or saturated soil: 0 (specify units)

Did hydrological conditions change significantly among visits (did the site flood or dry out)? Yes / (No) (circle one)
If yes, describe in comments section below.

Remember to attach a copy of a USGS quad/topographical map (REQUIRED) of the survey area, outlining the survey site and location of WIFL detections. Also include a sketch or aerial photograph showing details of site location, patch shape, survey route in relation to patch, and location of any willow flycatchers or willow flycatcher nests detected. Such sketches or photographs are welcomed, but DO NOT substitute for the required USGS quad map. Please include photos of the interior of the patch, exterior of the patch, and overall site and describe any unique habitat features.

Comments (attach additional sheets if necessary)

WIFL Detection Locations: Possible 1 WFL detected at call point 1E

Date Detected	N UTM	E UTM	Date Detected	N UTM	E UTM
5/16	38 45 766	11 07 28 261			

Willow Flycatcher Survey and Detection Form (revised April, 2004)

Site Name Topock Compressor Station CA-1 State CA County San Bernardino
USGS Quad Name Whale Mountain Elevation 440 feet / meters (circle one)

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

Site Coordinates: Start: N 38 45 821 E 11 07 28 081 UTM Datum NAD83 (NAD27 preferred)
Stop: N 38 45 722 E 11 07 28 449 UTM Zone 11

***** 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	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign, If Yes, Describe Y or N	Comments about this survey (e.g., bird behavior, evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
1 Jeff Steinman	Date 5/16 Start 0530 Stop 0657 Total hrs 1:27	1	Ø	Ø	N	N	N	
2	Date 6/7 Start 0524 Stop 0645 Total hrs 1:21	Ø	Ø	Ø	N	N	N	
3	Date 6/23 Start 0613 Stop 0701 Total hrs 0:49	Ø	Ø	Ø	N	Y	N	
4	Date 6/28 Start 0733 Stop 0819 Total hrs 0:46	Ø	Ø	Ø	N	N	N	
5	Date 7/12 Start 0650 Stop 0651 Total hrs 1:01	Ø	Ø	Ø	N	N	N	

Overall Site Summary (Total **resident** WIFLs only)	Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes No
Total survey hrs 5:24	1	Ø	Ø	N	If yes, report color combination(s) in the comments section on back of form

Reporting Individual Jeff Steinman Date Report Completed 8/15
US Fish and Wildlife Service Permit #TE-085026 AZ Game and Fish Department (or other state) Permit # SC-007501

Submit original form by August 1st. Retain a copy for your records.

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

Reporting Individual Jeff Steinman Phone # (415) 642-8969
Affiliation Garcia and Associates E-mail jsteinman@garciaandassociates.com
Site Name Topock Compressor Station CA 2 Date Report Completed 8/15

Did you verify that this site name is consistent with that used in previous years? (Yes) No (circle one)
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) No If no, summarize in comments below.
Did you survey the same general area during each visit to this site this year? (Yes) No If no, summarize in comments below.

Management Authority for Survey Area (circle one): Federal (Municipal/County) State Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) Moab Regional Park

Length of area surveyed: 20000 M (specify units, e.g., miles = mi, kilometers = km, meters = m)

Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

- ☐ Native broadleaf plants (entirely or almost entirely, includes high-elevation willow)
- ☐ Mixed native and exotic plants (mostly native)
- ☐ Mixed native and exotic plants (mostly exotic)
- ☒ Exotic/introduced plants (entirely or almost entirely)

Identify the 2-3 predominant tree/shrub species: Tamarix ramosissima / Acacia greggii

Average height of canopy (Do not put a range): 15 ft. (specify units)

Was surface water or saturated soil present at or adjacent to site? (Yes) No (circle one)
Distance from the site to surface water or saturated soil: 4 (specify units)

Did hydrological conditions change significantly among visits (did the site flood or dry out)? Yes (No) (circle one)
If yes, describe in comments section below.

Remember to attach a copy of a USGS quad/topographical map (REQUIRED) of the survey area, outlining the survey site and location of WIFL detections. Also include a sketch or aerial photograph showing details of site location, patch shape, survey route in relation to patch, and location of any willow flycatchers or willow flycatcher nests detected. Such sketches or photographs are welcomed, but DO NOT substitute for the required USGS quad map. Please include photos of the interior of the patch, exterior of the patch, and overall site and describe any unique habitat features.

Comments (attach additional sheets if necessary)

WIFL Detection Locations:

Date Detected	N UTM	E UTM	Date Detected	N UTM	E UTM

Willow Flycatcher Survey and Detection Form (revised April, 2004)

Site Name Topock Compressor Station CA 2 State CA County San Bernadino
USGS Quad Name ~~Topock~~ Whale Mountain Elevation 480 (feet) meters (circle one)

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

Site Coordinates: Start: N 38 45 617 E 11 07 28 053 UTM Datum NAD 83 (NAD27 preferred)
Stop: N 38 45 638 E 11 07 28 760 UTM Zone 11

***** 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	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign, If Yes, Describe Y or N	Comments about this survey (e.g., bird behavior, evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
1 Jeff Steinman	Date 5/16 Start 0714 Stop 0825 Total hrs 1:11	0	0	0	N	N	N	
2	Date 6/8 Start 0607 Stop 0701 Total hrs 0:54	0	0	0	N	N	N	
3	Date 6/23 Start 0804 Stop 0844 Total hrs 0:40	0	0	0	N	N	N	
4	Date 6/28 Start 0823 Stop 0903 Total hrs 0:40	0	0	0	N	N	N	
5	Date 7/12 Start 0659 Stop 0739 Total hrs 0:40	0	0	0	N	N	N	

Overall Site Summary (Total **resident** WIFLs only) Total survey hrs 4:05	Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes No If yes, report color combination(s) in the comments section on back of form
	0	0	0	N	

Reporting Individual Jeff Steinman Date Report Completed 8/15
US Fish and Wildlife Service Permit # TE-085026 AZ Game and Fish Department (or other state) Permit # SC-007801

Submit original form by August 1st. Retain a copy for your records.

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

Reporting Individual Jeff Steinman Phone # (415) 642-8969
Affiliation Garcia and Associates E-mail jsteinman@garciaandassociates.com
Site Name Topock Compressor Station CA 3 Date Report Completed 8/15

Did you verify that this site name is consistent with that used in previous years? (Yes) / No (circle one)
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) / No If no, summarize in comments below.
Did you survey the same general area during each visit to this site this year? (Yes) / No If no, summarize in comments below.

Management Authority for Survey Area (circle one): (Federal) Municipal/County State Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) BLM

Length of area surveyed: 500 ft (specify units, e.g., miles = mi, kilometers = km, meters = m)

Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

☐ Native broadleaf plants (entirely or almost entirely, includes high-elevation willow)

☐ Mixed native and exotic plants (mostly native)

☒ Mixed native and exotic plants (mostly exotic)

☐ Exotic/introduced plants (entirely or almost entirely)

Identify the 2-3 predominant tree/shrub species: Tamarix ramosissima / Acacia greggii

Average height of canopy (Do not put a range): 10 ft (specify units)

Was surface water or saturated soil present at or adjacent to site? (Yes) / No (circle one)
Distance from the site to surface water or saturated soil: 0 (specify units)

Did hydrological conditions change significantly among visits (did the site flood or dry out)? Yes / No (circle one)
If yes, describe in comments section below.

Remember to attach a copy of a USGS quad/topographical map (REQUIRED) of the survey area, outlining the survey site and location of WIFL detections. Also include a sketch or aerial photograph showing details of site location, patch shape, survey route in relation to patch, and location of any willow flycatchers or willow flycatcher nests detected. Such sketches or photographs are welcomed, but DO NOT substitute for the required USGS quad map. Please include photos of the interior of the patch, exterior of the patch, and overall site and describe any unique habitat features.

Comments (attach additional sheets if necessary)

WIFL Detection Locations:

Date Detected	N UTM	E UTM	Date Detected	N UTM	E UTM

Willow Flycatcher Survey and Detection Form (revised April, 2004)

Site Name Topock Compressor Station CA-3 State CA County San Bernardino
USGS Quad Name Topock Elevation 440 (feet) meters (circle one)

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

Site Coordinates: Start: N 38 45 653 E 11 07 27 128 UTM Datum NAD83 (NAD27 preferred)
Stop: N 38 45 544 E 11 07 29 285 UTM Zone 11

***** 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	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign, If Yes, Describe Y or N	Comments about this survey (e.g., bird behavior, evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
1 Jeff Stemman	Date 5/16 Start 0830 Stop 0903 Total hrs 0:33	0	0	0	N	N	N	
2	Date 6/8 Start 0705 Stop 0745 Total hrs 0:40	0	0	0	N	Y	N	
3	Date 6/22 Start 0541 Stop 0631 Total hrs 0:50	0	0	0	N	Y	N	
4	Date 6/27 Start 0657 Stop 0734 Total hrs 0:37	0	0	0	N	N	N	
5	Date 7/12 Start 0741 Stop 0816 Total hrs 0:35	0	0	0	N	N	N	

Overall Site Summary (Total **resident** WIFLs only)	Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes No
Total survey hrs 3:15	0	0	0	N	If yes, report color combination(s) in the comments section on back of form

Reporting Individual Jeff Stemman Date Report Completed 8/15
US Fish and Wildlife Service Permit # TE-085026 AZ Game and Fish Department (or other state) Permit # SC-007801

Submit original form by August 1st. Retain a copy for your records.

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

Reporting Individual Jeff Steinman Phone # (415) 642-8969
Affiliation Garcia and Associates E-mail jsteinman@garciaassociates.com
Site Name Topock Compressor Station CA-4 Date Report Completed 8/15

Did you verify that this site name is consistent with that used in previous years? (Yes) / No (circle one)
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) / No If no, summarize in comments below.
Did you survey the same general area during each visit to this site this year? (Yes) / No If no, summarize in comments below.

Management Authority for Survey Area (circle one): (Federal) Municipal/County State Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) BLM

Length of area surveyed: 800 ft. (specify units, e.g., miles = mi, kilometers = km, meters = m)

Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

☐ Native broadleaf plants (entirely or almost entirely, includes high-elevation willow)

☐ Mixed native and exotic plants (mostly native)

☒ Mixed native and exotic plants (mostly exotic)

☐ Exotic/introduced plants (entirely or almost entirely)

Identify the 2-3 predominant tree/shrub species: Tamarix ramosissima / Acacia greggii

Average height of canopy (Do not put a range): 15 ft. (specify units)

Was surface water or saturated soil present at or adjacent to site? (Yes) / No (circle one)
Distance from the site to surface water or saturated soil: ø (specify units)

Did hydrological conditions change significantly among visits (did the site flood or dry out)? Yes / (No) (circle one)
If yes, describe in comments section below.

Remember to attach a copy of a USGS quad/topographical map (REQUIRED) of the survey area, outlining the survey site and location of WIFL detections. Also include a sketch or aerial photograph showing details of site location, patch shape, survey route in relation to patch, and location of any willow flycatchers or willow flycatcher nests detected. Such sketches or photographs are welcomed, but DO NOT substitute for the required USGS quad map. Please include photos of the interior of the patch, exterior of the patch, and overall site and describe any unique habitat features.

Comments (attach additional sheets if necessary)

WIFL Detection Locations:

Date Detected	N UTM	E UTM	Date Detected	N UTM	E UTM

Willow Flycatcher Survey and Detection Form (revised April, 2004)

Site Name Tapack Compressor Station CA-4 State CA County San Bernadino
USGS Quad Name Tapack Elevation 520 (feet) meters (circle one)

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

Site Coordinates: Start: N 38 45 150 E 11 07 29 384 UTM Datum WGS 83 (NAD27 preferred)
Stop: N 38 45 317 E 11 07 29 537 UTM Zone 11

*** 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	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign, If Yes, Describe Y or N	Comments about this survey (e.g., bird behavior, evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
1 Jeff Steinman	Date 5/15 Start 0705 Stop 0759 Total hrs 0:54	Ø	Ø	Ø	N	N	N	
2	Date 6/7 Start 0814 Stop 0915 Total hrs 1:01	Ø	Ø	Ø	N	N	N	
3	Date 6/22 Start 0746 Stop 0846 Total hrs 1:00	Ø	Ø	Ø	N	N	N	
4	Date 6/27 Start 0737 Stop 0838 Total hrs 1:01	Ø	Ø	Ø	N	N	N	
5	Date 7/13 Start 0652 Stop 0728 Total hrs 0:36	Ø	Ø	Ø	N	N	N	
Overall Site Summary (Total resident WIFLs only) Total survey hrs 4:32		Adults Ø	Pairs Ø	Territories Ø	Nests N	Were any WIFLs color-banded? Yes No If yes, report color combination(s) in the comments section on back of form		

Reporting Individual Jeff Steinman Date Report Completed 8/15
US Fish and Wildlife Service Permit #TE-085026 AZ Game and Fish Department (or other state) Permit #SC-007801

Submit original form by August 1st. Retain a copy for your records.

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

Reporting Individual Jeff Steinman Phone #(415) 642-8969
Affiliation Garcia and Associates E-mail jsteinman@garcia-and-associates.com
Site Name Tejon Compressor Station CA5 Date Report Completed 8/15

Did you verify that this site name is consistent with that used in previous years? (Yes) No (circle one)
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) No If no, summarize in comments below.
Did you survey the same general area during each visit to this site this year? (Yes) No If no, summarize in comments below.

Management Authority for Survey Area (circle one): (Federal) Municipal/County State Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) USFWS Havasu National Wildlife Refuge

Length of area surveyed: 900 ft (specify units, e.g., miles = mi, kilometers = km, meters = m)

Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

☐ Native broadleaf plants (entirely or almost entirely, includes high-elevation willow)

☐ Mixed native and exotic plants (mostly native)

☐ Mixed native and exotic plants (mostly exotic)

☒ Exotic/introduced plants (entirely or almost entirely)

Identify the 2-3 predominant tree/shrub species: Tamarix ramosissima / Acacia greggii

Average height of canopy (Do not put a range): 10 ft. (specify units)

Was surface water or saturated soil present at or adjacent to site? (Yes) No (circle one)
Distance from the site to surface water or saturated soil: 0 (specify units)

Did hydrological conditions change significantly among visits (did the site flood or dry out)? Yes (No) (circle one)
If yes, describe in comments section below.

Remember to attach a copy of a USGS quad/topographical map (REQUIRED) of the survey area, outlining the survey site and location of WIFL detections. Also include a sketch or aerial photograph showing details of site location, patch shape, survey route in relation to patch, and location of any willow flycatchers or willow flycatcher nests detected. Such sketches or photographs are welcomed, but DO NOT substitute for the required USGS quad map. Please include photos of the interior of the patch, exterior of the patch, and overall site and describe any unique habitat features.

Comments (attach additional sheets if necessary)

WIFL Detection Locations:

Date Detected	N UTM	E UTM	Date Detected	N UTM	E UTM

Willow Flycatcher Survey and Detection Form (revised April, 2004)

Site Name Topock Compressor Station CA5 State CA County San Bernadino
USGS Quad Name Topock Elevation 500 (feet) meters (circle one)

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

Site Coordinates: Start: N 38 44 738 E 110729 889 UTM Datum NAD83 (NAD27 preferred)
Stop: N 38 44 458 E 11 07 29 930 UTM Zone 11

***** 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	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign, If Yes, Describe Y or N	Comments about this survey (e.g., bird behavior, evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
1 Jeff Stenman	Date 5/15 Start 0556 Stop 0701 Total hrs 1:05	Ø	Ø	Ø	N	N	N	
2	Date 6/7 Start 0655 Stop 0752 Total hrs 0:57	Ø	Ø	Ø	N	N	N	
3	Date 6/23 Start 0712 Stop 0800 Total hrs 0:48	Ø	Ø	Ø	N	N	N	
4	Date 6/28 Start 0601 Stop 0720 Total hrs 1:19	Ø	Ø	Ø	N	N	N	
5	Date 7/13 Start 0601 Stop 0648 Total hrs 0:47	Ø	Ø	Ø	N	N	N	

Overall Site Summary (Total **resident** WIFLs only) Total survey hrs 4:56	Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes No If yes, report color combination(s) in the comments section on back of form
	Ø	Ø	Ø	Ø	

Reporting Individual Jeff Stenman Date Report Completed 8/18
US Fish and Wildlife Service Permit # TE-085026 AZ Game and Fish Department (or other state) Permit # SC-007801

Submit original form by August 1st. Retain a copy for your records.

Willow Flycatcher Survey and Detection Form (revised April, 2004)

Site Name Topock Compressor Station CA6 State CA County San Bernadino
USGS Quad Name Topock Elevation 480 (feet) / meters (circle one)

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

Site Coordinates: Start: N 38 45 406 E 11 07 29 101 UTM Datum NAD83 (NAD27 preferred)
Stop: N 38 45 444 E 11 07 29 250 UTM Zone 11

***** 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	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign, If Yes, Describe Y or N	Comments about this survey (e.g., bird behavior, evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
1 Jeff Steinman	Date 5/15 Start 0825 Stop 0918 Total hrs 0:53	0	0	0	N	N	N	
2	Date 6/8 Start 0748 Stop 0831 Total hrs 0:43	0	0	0	N	N	N	
3	Date 6/22 Start 0641 Stop 0725 Total hrs 0:44	0	0	0	N	Y	N	
4	Date 6/27 Start 0605 Stop 0654 Total hrs 0:49	0	0	0	N	N	N	
5	Date 7/13 Start 0730 Stop 0815 Total hrs 0:45	0	0	0	N	N	N	

Overall Site Summary (Total **resident** WIFLs only) Total survey hrs 3:54	Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes No If yes, report color combination(s) in the comments section on back of form
	0	0	0	N	

Reporting Individual Jeff Steinman Date Report Completed 8/15
US Fish and Wildlife Service Permit # TE-085086 AZ Game and Fish Department (or other state) Permit # SC-007801

Submit original form by August 1st. Retain a copy for your records.

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

Reporting Individual Jeff Steinman Phone #(415) 642-8969
Affiliation Garcia and Associates E-mail jsteinman@garciaandassociates.com
Site Name PG&E Topock Compressor Station CA 6 Date Report Completed 8/15

Did you verify that this site name is consistent with that used in previous years? (Yes) / No (circle one)
If name is different, what name(s) was used in the past? none
If site was surveyed last year, did you survey the same general area this year? (Yes) / No If no, summarize in comments below.
Did you survey the same general area during each visit to this site this year? (Yes) No If no, summarize in comments below.

Management Authority for Survey Area (circle one): (Federal) Municipal/County State Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) BLM

Length of area surveyed: 500 ft. (specify units, e.g., miles = mi, kilometers = km, meters = m)

Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

- ☐ Native broadleaf plants (entirely or almost entirely, includes high-elevation willow)
- ☐ Mixed native and exotic plants (mostly native)
- ☒ Mixed native and exotic plants (mostly exotic)
- ☐ Exotic/introduced plants (entirely or almost entirely)

Identify the 2-3 predominant tree/shrub species: Tamarix ramosissima, Acacia greggii, Cercidium microphyllum

Average height of canopy (Do not put a range): 15 ft (specify units)

Was surface water or saturated soil present at or adjacent to site? (Yes) No (circle one)
Distance from the site to surface water or saturated soil: 20 ft (specify units)

Did hydrological conditions change significantly among visits (did the site flood or dry out)? Yes (No) (circle one)
If yes, describe in comments section below.

Remember to attach a copy of a USGS quad/topographical map (REQUIRED) of the survey area, outlining the survey site and location of WIFL detections. Also include a sketch or aerial photograph showing details of site location, patch shape, survey route in relation to patch, and location of any willow flycatchers or willow flycatcher nests detected. Such sketches or photographs are welcomed, but DO NOT substitute for the required USGS quad map. Please include photos of the interior of the patch, exterior of the patch, and overall site and describe any unique habitat features.

Comments (attach additional sheets if necessary)

WIFL Detection Locations:

Date Detected	N UTM	E UTM	Date Detected	N UTM	E UTM

Willow Flycatcher Survey and Detection Form (revised April, 2004)

Site Name Topock Compressor Station AZ1 State AZ County Mohave
USGS Quad Name Topock Elevation 440 (feet) meters (circle one)

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

Site Coordinates: Start: N 38 46 178 E 11 07 29 655 UTM Datum NAD83 (NAD27 preferred)
Stop: N 38 44 828 E 11 07 30 259 UTM Zone 11

*** 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	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign, If Yes, Describe Y or N	Comments about this survey (e.g., bird behavior, evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
1 Jeff Steinman	Date 5/17 5/18 Start 0601-0859 Stop 0605-0844 Total hrs 5:57	5/17 1 5/18 0	Ø 0	Ø 0	N N	N	N	A single possible SWFL was seen but not heard on 5/17. A peregrine Falcon was also seen
2	Date 6/5 6/6 Start 0551-0902 Stop 0525-0844 Total hrs 6:50	Ø	Ø	Ø	N	N	N	
3	Date 6/24 6/25 Start 0541-0901 Stop 0546-0841 Total hrs 6:15	Ø	Ø	Ø	N	Y	N	
4	Date 6/29 6/30 Start 0609-0914 Stop 0604-0834 Total hrs 5:35	Ø	Ø	Ø	N	Y	N	
5	Date 7/10 7/11 Start 0531-0905 Stop 0551-0844 Total hrs 6:27	Ø	Ø	Ø	N	Y	N	

Overall Site Summary (Total **resident** WIFLs only)	Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes No unknown
Total survey hrs	1	Ø	Ø	N	If yes, report color combination(s) in the comments section on back of form

Reporting Individual Jeff Steinman Date Report Completed 8/15
US Fish and Wildlife Service Permit # TE-085026 AZ Game and Fish Department (or other state) Permit # SC007781

Submit original form by August 1st. Retain a copy for your records.

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

Reporting Individual Jeff Steinman Phone #(415) 642-8769
Affiliation Garcia and Associates E-mail jsteinman@garciaand associates.com
Site Name Topock Compressor Station Az 1 Date Report Completed 8/15

Did you verify that this site name is consistent with that used in previous years? (Yes) / No (circle one)
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) No If no, summarize in comments below.
Did you survey the same general area during each visit to this site this year? (Yes) No If no, summarize in comments below.

Management Authority for Survey Area (circle one): Federal Municipal/County State Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) Havasu National Wildlife Refuge

Length of area surveyed: 3600 Ft (specify units, e.g., miles = mi, kilometers = km, meters = m)

Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

☐ Native broadleaf plants (entirely or almost entirely, includes high-elevation willow)

☐ Mixed native and exotic plants (mostly native)

☒ Mixed native and exotic plants (mostly exotic)

☐ Exotic/introduced plants (entirely or almost entirely)

Identify the 2-3 predominant tree/shrub species: Tamarix ramosissima, Acacia greggii

Average height of canopy (Do not put a range): 20 ft (specify units)

Was surface water or saturated soil present at or adjacent to site? (Yes) No (circle one)
Distance from the site to surface water or saturated soil: 0 (specify units)

Did hydrological conditions change significantly among visits (did the site flood or dry out)? Yes / (No) (circle one)
If yes, describe in comments section below.

Remember to attach a copy of a USGS quad/topographical map (REQUIRED) of the survey area, outlining the survey site and location of WIFL detections. Also include a sketch or aerial photograph showing details of site location, patch shape, survey route in relation to patch, and location of any willow flycatchers or willow flycatcher nests detected. Such sketches or photographs are welcomed, but DO NOT substitute for the required USGS quad map. Please include photos of the interior of the patch, exterior of the patch, and overall site and describe any unique habitat features.

Comments (attach additional sheets if necessary)

WIFL Detection Locations: Possible SWFL detection at call point A16

Date Detected	N UTM	E UTM	Date Detected	N UTM	E UTM
5/17	38 45 465	1107 20 109			

Appendix D
Call Points and UTM Coordinates

Table 1. Call Points and UTM Coordinates.

Call Point	Northing	Easting
Site 1		
1	34.7287023	114.5086978
1A	34.7283877	114.5082587
1B	34.7290362	114.5082202
1C	34.7283767	114.5077127
1D	34.7288573	114.5076507
1E	34.7285071	114.5070372
1F	34.7281293	114.5067438
1G	34.7283547	114.5066217
1H	34.7283437	114.5060757
1I	34.7283693	114.5055359
1J	34.7280777	114.5049927
1K	34.7290484	114.5089878
1L	34.7280077	114.5055517
1M	34.7281790	114.5073177
1N	34.7280152	114.5062765
Site 2		
2A	34.7271701	114.5072564
2B	34.7270027	114.5066627
2C	34.7267487	114.5060653
2D	34.7268256	114.5055053
2E	34.7267972	114.5051156
2F	34.7267690	114.5044044
2G	34.7269073	114.5038429
2I	34.7269448	114.5081916
2J	34.7269087	114.5077567
2K	34.7270438	114.5034344
2L	34.7271090	114.5028740
2M	34.7272046	114.5016267
2N	34.7272409	114.5021941
2O	34.7265482	114.5038114
Site 3		
3	34.7266066	114.4968334
3A	34.7264137	114.4964485
3B	34.7269123	114.4964092
3C	34.7262786	114.4959193
3D	34.7271437	114.4968306
3E	34.7276294	114.4970733
3F	34.7272984	114.4976113
3G	34.7262869	114.4968244
Site 4		
4D	34.7234366	114.4945918
4E	34.7241494	114.4948672
4F	34.7240427	114.4941947
4G	34.7246473	114.4943451
4H	34.7241802	114.4932324
4I	34.7244817	114.4936357
4L	34.7236327	114.4931157

Call Point	Northing	Easting
4M	34.7230606	114.4948162
4N	34.7231627	114.4952587
4O	34.7237292	114.4952113
4P	34.7227150	114.4949501
4Q	34.7237269	114.4939468
Site 5		
5	34.7167161	114.4895676
5A	34.7163575	114.4891762
5B	34.7172730	114.4889426
5C	34.7176950	114.4891746
5D	34.7177678	114.4887486
5E	34.7185247	114.4889027
5F	34.7172167	114.4884643
5G	34.7174399	114.4883834
5H	34.7168767	114.4881948
5I	34.7184326	114.4895547
5J	34.7188832	114.4895511
5K	34.7180249	114.4897361
Site 6		
6	34.7244710	114.4973025
6A	34.7249002	114.4974595
6B	34.7249037	114.4969708
6C	34.7254506	114.4968827
6J	34.7253937	114.4963377
6K	34.7250157	114.4963497
6R	34.7253507	114.4974186
6S	34.7250823	114.4979739
Site A		
A1	34.7201930	114.4869984
A10	34.7227959	114.4865362
A11	34.7232189	114.4864155
A12	34.7237988	114.4865631
A13	34.7242722	114.4861577
A14	34.7246916	114.4863712
A15	34.7250658	114.4865683
A16	34.7253807	114.4869605
A17	34.7257065	114.4873952
A18	34.7260185	114.4878299
A19	34.7263354	114.4883260
A2	34.7196456	114.4861564
A20	34.7267180	114.4887242
A21	34.7271551	114.4888669
A22	34.7274569	114.4889890
A23	34.7277959	114.4892613
A24	34.7280890	114.4895070
A25	34.7285576	114.4894346
A26	34.7289766	114.4899624
A27	34.7295078	114.4902939
A28	34.7298750	114.4904642
A29	34.7296709	114.4900060

Call Point	Northing	Easting
A3	34.7203015	114.4853867
A30	34.7304525	114.4920946
A31	34.7305431	114.4903565
A32	34.7303194	114.4908694
A33	34.7300530	114.4916106
A35	34.7310743	114.4927285
A36	34.7313701	114.4920116
A37	34.7319069	114.4917183
A38	34.7316184	114.4909052
A39	34.7320004	114.4906932
A4	34.7214798	114.4855149
A40	34.7209055	114.4853451
A41	34.7202607	114.4864104
A42	34.7196133	114.4854915
A43	34.7205603	114.4849893
A44	34.7213290	114.4849859
A6	34.7219756	114.4855115
A7	34.7220680	114.4846749
A8	34.7224913	114.4851773
A9	34.7227674	114.4857807