Appendix A

Rare Plant Survey Report

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1.0 INTRODUCTION

This report presents the results of the 2019 and 2022 rare plant surveys conducted by HELIX Environmental Planning, Inc. (HELIX) for the Cottonwood Sand Mine Project (project) located in the unincorporated communities of Rancho San Diego and Jamul in eastern San Diego County, California. This letter describes the survey methods and results.

2.0 PROJECT LOCATION

The approximately 280-acre project site (site) is located in the unincorporated community of Rancho San Diego in eastern San Diego County, California (Figure 1, *Regional Location*). It is depicted within unsectioned lands of Township 16 South, Ranges 1 West and 1 East of the Jamul Mountains and El Cajon, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 2, *USGS Topography*). The site lies north of State Route (SR) 94 and east of SR 54 within the Cottonwood Golf Club. More specifically, the site occurs southeast of Willow Glen Drive, north of Jamul Drive, east of Jamacha Road, and west of Hillsdale Road at 3121 Willow Glen Drive, El Cajon, California (Figure 3, *Aerial Vicinity*). Steele Canyon Road bisects the project site from north to south, near the center of the site.

3.0 SURVEY METHODS

A rare plant survey was conducted on the project site by HELIX biologists Angelina Bottiani and Dane van Tamelen on April 17 and June 20, 2019 (Table 1, *Survey Information*). An updated survey was conducted by HELIX biologists Ryan Fitch, Shawn Carroll, and Jonathan Mercado on May 20 and July 11, 2022 (Table 1). The surveys also included focused surveys for the federally listed endangered San Diego ambrosia (*Ambrosia pumila*). Approximately 15.66 acres of U.S. Fish and Wildlife Service (USFWS) designated critical habitat for San Diego ambrosia occurs in the southwestern portion of the project site. A nearby population of San Diego ambrosia is located south of the southwestern portion of the project site within the San Diego National Wildlife Refuge (SDNWR). This population was field verified for detectability during the surveys. The surveys were conducted on foot and included 100 percent visual coverage of the project site. Special status plant species encountered were mapped using a hand-held Global Positioning System (GPS) unit and/or on an aerial photograph. Special status plant species were also searched for opportunistically during other surveys.

Special status plant species include species that are: listed as threatened or endangered by the USFWS or the California Department of Fish and Wildlife (CDFW 2021); those with a California Rare Plant Rank (CRPR) 1 through 4 designated by the California Native Plant Society (CNPS 2021); those that are on the County of San Diego's (County's) Sensitive Plant List (County 2010); and those covered by the County's MSCP Subarea Plan (County 1997). Their status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. A species that exhibits a small or restricted geographic range (such as those endemic to the region) is geographically rare. A species may be abundant but occur only in very specific habitats. Lastly, a species may be widespread but exist naturally in small populations.

Table 1
SURVEY INFORMATION

Date	Survey Number	Personnel[1]	Conditions
April 17, 2019	Spring	Angelia Bottiani Dane van Tamelen	--
June 29, 2019	Summer	Angelia Bottiani Dane van Tamelen	--
May 20, 2022	Spring	Ryan Fitch Shawn Carroll	--
July 11, 2022	Summer	Ryan Fitch Jonathan Mercado	--

4.0 RESULTS

4.1 FEDERAL OR STATE LISTED SPECIES

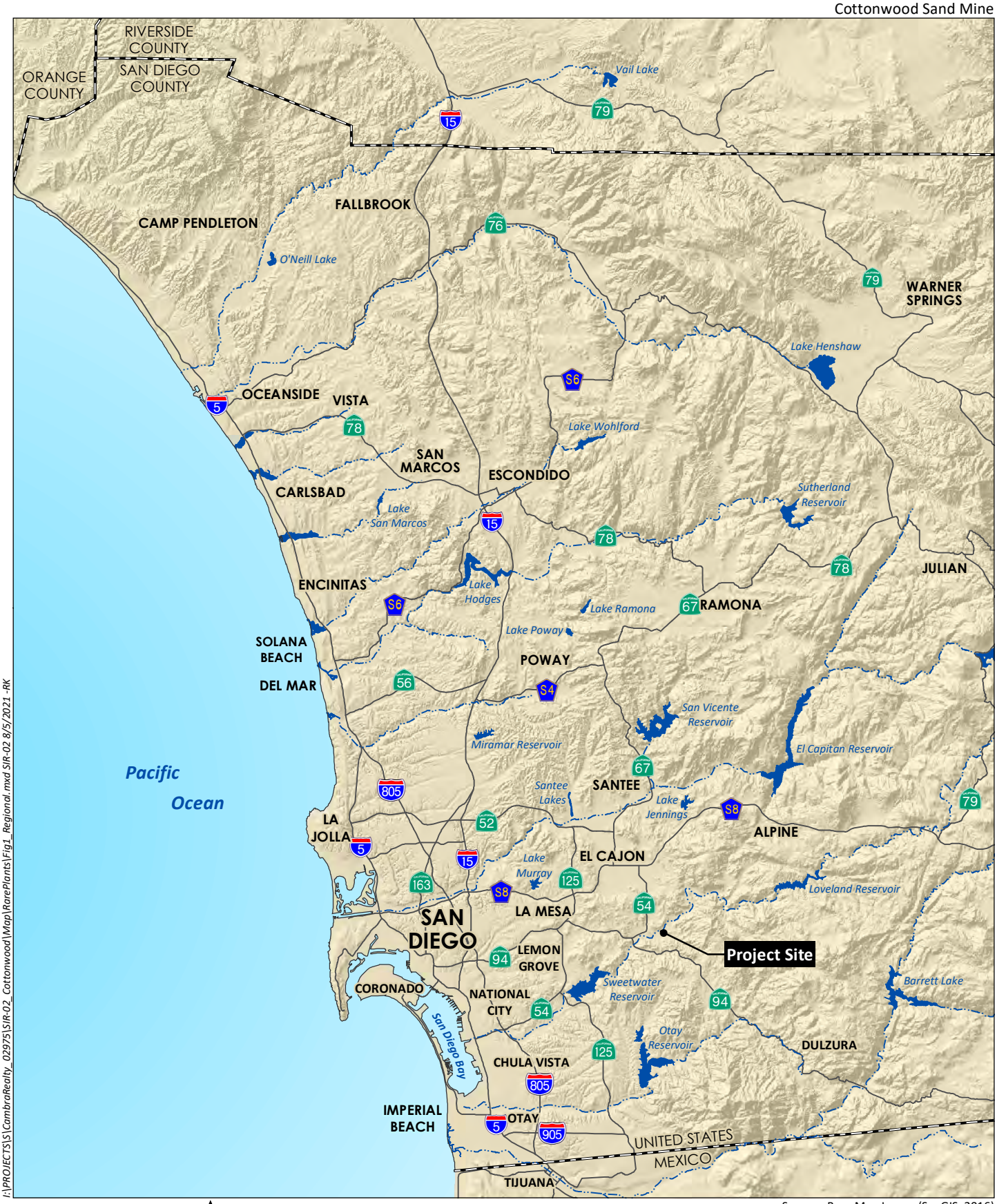
No federal or state listed plant species were observed within the project site. While USFWS designated critical habitat for the federally endangered San Diego ambrosia is present in the southwestern portion of the site, no individuals were observed within the project site during the 2019 and 2022 rare plant surveys. A nearby reference population of San Diego ambrosia that occurs within the SDNWR was field verified for detectability during the spring and summer 2022 rare plant surveys. The species was observed both in vegetative and flowering states within the SDNWR during the surveys. As such, the species would likely have been visible during the survey if present within the project site.

4.2 OTHER SPECIAL STATUS PLANT SPECIES

Four plant species with other special status designations were observed within or adjacent to the project site during the 2019 and 2022 rare plant surveys, as listed below and shown on Figure 4, *2022 Rare Plant Survey Results*.

San Diego Sagewort (*Artemisia palmeri*)
Sensitivity Status: --/--; CRPR 4.2; County List D
Distribution: Coastal regions of Orange and San Diego Counties at elevations below 1,970 feet.
Habitat(s): Moist drainages and stream courses on sandy and mesic soils.
Presence on Site: Seven individuals were observed at the western project boundary at the edge of southern riparian forest habitat along the Sweetwater River.

San Diego County Viguiera (*Bahiopsis laciniata*)
Sensitivity Status: --/--; CRPR 4.3, County List D
Distribution: Coastal portions of southern California from Ventura County south to San Diego County and into western Riverside County at elevations below 2,500 feet.
Habitat(s): Grows on a variety of soil types within coastal sage scrub and chaparral.
Presence on Site: Three individuals were observed at the northeastern portion of the project site within disturbed coastal sage scrub and non-native vegetation. Another three individuals were observed just outside of the project site at the northeastern boundary along Willow Glen Drive and at the southeastern boundary along a dirt road.



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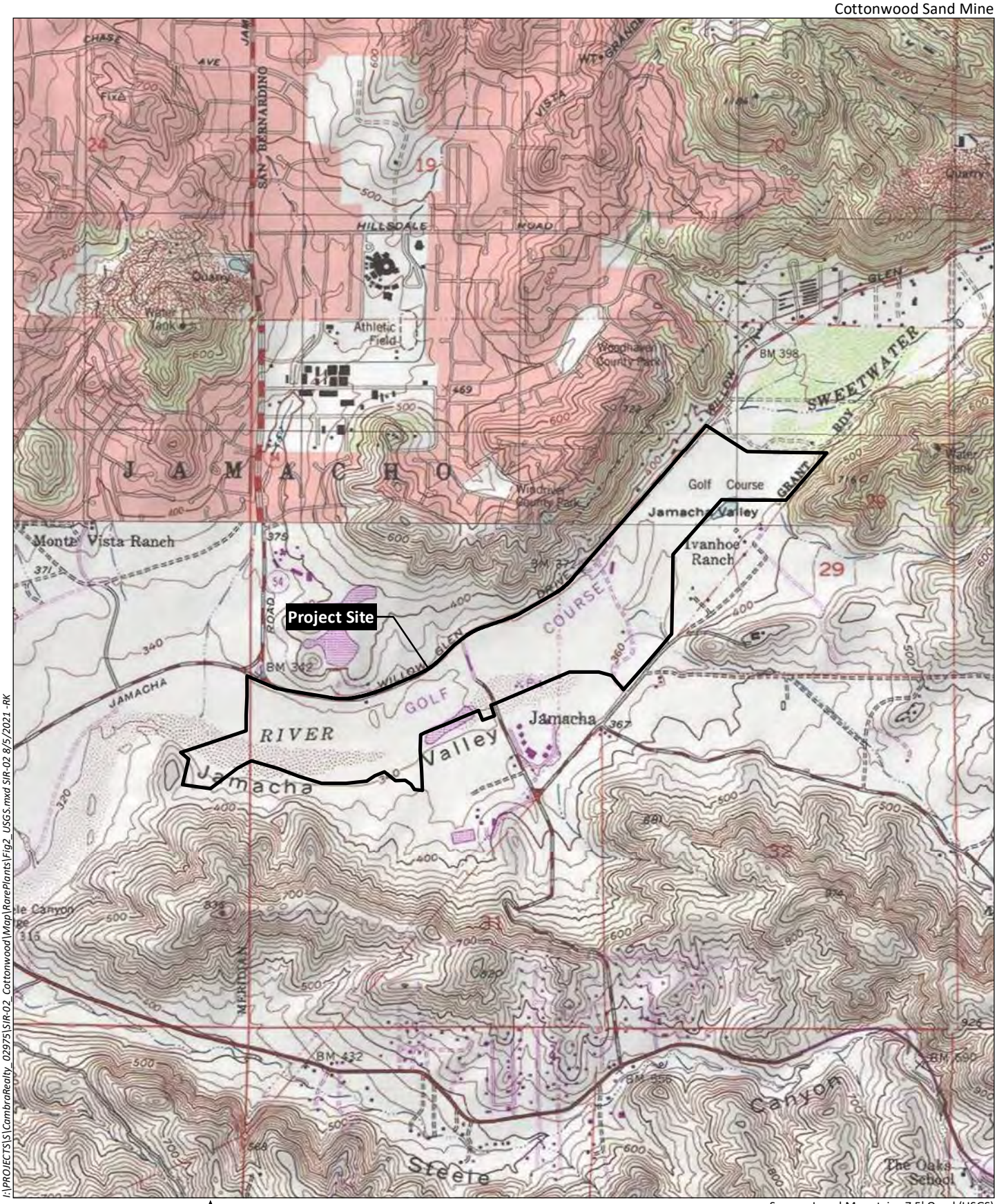
Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



Source: Jamul Mountains 7.5' Quad (USGS)

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HELIX Environmental Planning

USGS Topography

Figure 2

Source: Aerial (SanGIS 2017); NWR (U.S. Fish and Wildlife Service 2016)

HELIX Environmental Planning

Aerial Vicinity

Figure 3

Project Site

Major Use Permit Boundary

Special Status Species

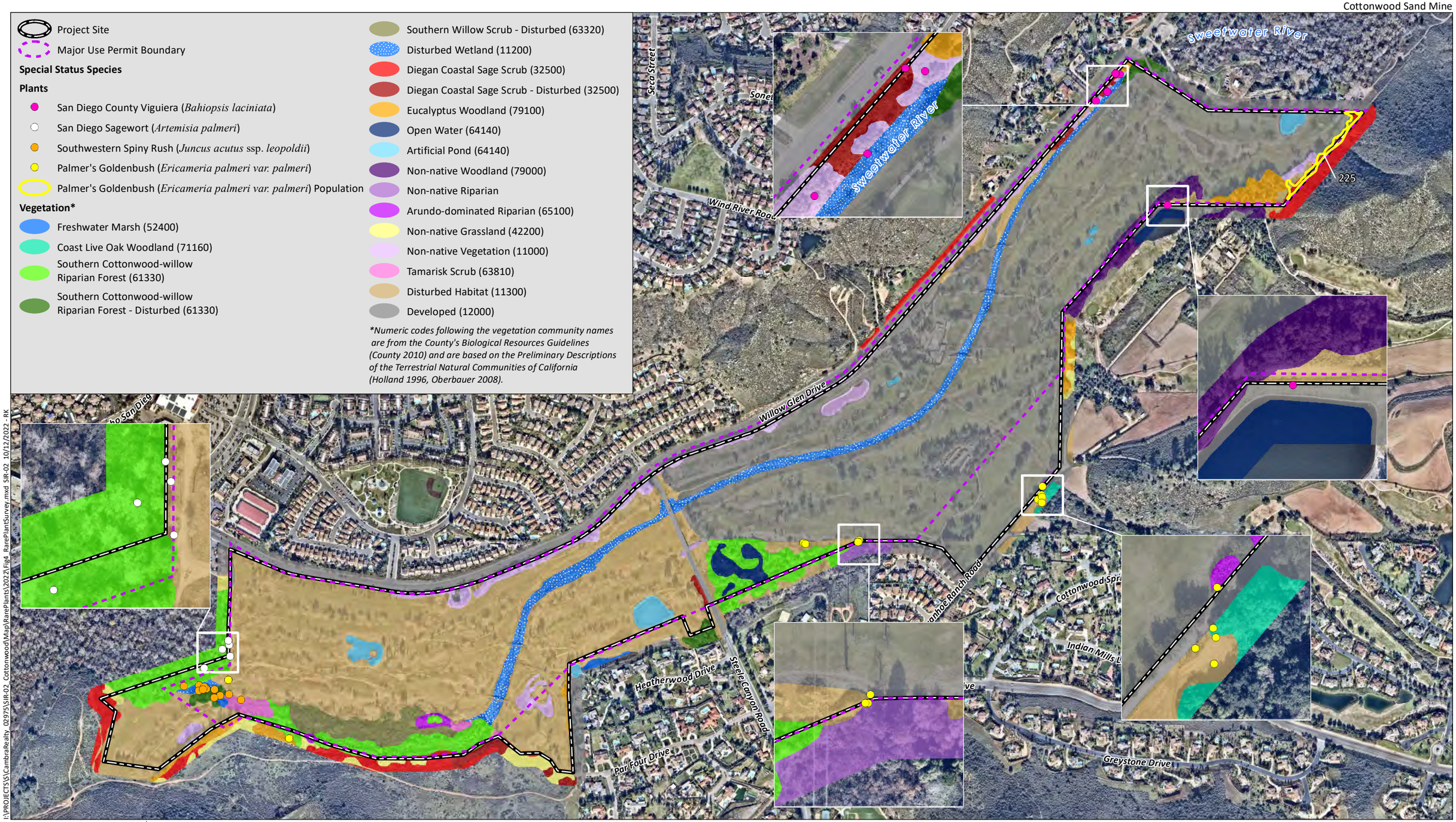
Plants

- San Diego County Viguiera (*Bahiopsis laciniata*)
- San Diego Sagewort (*Artemisia palmeri*)
- Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*)
- Palmer's Goldenbush (*Ericameria palmeri var. palmeri*)
- Palmer's Goldenbush (*Ericameria palmeri var. palmeri*) Population

Vegetation*

- Freshwater Marsh (52400)
- Coast Live Oak Woodland (71160)
- Southern Cottonwood-willow Riparian Forest (61330)
- Southern Cottonwood-willow Riparian Forest - Disturbed (61330)
- Southern Willow Scrub - Disturbed (63320)
- Disturbed Wetland (11200)
- Diegan Coastal Sage Scrub (32500)
- Diegan Coastal Sage Scrub - Disturbed (32500)
- Eucalyptus Woodland (79100)
- Open Water (64140)
- Artificial Pond (64140)
- Non-native Woodland (79000)
- Non-native Riparian
- Arundo-dominated Riparian (65100)
- Non-native Grassland (42200)
- Non-native Vegetation (11000)
- Tamarisk Scrub (63810)
- Disturbed Habitat (11300)
- Developed (12000)

**Numeric codes following the vegetation community names are from the County's Biological Resources Guidelines (County 2010) and are based on the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1996, Oberbauer 2008).*



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Source: Aerial (SanGIS, 2019)

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HELIX Environmental Planning

2022 Rare Plant Survey Results

Figure 4

Palmer ’s Goldenbush (*Ericameria palmeri* var. *palmeri*)
Sensitivity Status: --/--; CRPR 1B.1; County List B; MSCP Covered, MSCP Narrow Endemic
Distribution: Coastal San Diego County and Baja California, Mexico at elevations below 1,970 feet.
Habitat(s): Mesic areas within chaparral and coastal sage scrub communities.
Presence on Site: This species was observed along the southeastern project boundary, within the south-central portion of the site east of Steele Canyon Road, and in the southwestern portion of the project site. Approximately 225 individuals were mapped within Diegan coastal sage scrub habitat in the southeastern portion of the site. Another 11 individuals were mapped within the project site along the southern project boundary at the edge of a patch of giant reed where Mexican Canyon Creek enters the project site, within disturbed habitat just north of the patch of riparian habitat to the east of Steele Canyon Creek, and in the southwestern portion of the site within disturbed habitat just north of the Sweetwater River.

Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*)
Sensitivity Status: --/--; CRPR 4.2; County List D
Distribution: Coastal regions of southern California at elevations below 1,000 feet. San Luis Obispo County south to San Diego County, and further east into Riverside and Imperial Counties.
Habitat(s): Moist saline environments such as alkaline seeps and meadows, and coastal salt marshes and swamps.
Presence on Site: Seventeen individuals were observed at southwestern portion of the project site in wetland habitat at the downstream portion of the Sweetwater River.

5.0 CONCLUSION

No federal or state listed plant species were observed within the project site during the 2019 and 2022 rare plant surveys. Four special status species with other sensitivity designations by the CNPS and/or County were observed within the project site.

6.0 REFERENCES

California Department of Fish and Wildlife (CDFW). 2021.California Natural Diversity Database (CNDDB). Special Vascular Plants, Bryophytes, and Lichens List. July. Retrieved from: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline.

County of San Diego (County). 2010. Report Format and Content Requirements, Biological Resources. Fourth Revision, September 15.

1997. Multiple Species Conservation Program, County of San Diego Subarea Plan. October 22.

Appendix B

Arroyo Toad Survey Report

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July 30, 2019 SIR-02

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Subject: 2019 Arroyo Toad (*Anaxyrus californicus*) Survey Report for the Cottonwood Sand Mine Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey for the federally endangered arroyo toad (*Anaxyrus californicus*; ARTO) conducted by HELIX Environmental Planning, Inc. (HELIX) for the proposed Cottonwood Sand Mine Project (project). This letter describes the survey methods and results and is being submitted to the USFWS in accordance with protocol survey guidelines.

PROJECT LOCATION

The approximately 277-acre project site (site) is located in the unincorporated communities of Rancho San Diego and Jamul in eastern San Diego County, California (Figure 1, *Regional Location*). It is depicted within unsectioned lands of Township 16 South, Ranges 1 west and 1 east of the Jamul Mountains and El Cajon, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 2, *USGS Topography*). The site lies north of State Route (SR) 94 and east of SR 54 within the Cottonwood Golf Club. More specifically, the site occurs south and southeast of Willow Glen Drive, north of Jamul Drive, east of Jamacha Road, and west of Hillsdale Road (Figure 3, *Aerial Vicinity*). Steele Canyon Road bisects the project site from north to south, near the center of the site. No critical habitat for arroyo toad occurs within or adjacent to the project site.

METHODS

The survey consisted of six site visits conducted by HELIX biologists Benjamin Rosenbaum, Erica Harris, Dane van Tamelen, Samantha Edgley, and Angelia Bottani between April 15 and June 25, 2019 (Table 1,

Survey Information), in accordance with the current USFWS survey protocol[1]. The surveys included both a daytime and nighttime component conducted within the same 24-hour period. Daytime surveys were conducted during the daylight hours prior to sunset and nighttime surveys began one hour after sunset. The surveys were timed to take place outside of the near- and full-moon phases. The primary objective of daytime surveys was to detect and document the presence of any arroyo toads in the immature life stage (egg strings, larvae, metamorphic individuals, or toadlets). Nighttime surveys were conducted to detect any breeding adults.

Daytime surveys were conducted by walking slowly along the stream margin and adjacent riparian habitat visually searching for eggs, larvae, and juveniles. When it was necessary to walk within the stream, care was taken not to disturb or create silt deposits. Biologists crossed the stream in fast-flowing channels to minimize the likelihood of stirring up silt deposits. Extreme caution was used to avoid disturbing arroyo toads that could be burrowed into sandbars and banks or lodged in depressions in the substrate. Potential breeding pools and arroyo toad locations detected during the survey were either marked on an aerial photograph or recorded with a hand-held global positioning system (GPS) unit.

Nighttime surveys were conducted by walking slowly and methodically along stream banks while making repeated stops to listen for calling toads. Surveys were conducted as silently as possible to avoid any observer influence over toad behavior and to facilitate abundance estimates of any toads detected in the survey area. The same precautions used during daytime surveys to avoid potential disturbances to toads were taken during nighttime surveys. Artificial lighting used during the survey was kept to a minimum.

A habitat assessment for arroyo toad was conducted within the project site during the first daytime survey. Habitat within the project site was either determined to be suitable, as described in the USFWS species report[2], or unsuitable and was excluded from the survey area. Suitable habitat was then classified as either marginal, low, moderate, or high-quality breeding habitat for the species. High quality breeding habitat contains the species primary constituent elements[3] including:

- Low-gradient, slower mowing rivers or streams that contain shallow breeding pools that hold water at least two months to allow for larval development;
- Riparian and adjacent upland habitats with sandy or fine gravel substrates that contain shallow pools for breeding or loose soil for burrowing toads; and
- Natural flooding regimes with intermittent or near-perennial flows that maintain open, sparsely vegetated, sandy stream channels and terraces.

Suitable habitat for the species generally consists of habitat located along, or directly adjacent to, the Sweetwater River which flows in a western direction through the project site (Figure 4, *Arroyo Toad*

[1] U.S. Fish and Wildlife Service. 1999. Survey Protocol for the Arroyo Toad. U.S. Department of Interior, Fish and Wildlife Service. May 19.

[2] U.S. Fish and Wildlife Service. 2014. Arroyo Toad (*Anaxyrus californicus*) Species Report. U.S. Fish and Wildlife Service Ventura Fish and Wildlife Office, Ventura, California. March 24. Retrieved from: https://www.fws.gov/ventura/docs/species/at/Arroyo%20Toad%20Final%20Species%20Report.pdf

[3] U.S. Fish and Wildlife Service. 2011. Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the Arroyo Toad; Final Rule. Federal Register. Volume 26, Number 27. February 9.

Habitat Assessment). Vegetation communities within the arroyo toad survey area consisted of disturbed Diegan coastal sage scrub, eucalyptus woodland, non-native vegetation, disturbed wetland, arundo-dominated riparian, tamarisk scrub, southern willow scrub (including disturbed), and southern cottonwood-willow riparian forest (including disturbed) along with disturbed habitat and developed land associated within the inactive and active portions of the golf course (Figure 5, *2019 Arroyo Toad Survey Results*).

Table 1 details the survey dates, times, and conditions.

Table 1
SURVEY INFORMATION

Site Visit	Date	Biologists	Survey Type	Survey Time (Start/Stop)	Weather Conditions (Start/Stop)	Results
1	4/15/19	Benjamin Rosenbaum Erica Harris	Daytime Survey	1145/1515	71°F, wind 0-2 mph, 15% clouds 73°F, wind 2-4 mph, 5% clouds	No ARTO detected
			Nighttime Survey	1950/2205	60°F, wind 1-3 mph, 60% clouds 62°F, wind 0-1 mph, 90% clouds	No ARTO detected
2	4/24/19	Benjamin Rosenbaum Dane Van Tamelen	Daytime Survey	1130/1330	74°F, wind 2-5 mph, clear sky 79°F, wind 2-5 mph, clear sky	No ARTO detected
			Nighttime Survey	1945/2210	67°F, wind 2-5 mph, clear sky 67°F, wind 2-5 mph, clear sky	No ARTO detected
3	5/1/19	Benjamin Rosenbaum Samantha Edgley	Daytime Survey	1130/1430	66°F, wind 1-3 mph, 5% clouds 72°F, wind 1-3 mph, 5% clouds	No ARTO detected
			Nighttime Survey	2000/2215	60°F, wind 1-3 mph, 80% clouds 59°F, wind 2-5 mph, 80% clouds	No ARTO detected
4	5/23/19	Benjamin Rosenbaum Angelia Bottiani[1]	Daytime Survey	0900/1030	62°F, wind 2-5 mph, 80% clouds 65°F, wind 2-5 mph, 100% clouds	No ARTO detected
			Nighttime Survey	2040/2240	60°F, wind 2-5 mph, clear sky 57°F, wind 2-5 mph, clear sky	No ARTO detected
5	6/13/19	Benjamin Rosenbaum Angelia Bottiani[1]	Daytime Survey	1145/1320	78°F, wind 2-5 mph, clear sky 87°F, wind 2-5 mph, clear sky	No ARTO detected
			Nighttime Survey	2030/2220	62°F, wind 0-2 mph, clear sky 59°F, wind 0-1 mph, clear sky	No ARTO detected
6	6/25/19	Benjamin Rosenbaum Samantha Edgley[1]	Daytime Survey	1130/1315	69°F, wind 2-5 mph, 80% clouds 71°F, wind 1-3 mph, 40% clouds	No ARTO detected
			Nighttime Survey	2045/2235	66°F, wind 0-1 mph, 90% clouds 64°F, wind 0-1 mph, 90% clouds	No ARTO detected

[1] Conducted nighttime survey only.

SURVEY RESULTS

No evidence of the arroyo toad, including eggs, tadpoles, toadlets, or adult toads was detected during the survey effort (Figure 5). Adult toads were not heard calling within, or adjacent to, the project site. Arroyo toads have not been detected south of Sloan Canyon Road, located over five miles upstream of the site, since 1997.[2,4] Focused arroyo toad surveys previously conducted within the San Diego National Wildlife Refuge, which occurs east and immediately west of site, were negative[5]. Furthermore, focused arroyo toad surveys were conducted within the project site by the USGS in 2003, during which no arroyo toads were observed[6]. Arroyo toads are presumed to absent from the project site based on the lack of past detections and previous negative surveys, including the HELIX's 2019 negative survey results.

Potentially suitable habitat within the project site has been heavily degraded by development of the Cottonwood Golf Club in the early 1960s and other past site disturbances such as mining for construction aggregates from the 1950s to 1970s. These disturbances have resulted in the removal and conversion of riparian habitat to turf grass throughout the vast majority of the site, along with the realignment and constriction of the Sweetwater River. Marginal to low-quality habitat for the species was found along the Sweetwater River during the 2019 protocol surveys (Figure 4). Marginal quality habitat consists of an upstream portion of Sweetwater River at the northeastern portion of the project site. This section of Sweetwater River is concrete-bottomed and does not provide suitable sandy substrates for burrowing toads. Low quality habitat consists of open-sandy bottomed portions of Sweetwater River that occur within the upper two-thirds reach of Sweetwater River, and dense riparian vegetation that occurs in the southwestern portion of the site at the downstream reach of Sweetwater River. The upper reach of Sweetwater River is located within the active portion of the golf course that is subject to on-going human disturbances and maintenance activities, such as irrigation, mowing, and extensive golf cart use associated with operation of the Cottonwood Golf Club. The downstream reach of Sweetwater River contains dense riparian habitat that lacks suitable shallow breeding pools for the species.

A patch of riparian habitat associated with a lower-lying area excavated as part of previous mining activities occurs along the project's southern boundary, to the east of Steele Canyon Road. This patch of habitat was excluded from the survey area as it does not contain the species' primary consistent elements such as a naturally flooding regime, shallow breeding pools, and vegetated sand and gravel bars. The area is characterized by large ponded areas and dense riparian habitat that are not suitable for arroyo toad. Furthermore, American bullfrogs (*Lithobates catesbeianus*) were detected within this area, and other artificial ponds within the golf course, which are non-native predators of the species.

Upland vegetation within the project site predominately consists of golf course fairways and greens that are regularly irrigated and mowed. These areas are unsuitable for the species as they are heavily

[4] U.S. Geological Survey. 2005a. Distribution and Status of Arroyo Toad (*Bufo californicus*) and Western Pond Turtle (*Emys marmorata*) in the San Diego MSCP and Surrounding Areas. Final Report. U.S. Geological Survey Western Ecological Research Center. October 5. Retrieved from: https://www.sandiegocounty.gov/content/dam/sdc/pds/mscp/docs/Toad_Turtle_Distribution_and_Status.pdf

[5] Martin, John. 2005. Arroyo Toad (*Bufo californicus*) Surveys on San Diego National Wildlife Refuge Report. August 1.

[6] U.S. Geological Survey. 2005b. Baseline Surveys for the Arroyo Toad (*Bufo californicus*) in the Sweetwater River Channel, San Diego County, San Diego. Draft Final Report. October 5. Retrieved from: https://sdmmp.com/upload/SDMMP_Repository/0/ng809h3vjcfzwbrxsdm51qyk72t4p.pdf

trafficked as part of golf play and would not provide suitable burrowing or foraging habitat for the species.

The hydrological regime of the Sweetwater River has also been substantially altered by the creation of artificial impoundments along its reach including Loveland Reservoir (constructed in 1945) located upstream of the site and Sweetwater Reservoir (constructed in 1888) located downstream of the site. Both dams are operated by the Sweetwater Authority whom conduct controlled releases of water to downstream areas. Controlled releases in 2019 resulted in high flows and swift-moving water through the project site in March and April which caused heavy erosion within portions of the river channel.

CERTIFICATION

I certify that the information in this survey report and attached exhibits fully and accurately represents our work. Please contact Shelby Howard or us at (619) 462-1515 should you have any questions.

Sincerely,

Benjamin Rosenbaum
Biologist

Erica Harris
Biologist

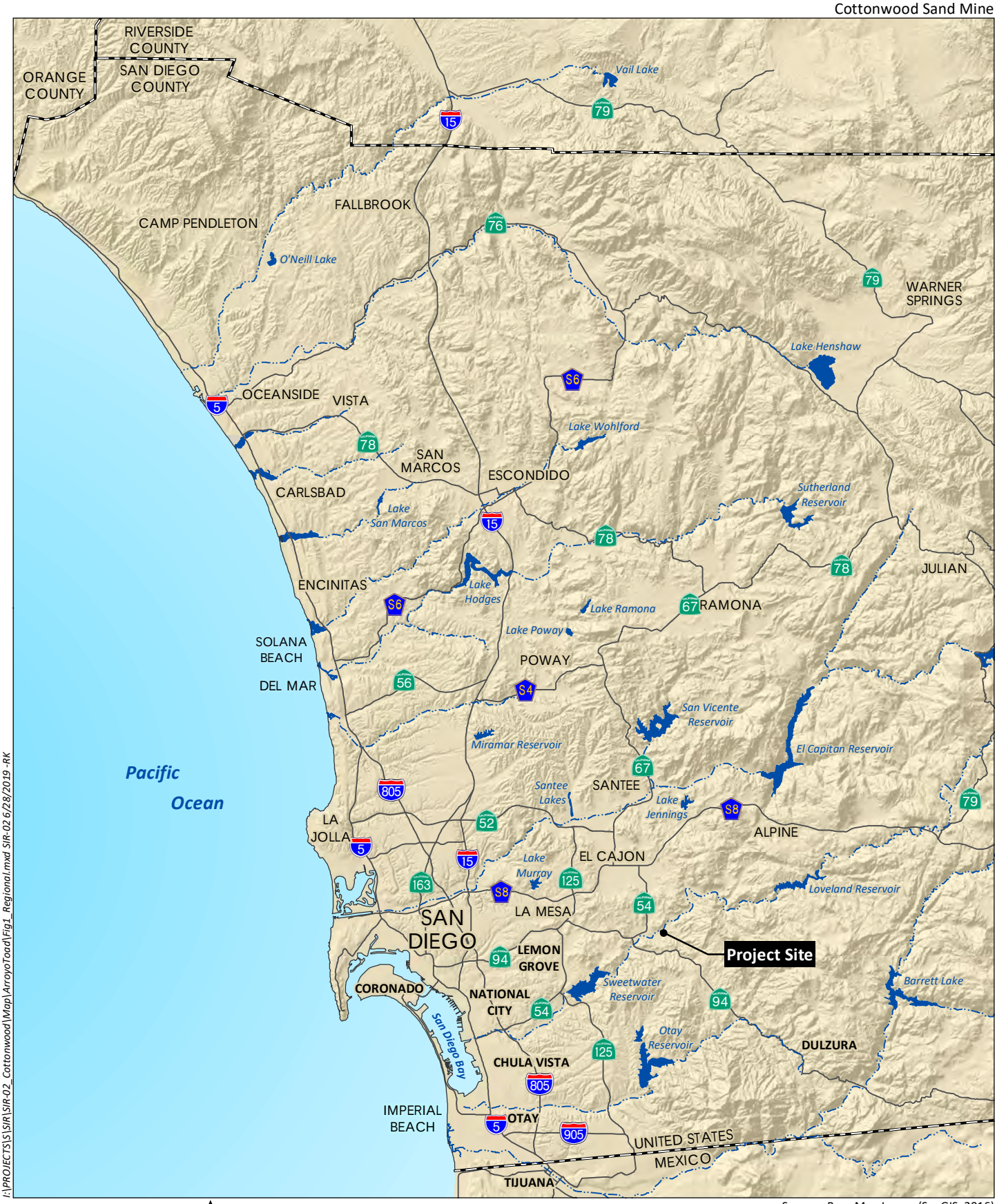
Dane van Tamelen
Biologist

Samantha Edgley
Biologist

Angelia Bottani
Biologist

Attachments:

Figure 1: Project Location
Figure 2: USGS Topography
Figure 3: Aerial Photograph
Figure 4: Arroyo Toad Habitat Assessment
Figure 5: 2019 Arroyo Toad Survey Results



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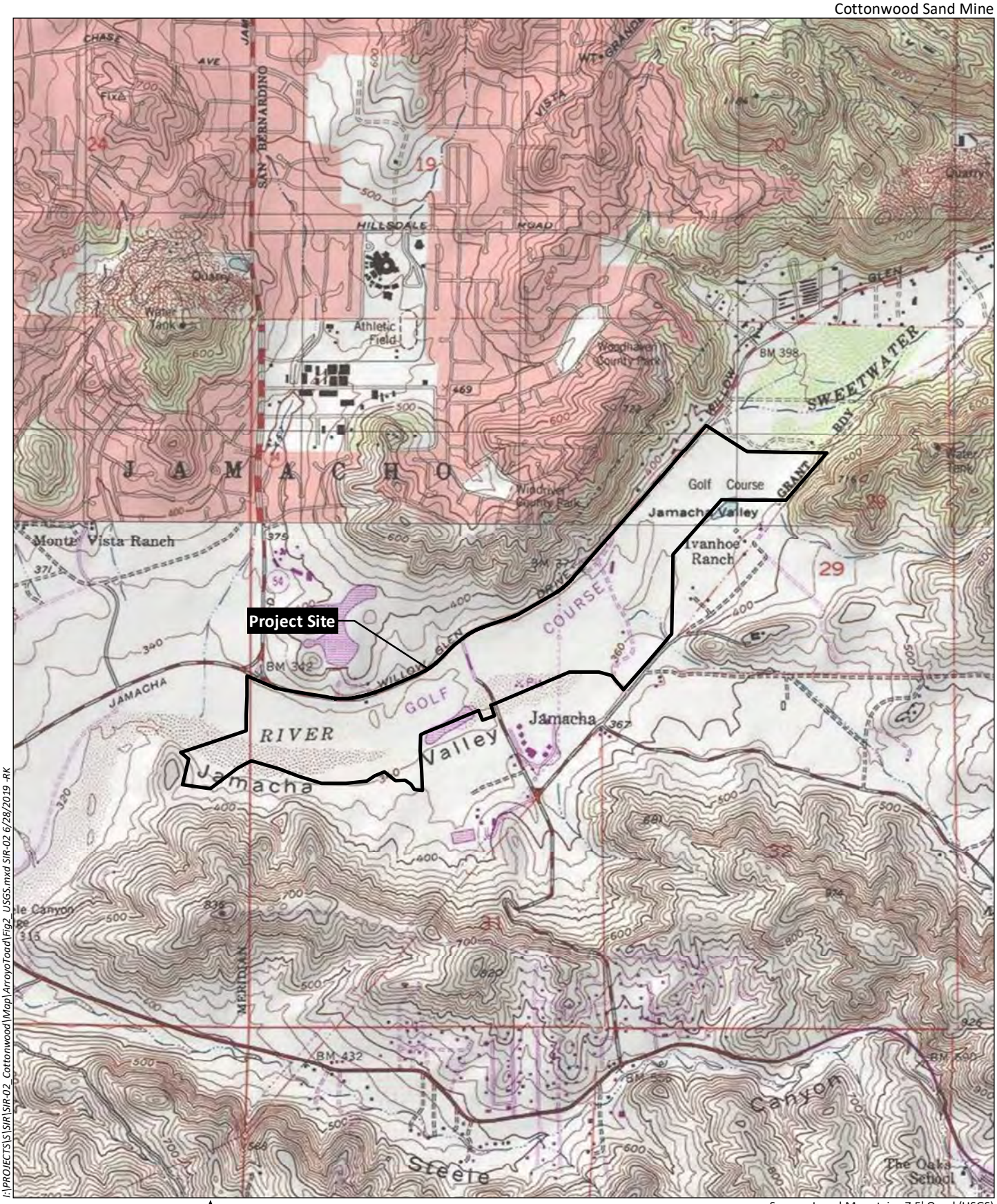
Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



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Source: Jamul Mountains 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2

Source: Aerial (SanGIS 2017); NWR (U.S. Fish and Wildlife Service 2016)

HELIX Environmental Planning

Aerial Vicinity

Figure 3

Cottonwood Sand Mine

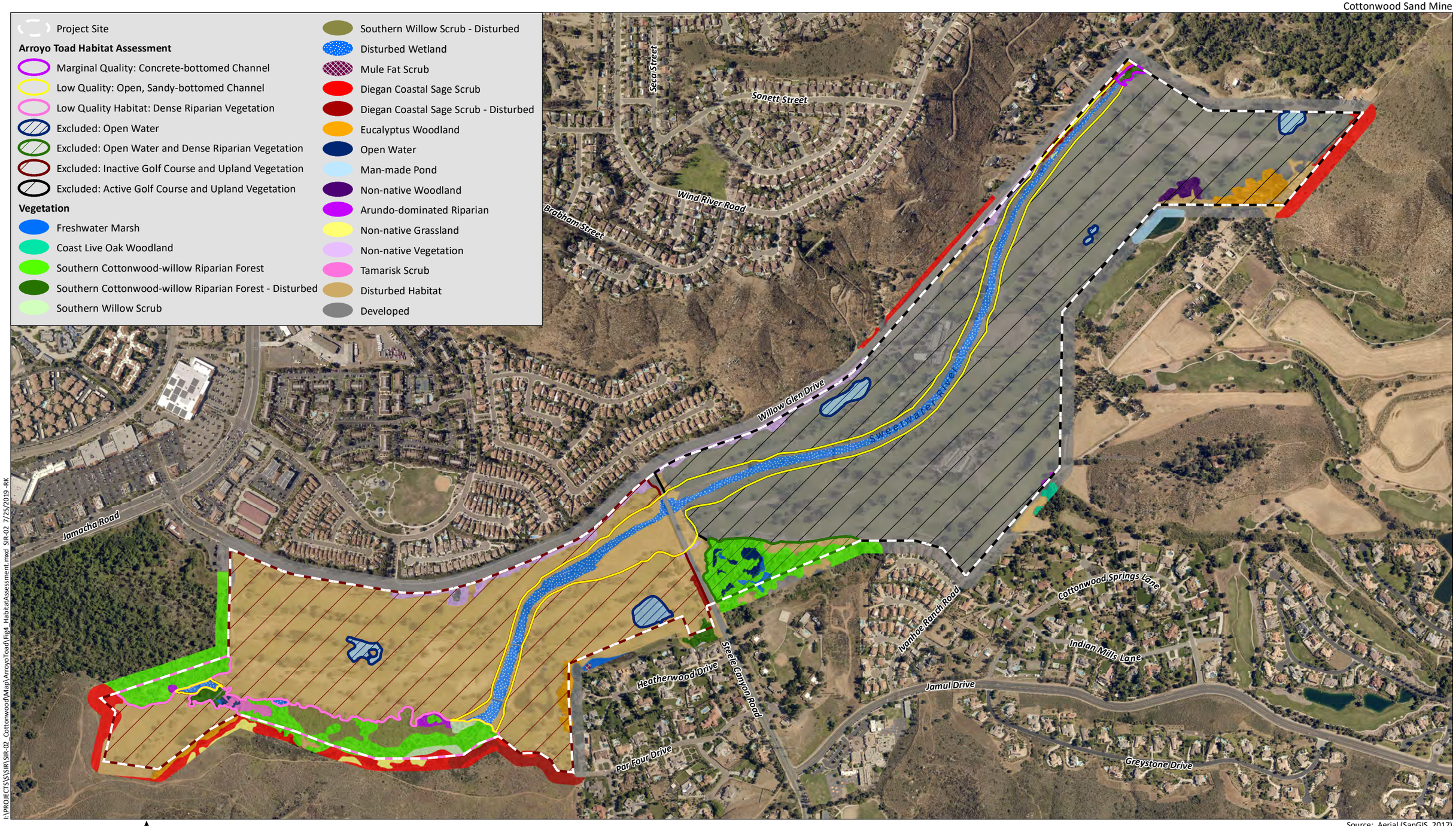
- Project Site

Arroyo Toad Habitat Assessment

- Marginal Quality: Concrete-bottomed Channel
- Low Quality: Open, Sandy-bottomed Channel
- Low Quality Habitat: Dense Riparian Vegetation
- Excluded: Open Water
- Excluded: Open Water and Dense Riparian Vegetation
- Excluded: Inactive Golf Course and Upland Vegetation
- Excluded: Active Golf Course and Upland Vegetation

Vegetation

- Freshwater Marsh
- Coast Live Oak Woodland
- Southern Cottonwood-willow Riparian Forest
- Southern Cottonwood-willow Riparian Forest - Disturbed
- Southern Willow Scrub
- Southern Willow Scrub - Disturbed
- Disturbed Wetland
- Mule Fat Scrub
- Diegan Coastal Sage Scrub
- Diegan Coastal Sage Scrub - Disturbed
- Eucalyptus Woodland
- Open Water
- Man-made Pond
- Non-native Woodland
- Arundo-dominated Riparian
- Non-native Grassland
- Non-native Vegetation
- Tamarisk Scrub
- Disturbed Habitat
- Developed



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Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Arroyo Toad Habitat Assessment

Figure 4

Cottonwood Sand Mine

- Project Site
- Arroyo Toad Survey Area
- Arroyo Toad Exclusion Area

Vegetation

- Freshwater Marsh
- Southern Cottonwood-willow Riparian Forest
- Southern Cottonwood-willow Riparian Forest - Disturbed
- Southern Willow Scrub
- Southern Willow Scrub - Disturbed
- Disturbed Wetland
- Diegan Coastal Sage Scrub
- Diegan Coastal Sage Scrub - Disturbed
- Open Water
- Arundo-dominated Riparian
- Non-native Vegetation
- Tamarisk Scrub
- Disturbed Habitat
- Developed

**No arroyo toads were detected during the 2019 protcol-level survey effort.*

Jamacha Way
Seca Street
Sonett Street
Wind River Road
Brabham Street
Willow Glen Drive
SWEETWATER RIVER
Jamacha Road
Heatherwood Drive
Steele Canyon Road
Par Four Drive
Ivanhoe Ranch Road
Cottonwood Springs Lane
Indian Mills Lane
Jamul Drive
Greystone Drive

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0 700 Feet

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Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

2019 Arroyo Toad Survey Results

Figure 5

Appendix C

Least Bell's Vireo Survey Report

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August 23, 2019 SIR-02

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Subject: 2019 Least Bell's Vireo (*Vireo bellii pusillis*) Survey Report for the Cottonwood Sand Mine Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey for the federally endangered least Bell's vireo (*Vireo bellii pusillus*; LBVI) conducted by HELIX Environmental Planning, Inc. (HELIX) for the Cottonwood Sand Mine Project (project). This letter describes the survey methods and results and is being submitted to the USFWS in accordance with protocol survey guidelines.

PROJECT LOCATION

The approximately 277-acre project site (site) is located in the unincorporated communities of Rancho San Diego and Jamul in eastern San Diego County, California (Figure 1, *Regional Location*). It is depicted within unsectioned lands of Township 16 South, Ranges 1 west and 1 east of the Jamul Mountains and El Cajon, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 2, *USGS Topography*). The site lies north of State Route (SR) 94 and east of SR 54 within the Cottonwood Golf Club. More specifically, the site is located at the Cottonwood Golf Club to the southeast of Willow Glen Drive, north of Jamul Drive, east of Jamacha Road, and west of Hillsdale Road at 3121 Willow Glen Drive, El Cajon, California (Figure 3, *Aerial Vicinity*). Steele Canyon Road bisects the project site from north to south, near the center of the site.

USFWS-designated critical habitat for the species is present within the project site and further west of the site within the San Diego National Wildlife Refuge (Figure 4, *2019 Least Bell's Vireo Survey Results*).

METHODS

The survey consisted of eight site visits conducted by HELIX biologists Erica Harris, Stacy Nigro, and Dane van Tamelen between May 3 and July 18, 2019 (Table 1, *Survey Information*), in accordance with the

current USFWS survey protocol[1]. The survey area consisted of approximately 20.7 acres of suitable LBVI habitat within the study area composed of open water, freshwater marsh, mule fat scrub, tamarisk scrub, arundo-dominated riparian, southern willow scrub (including disturbed), and southern cottonwood-willow riparian forest (including disturbed) located along Sweetwater River and within a lower-lying depressional area created during previous extraction activities (Figure 4).

The surveys were conducted by walking along the edges of, as well as within, potential LBVI habitat in the survey area while listening for LBVI and viewing birds with the aid of binoculars. The survey route was designed to ensure complete survey coverage of habitat potentially occupied by LBVI.

A portion of the surveys were conducted on the same days as the protocol surveys for the southwestern willow flycatcher (*Empidonax traillii extimus*; SWFL). The riparian habitat was surveyed sequentially. The surveyor surveyed for SWFL as they walked one direction along/within suitable SWFL habitat, and then surveyed for LBVI as they walked back the other direction. A separate survey report is being submitted for the SWFL survey effort (HELIX in preparation).

Table 1 details the survey dates, times, and conditions.

[1] U.S. Fish and Wildlife Service (USFWS). 2001. Least Bell's Vireo Survey Guidelines. January 19.

Table 1
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time Start/End	Approx. Acres Surveyed/Acres per Hour	Start/Stop Weather Conditions	Survey Result	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
1	4/16/19	Dane van Tamelen	0700/1100	20.7 ac/ 5.2 ac per hr.	58°F, wind 1-4 mph, 100% clouds 61°F, wind 3-7 mph, 100% clouds	• Male (Male No. 1) heard singing approximately 180 feet south of the northeastern portion of the project site within the Steele Canyon Golf Course. • Male (Male No. 2) heard singing approximately 50 feet east of the project site within the Steele Canyon Golf Course. • Male (later determined to be same male in Pair No. 2) heard singing approximately 200 feet west of the project site within the San Diego National Wildlife Refuge.	0
2	4/30/19	Dane van Tamelen	0745/1100	20.7 ac/ 6.4 ac per hr.	57°F, wind 0-2 mph, 100% clouds 60°F, wind 0-3 mph, 90% clouds	• Male No. 2 heard singing within same general area outside of the project site within the Steele Canyon Golf Course. • Male (Male No. 3) heard singing in the southwestern portion of the project site within riparian habitat along Sweetwater River.	0

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time Start/End	Approx. Acres Surveyed/Acres per Hour	Start/Stop Weather Conditions	Survey Result	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
3	5/15/19	Erica Harris	0730/1030	20.7 ac/ 6.9 ac per hr.	62°F, wind 0-1 mph, 100% clouds 72°F, wind 0-2 mph, 80% clouds	• Male No. 1 heard singing in same general area outside of the project site within the Steele Canyon Golf Course. • Male No. 2 heard in same general area outside of the project site within the Steele Canyon Golf Course. Male was observed within a small patch of tamarisk (*Tamarix* sp.). • Male (later determined to be same male in Pair No. 1) heard singing within riparian habitat to the east of Steele Canyon Road. • Male No. 3 heard singing within same general area in the southwestern portion of the site along Sweetwater River. • Male (Male No. 4) heard singing approximately 150 feet north of the southwestern portion of the project site within the San Diego National Wildlife Refuge. • Male from Pair No. 2 heard singing in the same general area west of the project site within the San Diego National Wildlife Refuge.	6

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time Start/End	Approx. Acres Surveyed/Acres per Hour	Start/Stop Weather Conditions	Survey Result	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
4	5/30/19	Erica Harris	0645/1045	20.7 ac/ 5.2 ac per hr.	61°F, wind 0-1 mph, 100% clouds 72°F, wind 0-2 mph, 0% clouds	• Male No. 1 heard singing in same general area outside of the project site within the Steele Canyon Golf Course. • Male No. 2 heard in same general area outside of the project site within the Steele Canyon Golf Course. • Male and female belonging to Pair No. 1 heard singing and observed feeding 3 fledglings within same general to the east of Steele Canyon Road. • Male No. 3 heard singing within same general in the southwestern portion of the site along Sweetwater River. • Male No. 4 heard singing in the same general area north of the southwestern portion of the project site within the San Diego National Wildlife Refuge. • Male from Pair No. 2 heard singing in the same general area west of the project site within the San Diego National Wildlife Refuge.	6

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time Start/End	Approx. Acres Surveyed/Acres per Hour	Start/Stop Weather Conditions	Survey Result	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
5	6/11/19	Erica Harris	0620/1020	20.7 ac/ 5.2 ac per hr.	61°F, wind 0-1 mph, 0% clouds 82°F, wind 0-3 mph, 0% clouds	• Male No. 1 heard singing in same general area outside of the project site within the Steele Canyon Golf Course. • Male No. 2 heard in same general area outside of the project site within the Steele Canyon Golf Course. • Male from Pair No. 1 heard singing in same general to the east of Steele Canyon Road. • Male No. 4 heard singing within same general in the southwestern portion of the site along Sweetwater River. • Male No. 3 heard singing in the same general area north of the southwestern portion of the project site within the San Diego National Wildlife Refuge. • Male from Pair No. 2 heard singing in the same general area west of the project site within the San Diego National Wildlife Refuge.	4

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time Start/End	Approx. Acres Surveyed/Acres per Hour	Start/Stop Weather Conditions	Survey Result	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
6	6/21/19	Erica Harris	0630/1030	20.7 ac/ 5.2 ac per hr.	62°F, wind 0-1 mph, 100% clouds 71°F, wind 1-3 mph, 100% clouds	• Male No. 1 heard singing in same general area outside of the project site within the Steele Canyon Golf Course. • Male No. 2 observed singing in same general area outside of the project site within the Steele Canyon Golf Course. • Male belonging to Pair No. 1 heard singing within same general to the east of Steele Canyon Road. Heard countersinging with new male (Male No. 5) located to the east. • New male (Male No. 5) heard singing within riparian habitat to the east of Steele Canyon Road along the project's southern boundary. Male was heard countersinging with male from Pair No. 1. • Male No. 3 heard singing within same general area in the southwestern portion of the site along Sweetwater River. Heard countersinging with new male (Male No. 6) located to the east. • New male (Male No. 6) heard singing within riparian habitat in the southwestern portion of the site along Sweetwater River. Male was heard countersinging with Male No. 3. • Male No. 4 heard singing in the same general area north of the southwestern portion of the project site within the San Diego National Wildlife Refuge. • Male from Pair No. 2 heard singing in the same general area west of the project site within the San Diego National Wildlife Refuge. Presumed female observed foraging near property fence line while male singing nearby.	6

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time Start/End	Approx. Acres Surveyed/Acres per Hour	Start/Stop Weather Conditions	Survey Result	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
7	7/1/19	Erica Harris	0640/1040	20.7 ac/ 5.2 ac per hr.	58°F, wind 0-1 mph, 0% clouds 78°F, wind 1-3 mph, 0% clouds	• Male No. 1 heard singing in same general area outside of the project site within the Steele Canyon Golf Course. • Male No. 2 observed singing in same general area outside of the project site within the Steele Canyon Golf Course. • Male belonging to Pair No. 1 heard singing within same general to the east of Steele Canyon Road. • Male No. 5 heard singing within the same general area to the east of Steele Canyon Road. Male was heard approximately 700 feet east of male from Pair No. 1. • Male No. 3 heard singing within same general area in the southwestern portion of the site along Sweetwater River. • Male No. 4 heard singing in the same general area north of the southwestern portion of the project site within the San Diego National Wildlife Refuge. • Male from Pair No. 2 heard singing in the same general area west of the project site within the San Diego National Wildlife Refuge.	5

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time Start/End	Approx. Acres Surveyed/Acres per Hour	Start/Stop Weather Conditions	Survey Result	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
8	7/15/19	Stacy Nigro	0640/1100	20.7 ac/ 4.8 ac per hr.	59°F, wind 0-1 mph, 0% clouds 86°F, wind 0-1 mph, 0% clouds	• Male No. 1 heard singing in same general area outside of the project site within the Steele Canyon Golf Course. • Male No. 2 observed singing in same general area outside of the project site within the Steele Canyon Golf Course. • Male belonging to Pair No. 1 heard singing within same general to the east of Steele Canyon Road. • Male No. 5 heard singing within the same general area to the east of Steele Canyon Road. Male was heard east of male from Pair No. 1. • Male No. 3 heard singing within same general area in the southwestern portion of the site along Sweetwater River. Heard countersinging with Male No. 6 located to the east. • Male No. 6 heard singing within same general area in the southwestern portion of the site along Sweetwater River. Male was heard approximately 490 feet east of Male No. 3. • Male No. 4 heard singing in the same general area north of the southwestern portion of the project site within the San Diego National Wildlife Refuge. • Male from Pair No. 2 heard singing in the same general area west of the project site within the San Diego National Wildlife Refuge.	2

[1] Number of brown-headed cowbird (*Molothrus ater*) detected during survey.

SURVEY RESULTS

A total of two pairs of LBVI, and six additional male vireos were detected during the 2019 survey effort, though not all individuals were observed during each survey (Figure 4). One LBVI pair (Pair No. 1) and three male vireos (Male No. 3, Male No. 5, and Male No. 6) were detected within the project site. One LBVI pair (Pair No. 2) was detected outside of the project site (within the San Diego National Wildlife Refuge) and three male vireos, two within the Steele Canyon Golf Course (Males No. 1 and No. 2) and one within the San Diego National Wildlife Refuge (Male No. 4), were detected outside of the project site. No banded individuals were observed during the survey; however, not all individuals were directly observed. A detailed description of LBVI locations and observations is included below.

A single male (Male No. 1) was detected approximately 180 feet south of the northeastern portion of the project site within the Steele Canyon Golf Course (Figure 4). The male was heard singing during the first survey but was not detected during the second survey. The individual was heard singing during the remaining third through eighth survey visits in the same general location.

A single male (Male No. 2) was detected approximately 50 feet east of the project site within the Steele Canyon Golf Course (Figure 4). The male was heard singing during the first and second survey visits. On the third survey visit, a male was observed singing from a tamarisk shrub in the same general area and was determined to be unbanded. The male was heard singing during the fourth and fifth surveys in the same general area outside of the project site. On the sixth survey visit the male was first heard singing to the east of the project site but briefly entered the project site and sang from sycamore (*Platanus racemosa*) present along the dirt golf cart path; the male was not banded. The male was heard singing to the east of the site during the seventh visit and was observed singing and foraging within a tamarisk shrub during the eighth survey (and was confirmed to be unbanded).

A vireo pair (Pair No. 1) was detected along the southern project boundary to the east of Steele Canyon Road within riparian habitat associated within a previously excavated area created during previous mining activities (Figure 4). No vireos were detected in the area during the first or second survey visits, but a male was heard singing from the riparian habitat during the third survey visit. On the fourth survey visit, a male and female were both observed feeding three fledglings. A male was heard singing on the fifth visit in the same general area and was countersinging with a new male (Male No. 5) detected in the area during the sixth survey visit. The male was heard singing during seventh and eight survey visits in the same general area.

A single male (Male No. 3) was detected in the southwestern portion of the site, west of Steele Canyon Road, within riparian habitat located along Sweetwater River (Figure 4). No vireos were detected in this location during the first survey, but a male was heard singing from the area during the second through fifth survey visits. On the sixth survey visit, the male was heard countersinging with a new male (Male No. 6) detected in the area. The male was heard singing on the seventh survey visit and was heard countersinging with Male No. 6 during the eighth survey.

A single male (Male No. 4) was detected approximately150 feet north of the southwestern portion of the project site within the San Diego National Wildlife Refuge, which is also USFWS-designated critical habitat for the species (Figure 4). No vireos were detected in this location during the first or second survey visits, but a male was heard singing in the area during the third through eighth survey visits.

A vireo pair (Pair No. 2) was detected approximately 200 feet west of the project site within the San Diego National Wildlife Refuge, which is also USFWS-designated critical habitat for the species (Figure 4). A male was heard singing in the area during the first survey but was not detected during the second survey. A male was again heard singing in the same general area during the third through fifth survey visits. On the sixth survey, the male was heard singing west of the project site and an unbanded vireo, presumed to be the female, was observed foraging just beyond the property fence line. A male was heard singing within the same general area west of the project site during the seventh and eighth surveys.

A single male (Male No. 5) was detected along the southern project boundary, to the east of Steele Canyon Road, within riparian habitat associated within a previously excavated area created during previous extraction activities (Figure 4). The male was first heard singing during the sixth survey visit within the western portion of the habitat patch and was countersinging with the male from Pair No. 1. The male was detected on the seventh and eighth survey visits singing within the eastern portion of the habitat patch, approximately 700 feet east of where Pair No. 1 was observed. The male was visually identified during the eighth survey visit and did not contain any bands.

A single male (Male No. 6) was detected in the southwestern portion of the project site, within riparian habitat located along Sweetwater River (Figure 4). The male was first heard singing during the sixth survey visit and was countersinging with Male No. 3. The male was not detected during the seventh survey, but was heard singing in the same general area during the eighth survey at the same time Male No. 3 was singing to the west. Male No. 6 was detected approximately 490 feet east of the location where Male No. 3 was detected.

The brown-headed cowbird (*Molothrus ater*; BHCO), a nest parasite of the LBVI, was detected during six of the eight surveys in several locations (Figure 4). Observations of BHCO included singing males, calling females, and multiple individuals observed in courtship displays.

CERTIFICATION

We certify that the information in this survey report and attached exhibits fully and accurately represents our work. Please contact Shelby Howard or us at (619) 462-1515 should you have any questions.

Sincerely,

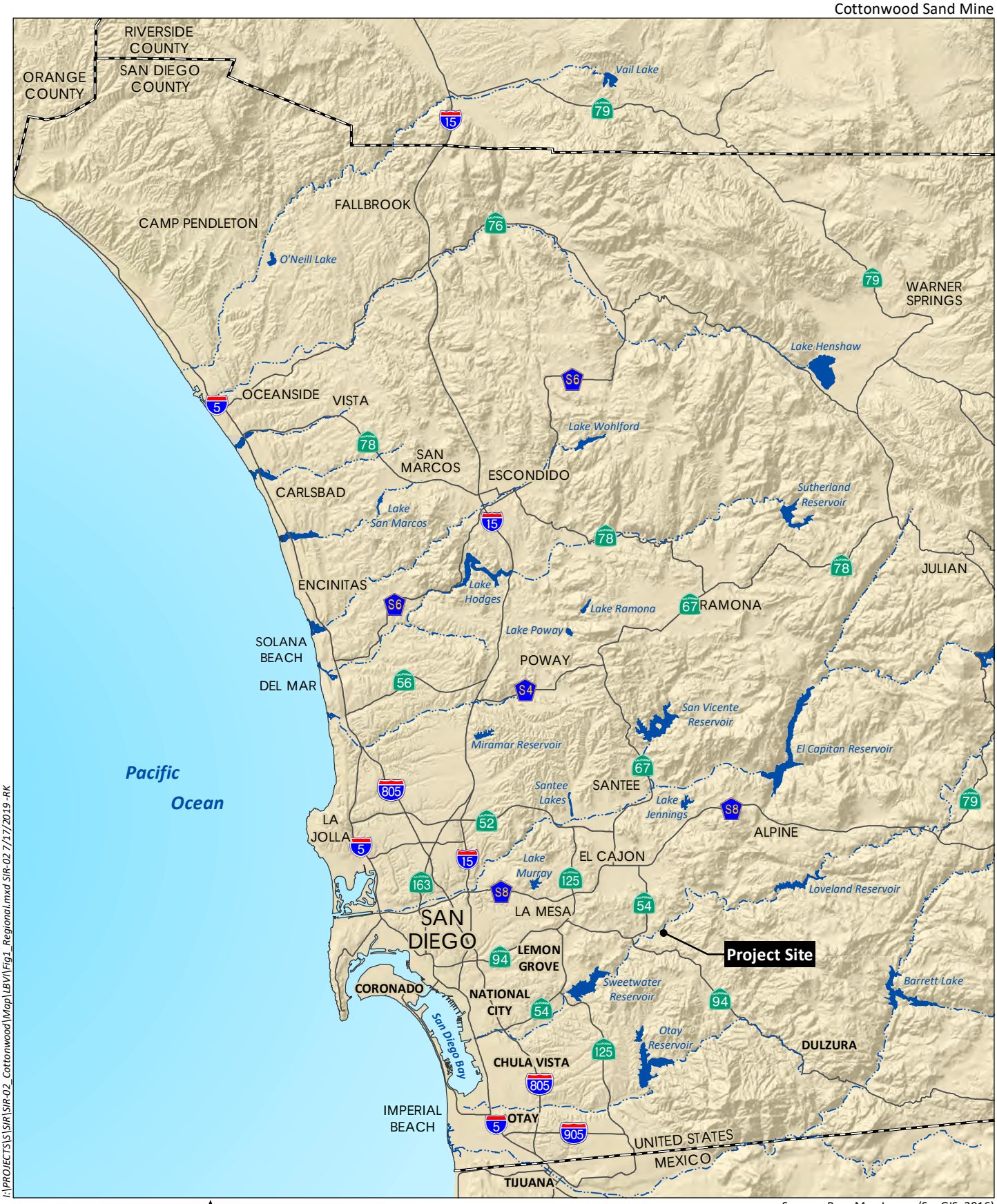
Erica Harris
Biologist

Dane van Tamelen
Biologist

Stacy Nigro
Principal Biologist

Attachments:

Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Aerial Vicinity
Figure 4: 2019 Least Bell's Vireo Survey Results



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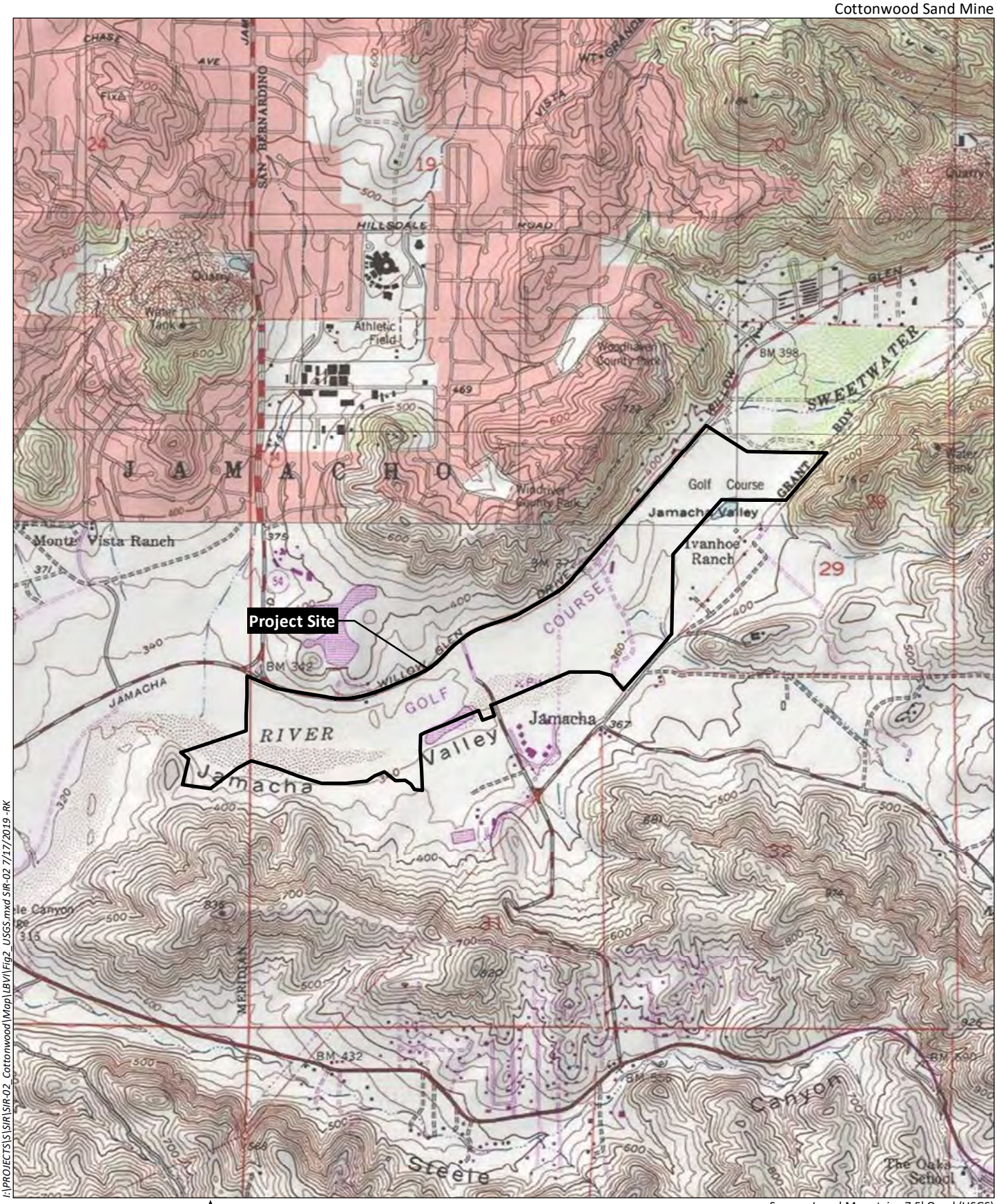
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



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Source: Jamul Mountains 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2

Source: Aerial (SanGIS 2017); NWR (U.S. Fish and Wildlife Service 2016)

HELIX Environmental Planning

Aerial Vicinity

Figure 3

Cottonwood Sand Mine

Project Site
Least Bell's Vireo Critical Habitat

Least Bell's Vireo (*Vireo bellii pusillus*) Sightings

- Male No. 1
- Male No. 2
- Male No. 3
- Male No. 4
- Male No. 5
- Male No. 6
- Pair No. 1
- Pair No. 2

Brown-headed Cowbird (*Molothrus ater*)

- Location

Least Bell's Vireo Habitat

- Freshwater Marsh
- Mule Fat Scrub
- Southern Willow Scrub
- Southern Willow Scrub - Disturbed
- Southern Cottonwood-willow Riparian Forest
- Southern Cottonwood-willow Riparian Forest - Disturbed
- Open Water
- Arundo-dominated Riparian
- Tamarisk Scrub

Male No. 1
4/16/19 - Male
4/30/19 - Not Detected
5/15/19 - Male
5/30/19 - Male
6/11/19 - Male
6/21/19 - Male
7/1/19 - Male
7/15/19 - Male

Male No. 2
4/16/19 - Male
4/30/19 - Male
5/15/19 - Male
5/30/19 - Male
6/11/19 - Male
6/21/19 - Male
7/1/19 - Male
7/15/19 - Male

Male No. 4
4/16/19 - Not Detected
4/30/19 - Not Detected
5/15/19 - Male
5/30/19 - Male
6/11/19 - Male
6/21/19 - Male
7/1/19 - Male
7/15/19 - Male

Pair No. 2
4/16/19 - Male
4/30/19 - Not Detected
5/15/19 - Male
5/30/19 - Male
6/11/19 - Male
6/21/19 - Pair
7/1/19 - Male
7/15/19 - Male

Pair No. 1
4/16/19 - Not Detected
4/30/19 - Not Detected
5/15/19 - Male
5/30/19 - Pair with 3 fledglings
6/11/19 - Male
6/21/19 - Male
7/1/19 - Male
7/15/19 - Male

Male No. 5
4/16/19 - Not Detected
4/30/19 - Not Detected
5/15/19 - Not Detected
5/30/19 - Not Detected
6/11/19 - Not Detected
6/21/19 - Male
7/1/19 - Male
7/15/19 - Male

Male No. 3
4/16/19 - Not Detected
4/30/19 - Male
5/15/19 - Male
5/30/19 - Male
6/11/19 - Male
6/21/19 - Male
7/1/19 - Male
7/15/19 - Male

Male No. 6
4/16/19 - Not Detected
4/30/19 - Not Detected
5/15/19 - Not Detected
5/30/19 - Not Detected
6/11/19 - Not Detected
6/21/19 - Male
7/1/19 - Not Detected
7/15/19 - Male

Seca Street
Sonett Street
Wind River Road
Willow Glen Drive
Jamacha Road
Sweetwater River
Steele Canyon Road
Heatherwood Drive
Par Four Drive
Ivanhoe Ranch Road
Cottonwood Springs Lane
Indian Mills Lane
Jamul Drive
Greystone Drive

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0 700 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

2019 Least Bell's Vireo Survey Results

Figure 4

Appendix D

Southwestern Willow Flycatcher Survey Report

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 tel
619.462.0552 fax
www.**helixepi**.com

August 23, 2019 SIR-02

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Subject: 2019 Southwestern Willow Flycatcher (*Empidonax traillii extimus*) Survey Report for the Cottonwood Sand Mine Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey for the federally listed southwestern willow flycatcher (*Empidonax traillii extimus*; SWFL) conducted by HELIX Environmental Planning, Inc. (HELIX) for the Cottonwood Sand Mine Project (project). This report describes the methods used to perform the survey and the results. It is being submitted to the USFWS as a condition of HELIX's Threatened and Endangered Species Permit TE-778195-13.

PROJECT LOCATION

The approximately 277-acre project site (site) is located in the unincorporated communities of Rancho San Diego and Jamul in eastern San Diego County, California (Figure 1, *Regional Location*). It is depicted within unsectioned lands of Township 16 South, Ranges 1 west and 1 east of the Jamul Mountains and El Cajon, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 2, *USGS Topography*). The site lies north of State Route (SR) 94 and east of SR 54 within the Cottonwood Golf Club. More specifically, the site is located at the Cottonwood Golf Club to the southeast of Willow Glen Drive, north of Jamul Drive, east of Jamacha Road, and west of Hillsdale Road at 3121 Willow Glen Dr., El Cajon, California (Figure 3, *Aerial Vicinity*). Steele Canyon Road bisects the project site from north to south, near the center of the site.

No USFWS-designated critical habitat for the species occurs on site but is present immediately west of the site within the San Diego National Wildlife Refuge (Figure 4, *2019 Southwestern Willow Flycatcher Survey Results*).

METHODS

The survey consisted of five site visits conducted by HELIX biologist Erica Harris (TE-778195-13) in accordance with the current USFWS approved survey protocol[1]. The SWFL survey area consisted of approximately 20.7 acres of potential SWFL habitat composed of open water, freshwater marsh, mule fat scrub, tamarisk scrub, arundo-dominated riparian, southern willow scrub (including disturbed), and southern cottonwood-willow riparian forest (including disturbed) located along Sweetwater River and within a lower-lying depressional area created during previous extraction activities (Figure 4).

Survey protocol requires that five survey visits be conducted at least five days apart, between the hours of sunrise and 10:30 a.m., within the three specified survey periods. One survey was conducted between Survey Period 1 (May 15–31), two surveys were conducted during Survey Period 2 (June 1–24), and one survey was conducted during Survey Period 3 (June 25–July 17).

The surveys were conducted by walking within and along the perimeter of suitable SWFL habitat. Surveys were conducted with binoculars to aid in bird detection. Recorded SWFL vocalizations were played every 20 to 30 meters (65 to 98 feet) followed by a one-minute silent period to listen for a response. The survey route was arranged to ensure complete survey coverage of habitat with potential for occupancy by SWFL. Suitable habitat directly adjacent to the project site was passive surveyed from the edge of the project boundary and was not directly accessed.

The surveys were conducted on the same dates as HELIX's protocol surveys for the least Bell's vireo (*Vireo bellii pusillus*; LBVI). The survey times reflect the same survey times for each species, but the surveys were not conducted concurrently. Larger or linear stretches of riparian habitat were surveyed sequentially. The surveyor surveyed for SWFL as they walked one direction along/within suitable SWFL habitat, and then surveyed for LBVI as they walked back the other direction. For smaller patches of habitat in the eastern portion of the site, Ms. Harris broadcasted SWFL vocalizations during the SWFL surveys and conducted a passive observation period for the SWFL. After the passive observation period for the SWFL was completed, a second passive observation period for the LBVI was conducted. The exception to this was the fifth site visit when a second HELIX biologist (Stacy Nigro) conducted the least Bell's vireo survey while Ms. Harris conducted the SWFL survey. A separate survey report is being submitted for the LBVI survey effort (HELIX in preparation).

Table 1, *Survey Information*, details the survey dates, times, and conditions.

[1] Sogge, Mark K., Ahlers, Darrell, and Sferra, Susan J. 2010. A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher: U.S. Geological Survey Techniques and Methods 2A-10.

Table 1
SURVEY INFORMATION

Survey Period[1]	Site Visit	Survey Date	Biologist	Start/Stop Time	Approx. Acres Surveyed/ Acres Per Hour	Start/Stop Weather Conditions	Survey Results
1	1	5/30/19	Erica Harris	0645/1030	20.7 ac/ 5.4 ac per hr.	61°F, wind 0-1 mph, 100% clouds 72°F, wind 0-2 mph, 0% clouds	No flycatchers observed
2	2	6/11/19	Erica Harris	0620/1020	20.7 ac/ 5.2 ac per hr.	61°F, wind 0-1 mph, 0% clouds 82°F, wind 0-3 mph, 0% clouds	No flycatchers observed
2	3	6/21/19	Erica Harris	0630/1030	20.7 ac/ 5.2 ac per hr.	62°F, wind 0-1 mph, 100% clouds 71°F, wind 1-3 mph, 100% clouds	No flycatchers observed
3	4	7/1/19	Erica Harris	0640/1030	20.7 ac/ 5.4 ac per hr.	58°F, wind 0-1 mph, 0% clouds 78°F, wind 1-3 mph, 0% clouds	No flycatchers observed
3	5	7/15/19	Erica Harris	0640/1030	20.7 ac/ 5.4 ac per hr.	59°F, wind 0-1 mph, 0% clouds 86°F, wind 0-1 mph, 0% clouds	No flycatchers observed

[1] Survey Period 1 (May 15–31), Survey Period 2 (June 1–24), Survey Period 3 (June 25–July 17).

SURVEY RESULTS

No southwestern willow flycatchers were detected during the survey effort (Figure 4). A Willow Flycatcher Survey and Detection Form was completed and is included as Attachment A, *Willow Flycatcher Survey and Detection Form*.

CERTIFICATION

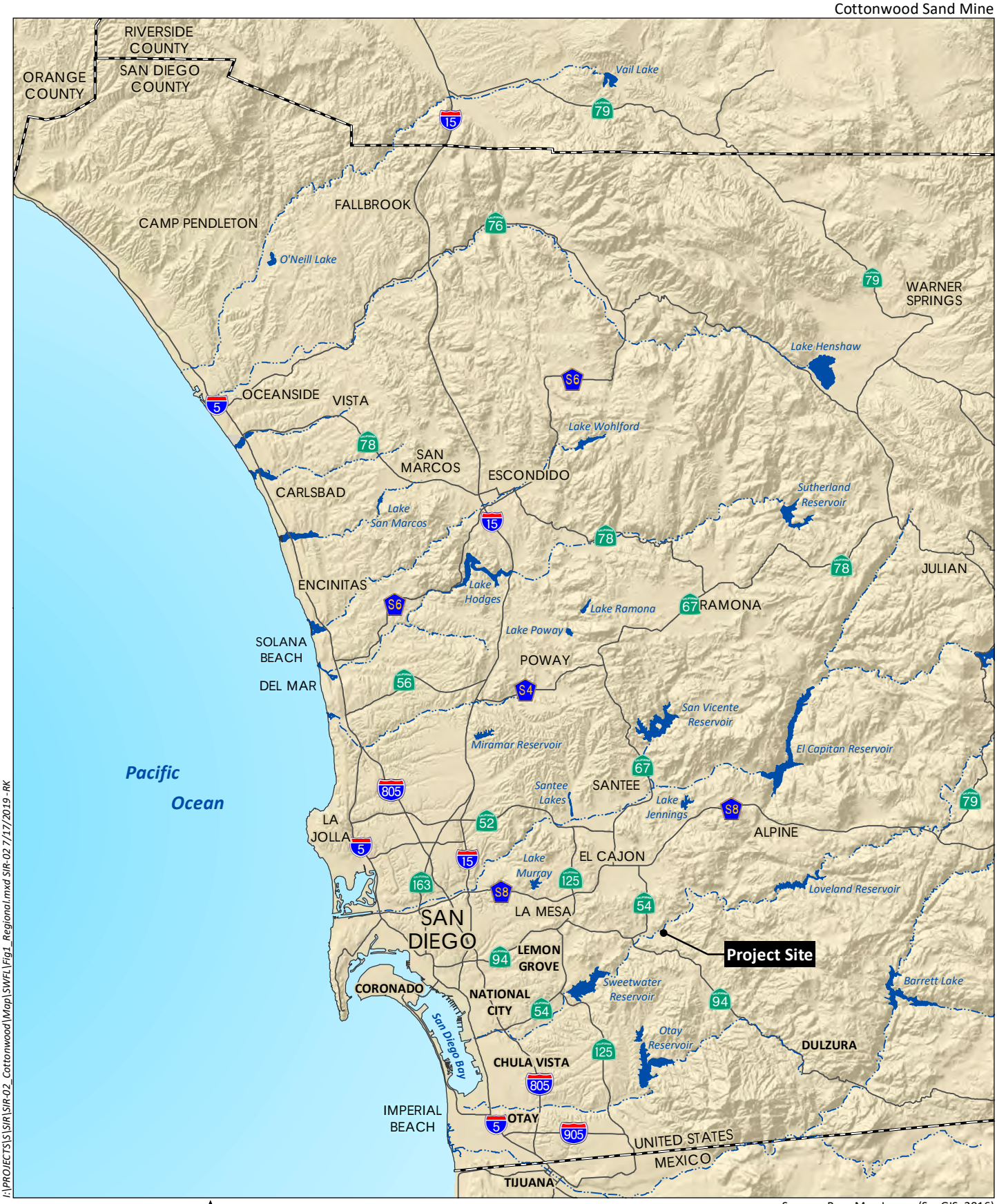
I certify that the information in this survey report and attached exhibits fully and accurately represents our work. Please contact Shelby Howard or Erica Harris at (619) 462-1515 should you have any questions.

Sincerely,

Erica Harris
Biologist

Attachments:

Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Aerial Vicinity
Figure 4: 2019 Southwestern Willow Flycatcher Survey Results
Attachment A: Willow Flycatcher Survey and Detection Form



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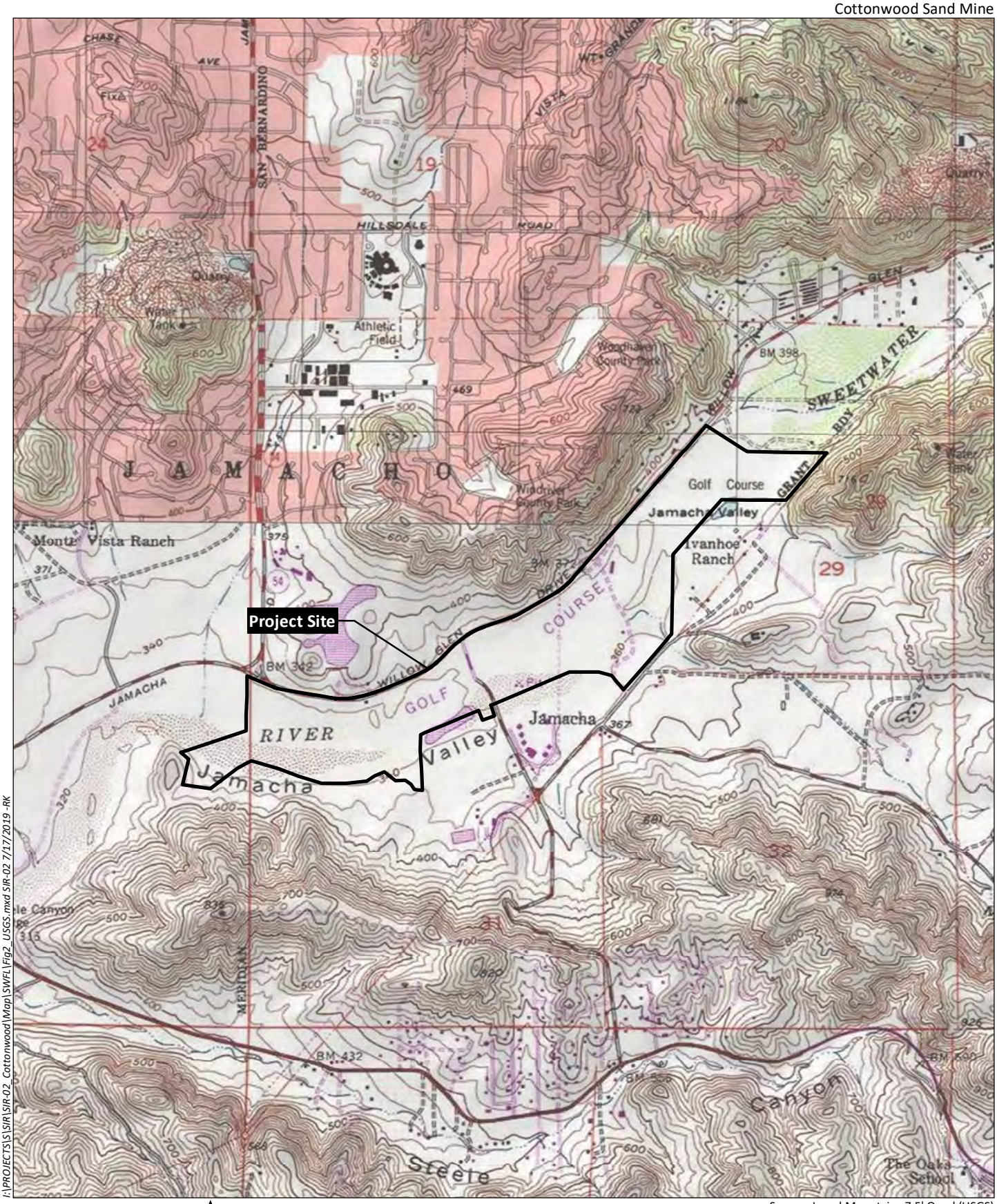
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



I:\PROJECTS\S\SIR\SIR-02_Cottonwood\Map\SWFL\Fig2_USGS.mxd SIR-02 7/17/2019 -RK

0 2,000 Feet

Source: Jamul Mountains 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2

Cottonwood Sand Mine

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0 2,000 Feet

Source: Aerial (SanGIS 2017); NWR (U.S. Fish and Wildlife Service 2016)

HELIX Environmental Planning

Aerial Vicinity

Figure 3

Cottonwood Sand Mine

Project Site
San Diego National Wildlife Refuge
Southwestern Willow Flycatcher Critical Habitat

Southwestern Willow Flycatcher Habitat*

Freshwater Marsh
Mule Fat Scrub
Southern Willow Scrub
Southern Willow Scrub - Disturbed
Southern Cottonwood-willow Riparian Forest
Southern Cottonwood-willow Riparian Forest - Disturbed
Open Water
Arundo-dominated Riparian
Tamarisk Scrub

**The Southwestern Willow Flycatcher was not detected during the 2019 protocol-level survey effort.*

Jamacha Way
Seca Street
Sonett Street
Wind River Road
Brabham Street
Hilton Head Road
Willow Glen Drive
Sweetwater River
Jamacha Road
Heatherwood Drive
Steele Canyon Road
Par Four Drive
Ivanhoe Ranch Road
Cottonwood Springs Lane
Indian Mills Lane
Jamul Drive
Greystone Drive

I:\PROJECTS\S\SIR\SIR-02_Cottonwood\Map\SWFL\Fig4_SWFL.mxd SIR-02 8/15/2019 -RK

0 700 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

2019 Southwestern Willow Flycatcher Survey Results

Figure 4

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

Site Name: **Cottonwood Sand Mine** State: **CA** County: **San Diego**

USGS Quad Name: **Jamul Mountains/El Cajon** Elevation: **106** (meters)

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

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

Survey Coordinates: Start: E **508880** N **3624008** UTM Datum: **WSG84** (See instructions)

Stop: E **506669** N **3622558** UTM Zone: **11N**

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: 5/30/2019	0	0	0	N	n/a	# Birds	Sex	UTM E	UTM N
Observer(s): Erica Harris	Start: 6:45									
	Stop: 10:30									
	Total hrs: 3.75									
Survey # 2	Date: 6/11/2019	0	0	0	N	n/a	# Birds	Sex	UTM E	UTM N
Observer(s): Erica Harris	Start: 6:20									
	Stop: 10:20									
	Total hrs: 4.0									
Survey # 3	Date: 6/21/2019	0	0	0	N	n/a	# Birds	Sex	UTM E	UTM N
Observer(s): Erica Harris	Start: 6:30									
	Stop: 10:30									
	Total hrs: 4.0									
Survey # 4	Date: 7/1/2019	0	0	0	N	n/a	# Birds	Sex	UTM E	UTM N
Observer(s): Erica Harris	Start: 6:40									
	Stop: 10:30									
	Total hrs: 3.83									
Survey # 5	Date: 7/15/2019	0	0	0	N	n/a	# Birds	Sex	UTM E	UTM N
Observer(s): Erica Harris	Start: 6:40									
	Stop: 10:30									
	Total hrs: 3.83									

Overall Site Summary	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any WIFLs color-banded? Yes ____ No ____
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.	0	0	0	0	If yes, report color combination(s) in the comments section on back of form and report to USFWS.
Total survey hrs: 19.4					

Reporting Individual: **Erica Harris** Date Report Completed: **8/23/2019**

US Fish & Wildlife Service Permit #: **TE-778195-13** State Wildlife Agency Permit #: ____

***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: **Erica Harris** Phone #: **619-462-1515**

Affiliation: **HELIX Environmental Planning, Inc.** E-mail: EricaH@helixepi.com

Site Name: **Cottonwood Sand Mine** Date report Completed: **8/23/2019**

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 ____ Not Applicable **X**

If name is different, what name(s) was used in the past? **N/A**

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 ____ Municipal/County ____ State ____ Tribal ____ Private **X**

Name of Management Entity or Owner (e.g., Tonto National Forest) **Cottonwood Cajon ES, LLC.**

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)

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

____ 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.

Salix gooddingii, *Populus fremontii*, *Tamarix* sp.

Average height of canopy (Do not include a range): **4.5** (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.

Project site is an active golf course (Cottonwood Golf Club). Riparian habitat previously disturbed by previous extraction activities, with portions in the southwest dominated by salt cedar (*Tamarix* sp.).

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

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 tel
619.462.0552 fax
www.helixepi.com

August 24, 2022 02975.00002.002

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Subject: 2022 Southwestern Willow Flycatcher (*Empidonax traillii extimus*) Survey Report for the Cottonwood Sand Mine Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey for the federally listed southwestern willow flycatcher (*Empidonax traillii extimus*; SWFL) conducted by HELIX Environmental Planning, Inc. (HELIX) for the Cottonwood Sand Mine Project (project). This report describes the methods used to perform the survey and the results. It is being submitted to the USFWS as a condition of HELIX's Threatened and Endangered Species Permit TE-778195-14.

PROJECT LOCATION

The approximately 280-acre project site (site) is located in the unincorporated community of Rancho San Diego in eastern San Diego County, California (Figure 1, *Regional Location*). It is depicted within unsectioned lands of Township 16 South, Ranges 1 West and 1 East of the Jamul Mountains and El Cajon, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 2, *USGS Topography*). The site lies north of State Route (SR) 94 and east of SR 54 within the Cottonwood Golf Club. More specifically, the site occurs southeast of Willow Glen Drive, north of Jamul Drive, east of Jamacha Road, and west of Hillsdale Road at 3121 Willow Glen Drive, El Cajon, California (Figure 3, *Aerial Photograph*). Steele Canyon Road bisects the project site from north to south, near the center of the site.

No USFWS-designated critical habitat for the species occurs within the project site but is present immediately west of the site within the San Diego National Wildlife Refuge (Figure 3).

METHODS

HELIX biologist Erica Harris (TE-778195-14) performed the survey, which consisted of five site visits between May 26 and July 13, 2022 (Table 1, *Survey Information*), in accordance with the current USFWS approved survey protocol[1]. Survey protocol requires that five survey visits be conducted at least five days apart, between the hours of sunrise and 10:30 a.m., within the three specified survey periods. One survey was conducted between Survey Period 1 (May 15 through 31), two surveys were conducted during Survey Period 2 (June 1 through 24), and one survey was conducted during Survey Period 3 (June 25 through July 17). Biologists surveyed approximately 26.2 acres of potential SWFL habitat composed of mule fat scrub, tamarisk scrub, arundo-dominated riparian, southern willow scrub (including disturbed), and southern cottonwood-willow riparian forest (including disturbed) located along Sweetwater River and within a lower-lying depressional area created during previous extraction activities (Figure 4, *2022 Southwestern Willow Flycatcher Survey Results*).

The surveys were conducted by walking along the edges of, as well as within, suitable SWFL habitat in the project site while listening for SWFL and viewing birds with the aid of binoculars. HELIX did not enter the portions of the survey area that occurred on private property. Recorded SWFL vocalizations were played every 20 to 30 meters (65 to 98 feet), followed by a one-minute silent period to listen for a response. The survey route was arranged to ensure complete survey coverage of habitat with potential for occupancy by SWFL. Suitable habitat directly adjacent to the project site was passively surveyed from the edge of the project boundary and was not directly accessed.

Table 1, *Survey Information*, details the survey dates, times, and conditions.

Table 1
SURVEY INFORMATION

Survey Period[1]	Site Visit	Survey Date	Biologist	Start/Stop Time	Approx. Acres Surveyed/ Acres Per Hour	Start/Stop Weather Conditions
1	1	05/26/22	Erica Harris[2] Mandy Mathews[3]	0645/1030	26.2 ac/ 7.2 ac per hr.*	58°F, wind 0-1 mph, 100% clouds 71°F, wind 1-3 mph, 0% clouds
2	2	06/06/22	Erica Harris Stacy Nigro[3]	0630/1030	26.2 ac/ 6.6 ac per hr.	62°F, wind 0-1 mph, 100% clouds 74°F, wind 1-3 mph, 0% clouds
2	3	06/16/22	Erica Harris Kristina Beck[3]	0630/1030	26.2 ac/ 6.6 ac per hr.	61°F, wind 0-1 mph, 0% clouds 71°F, wind 2-4 mph, 0% clouds
3	4	07/05/22	Erica Harris Kristina Beck[3]	0615/1030	26.2 ac/ 6.2 ac per hr.	64°F, wind 0-2 mph, 85% clouds 76°F, wind 0-1 mph, 10% clouds
3	5	07/13/22	Erica Harris Laura Moreton[3]	0715/1030	26.2 ac/ 8.1 ac per hr.	64°F, wind 0-1 mph, 100% clouds 70°F, wind 1-4 mph, 0% clouds

[1] Survey Period 1 (May 15–31), Survey Period 2 (June 1–24), Survey Period 3 (June 25–July 17).
[2] USFWS Permit TE 778195-14.
[3] Supervised Individual.
*ac – acre; hr – hour

[1] Sogge, Mark K., Ahlers, Darrell, and Sferra, Susan J. 2010. A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher: U.S. Geological Survey Techniques and Methods 2A-10.

SURVEY RESULTS

No southwestern willow flycatchers were detected during the survey effort (Figure 4).

CERTIFICATION

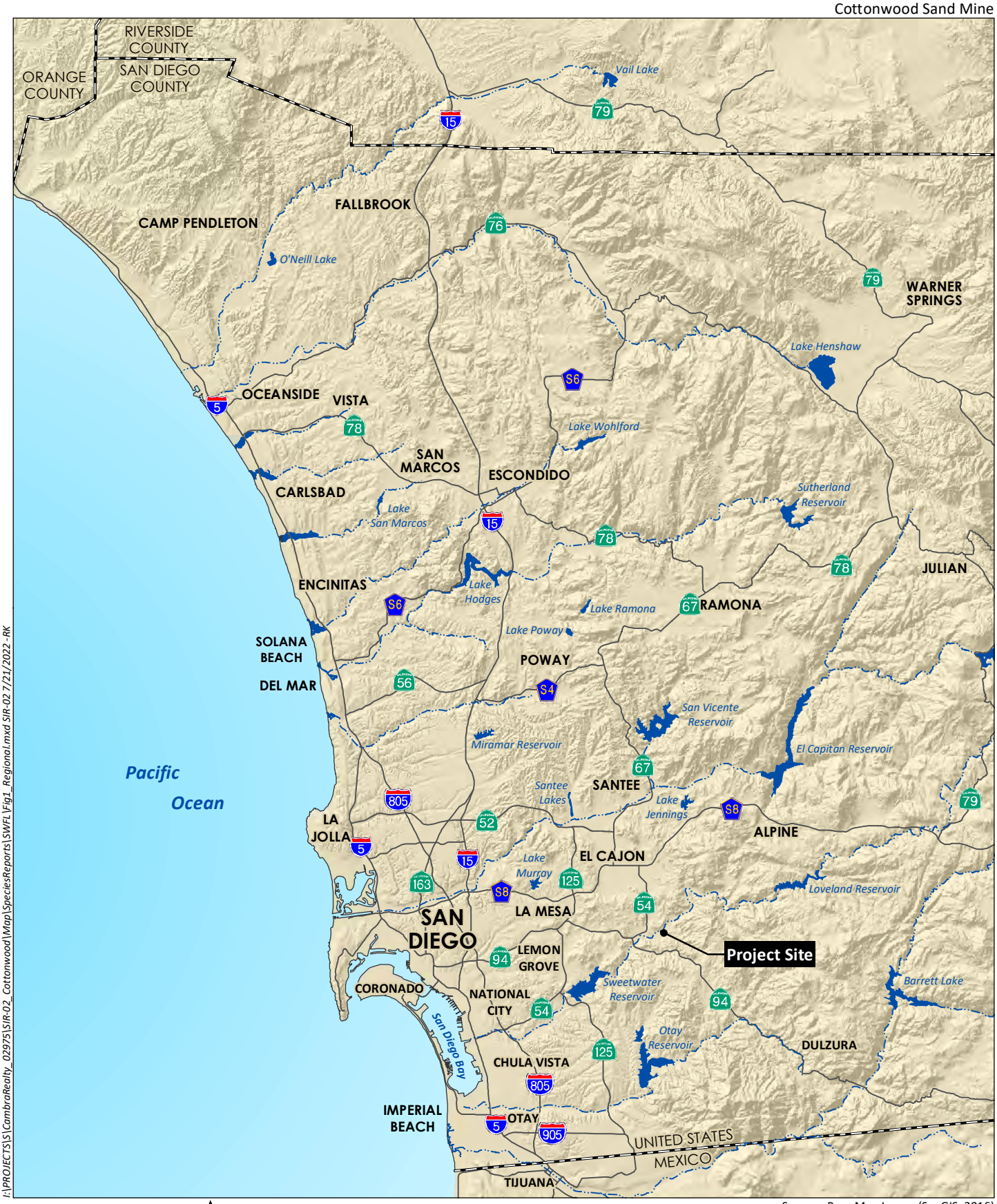
I certify that the information in this survey report and attached exhibits fully and accurately represents our work. Please contact Erica Harris or Shelby Howard at (619) 462-1515 if you have any questions.

Sincerely,

Erica Harris
Senior Scientist

Attachments:

Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Aerial Photograph
Figure 4: 2022 Southwestern Willow Flycatcher Survey Results



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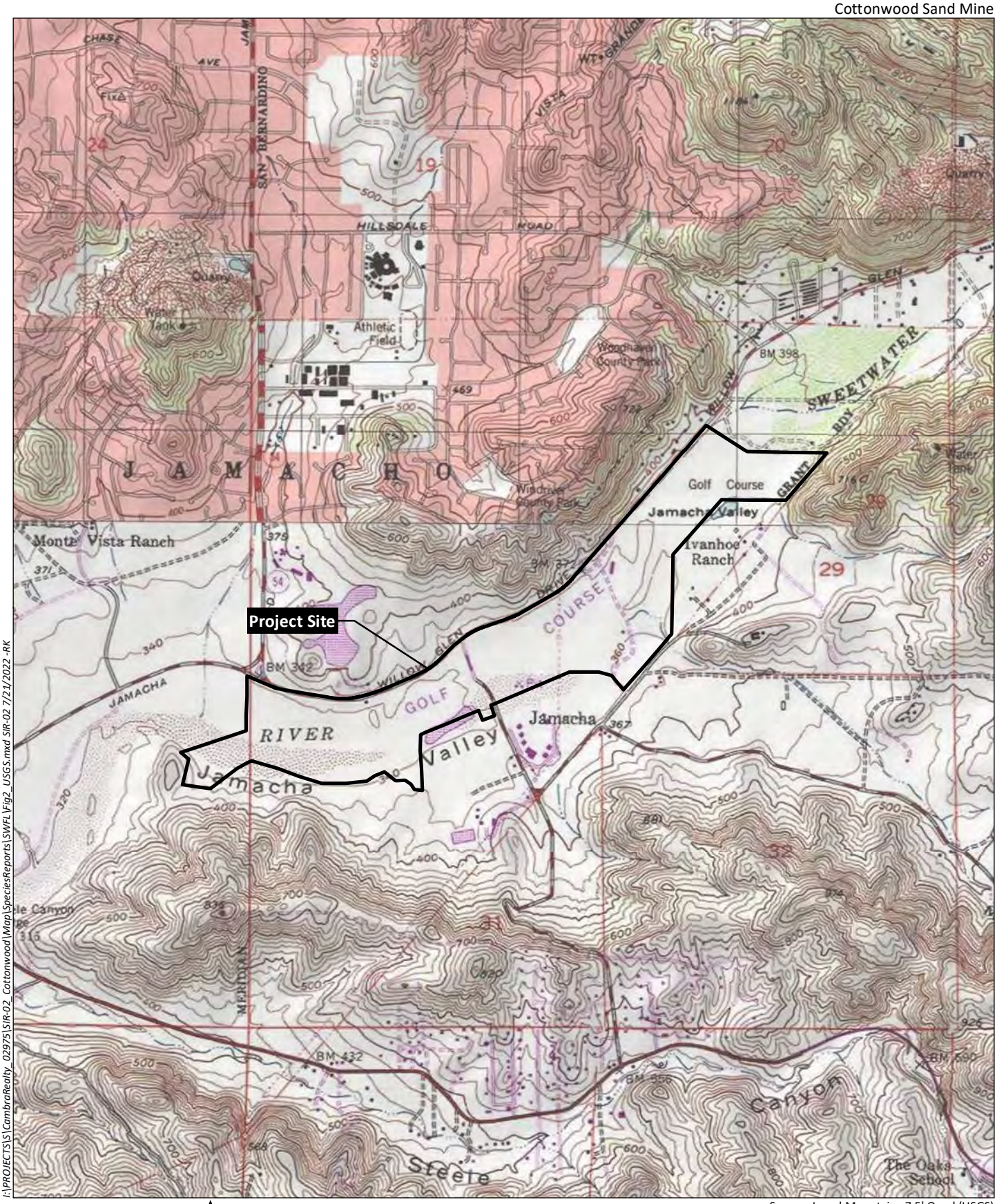
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



0 2,000 Feet

Source: Jamul Mountains 7.5' Quad (USGS)

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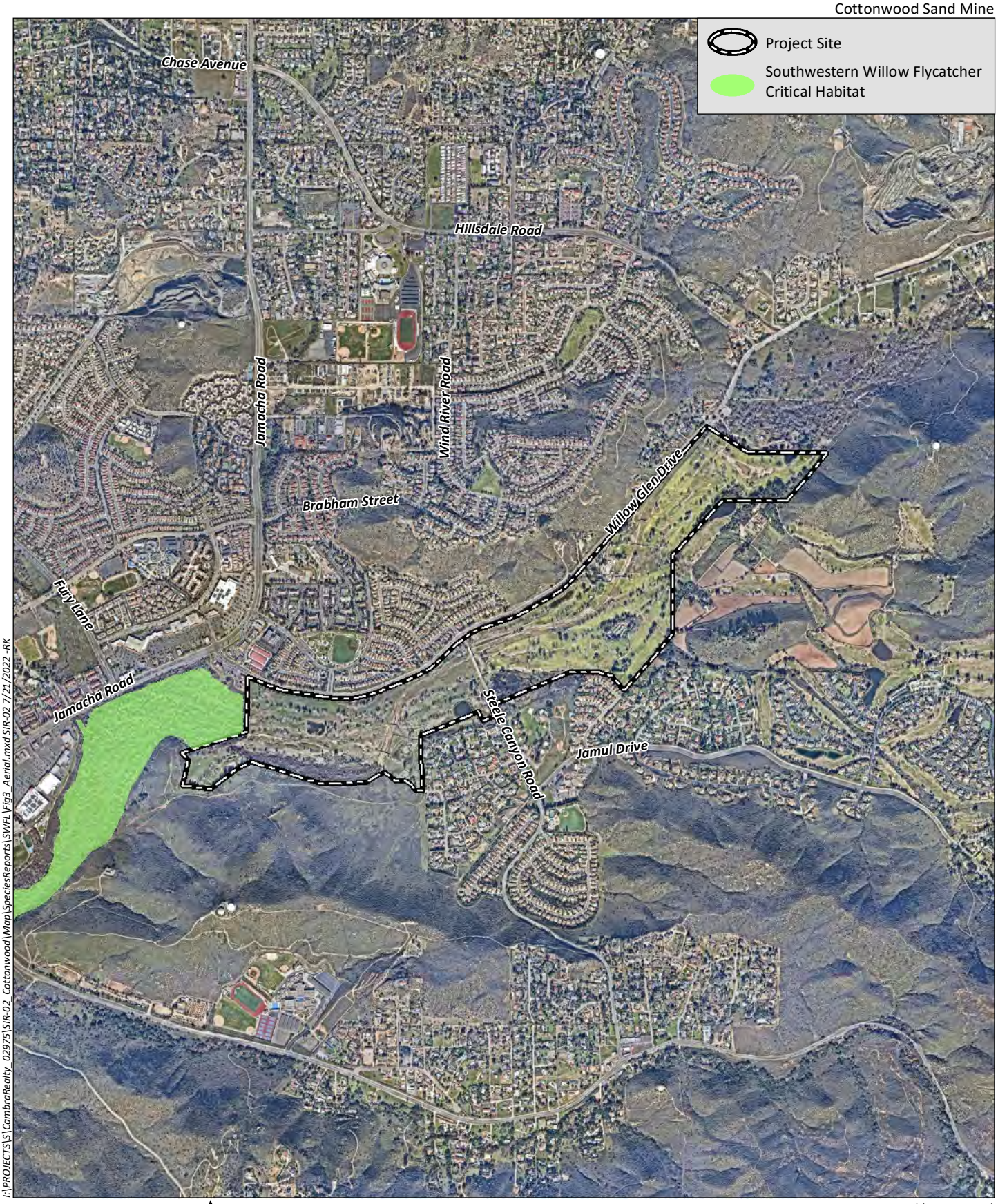
HELIX Environmental Planning

USGS Topography

Figure 2



Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

Aerial Vicinity

Figure 3

Cottonwood Sand Mine

Project Site

100-ft Buffer

Southwestern Willow FLycatcher Habitat*

Southern Cottonwood-willow Riparian Forest

Southern Cottonwood-willow Riparian Forest - Disturbed

Southern Willow Scrub - Disturbed

Arundo-dominated Riparian

Tamarisk Scrub

**Southwestern willow flycatcher was not detected during 2022 protocol-level survey effort.*

Jamacha Way
Seca Street
Sonett Street
Wind River Road
Brabham Street
Hilton Head Road
Via Rancho San Diego
Jamacha Road
Willow Glen Drive
Ivanhoe Ranch Road
Cottonwood Springs Lane
Indian Mills Lane
Jamul Drive
Greystone Drive
Heatherwood Drive
Steele Canyon Road
Par Four Drive

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0 700 Feet

N

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

2022 Southwestern Willow Flycatcher Survey Results

Figure 4

Appendix E

Coastal California Gnatcatcher Survey Report

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 tel
619.462.0552 fax
www.helixepi.com

August 19, 2022 02975.00002.002

Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Subject: 2022 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for the Cottonwood Sand Mine Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey for the federally listed as threatened coastal California gnatcatcher (*Polioptila californica californica*; CAGN) conducted by HELIX Environmental Planning, Inc. (HELIX) for the Cottonwood Sand Mine Project (project). This report describes the methods used to perform the survey and the results. It is being submitted to the USFWS as a condition of HELIX's Threatened and Endangered Species Permit TE778195-14.

PROJECT LOCATION

The approximately 280-acre project site (site) is located in the unincorporated community of Rancho San Diego in eastern San Diego County, California (Figure 1, *Regional Location*). It is depicted within unsectioned lands of Township 16 South, Ranges 1 west and 1 east of the Jamul Mountains and El Cajon, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 2, *USGS Topography*). The site lies north of State Route (SR) 94 and east of SR 54 within the Cottonwood Golf Club. More specifically, the site occurs southeast of Willow Glen Drive, north of Jamul Drive, east of Jamacha Road, and west of Hillsdale Road at 3121 Willow Glen Drive, El Cajon, California (Figure 3, *Aerial Vicinity*). Steele Canyon Road bisects the project site from north to south, near the center of the site.

USFWS-designated critical habitat for the species occurs within the extreme southwestern portion of the project site and continues off site to the west and south within the San Diego National Wildlife Refuge (Figure 3).

METHODS

The survey consisted of three visits that were performed by HELIX biologist Erica Harris (TE 778195-14)

between June 23 and July 7, 2022 (Table 1, *Survey Information*), in accordance with the current USFWS protocol[1]. The visits were conducted at least seven days apart, between the hours of 6 a.m. and 12 p.m., pursuant to survey protocol. Biologists surveyed approximately 10.5 acres suitable CAGN habitat located within the project site, and within 100 feet from the project site (Figure 4, *2022 Coastal California Gnatcatcher Survey Results*).

The surveys were conducted by walking within and along the perimeter of suitable CAGN habitat in the project site while listening for CAGN and viewing birds with the aid of binoculars. HELIX did not enter the portions of the survey area that occur on private property. Recorded CAGN vocalizations were played sparingly and only if other means of detection had failed. If a CAGN was detected before playing recorded vocalizations, the recordings were not played. Once CAGNs were initially detected in an area, the use of playback was discontinued. The survey route was arranged to ensure complete survey coverage of habitat with potential for occupancy by CAGN. Suitable habitat directly adjacent to the project site was passive surveyed from the edge of the project boundary and was not directly accessed. The approximate survey route is depicted on Figure 4.

Table 1 details the survey dates, times, and conditions.

Table 1
SURVEY INFORMATION

Site Visit	Survey Date	Biologist(s)	Start/Stop Time	Approx. Acres Surveyed/ Acres per Hour	Start/Stop Weather Conditions
1	06/23/22	Erica Harris[1] Kristina Beck[2]	0645/0915	10.5 ac/ 4.2 ac/hr*	66°F, wind 0-1 mph, 50% cloud cover 75°F, wind 1-3 mph, 85% cloud cover
2	06/30/22	Erica Harris[1] Alexander Walsh[2]	0640/0920	10.5 ac/ 4.0 ac/hr	65°F, wind 0-1 mph, 100% cloud cover 71°F, wind 2-5 mph, 0% cloud cover
3	07/07/22	Erica Harris[1] Alexander Walsh[2]	0645/0905	10.5 ac/ 4.6 ac/hr	64°F, wind 0-1 mph, 100% cloud cover 68°F, wind 2-61 mph, 0% cloud cover

[1] USFWS Permit TE 778195-14
[2] Supervised Individual
*ac – acre; hr – hour

COASTAL CALIFORNIA GNATCATCHER HABITAT

Diegan coastal sage scrub (including disturbed) was the only vegetation community within the project site determined to be suitable for CAGN (Figure 4).

Diegan Coastal Sage Scrub (including disturbed)

Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Diegan coastal sage scrub may be dominated by a variety of species depending upon soil type, slope, and aspect. Typical species found within Diegan

[1] U.S. Fish and Wildlife Service (USFWS). 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. 5pp.

coastal sage scrub include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasiculatum*), laurel sumac (*Malosma laurina*), lemonadeberry (*Rhus integrifolia*), white sage (*Salvia apiana*), and black sage (*Salvia mellifera*). Disturbed Diegan coastal sage scrub contains many of the same shrub species as undisturbed Diegan coastal sage scrub but is sparser and has a higher proportion of non-native, annual species.

Small patches of this habitat occur at the southeastern and southwestern project boundaries. These patches are connected to larger swaths of coastal sage scrub that occur off-site within preserved lands and open space. Dominant species include California sage brush, California buckwheat, Palmer's goldenbush (*Ericameria palmeri* var. *palmeri*), and broom baccharis (*Baccharis sarothroides*). Disturbed coastal sage scrub on-site occurs as narrow bands of habitat to the south of Willow Glen Drive at the northeastern boundary, and to the west of Steele Canyon Road along the southern boundary. These areas consist of scattered shrubs of California sagebrush and California buckwheat growing among planted non-native trees and woody debris deposited on the slopes.

RESULTS

A total of three male CAGN individuals, and one juvenile CAGN, were detected during the survey effort, although not all individuals were detected during each survey (Figure 4). Two single males (Male No. 1 and Male No. 2) were detected off-site to the southeast of the southeastern portion of the project site, and one male with juvenile (Male No. 3) was observed off-site to the southwest of the southwestern portion of the project site. A detailed description of the CAGN observations and locations from each weekly survey is included below.

A single male CAGN (Male No. 1) was detected off-site approximately 80 feet east of the southeastern portion of the project site during the first survey visit (Figure 4). The male was heard calling and upslope within the Diegan coastal sage scrub habitat located outside of the project boundary. The male was not detected during the second and third survey visits.

A second single male CAGN (Male No. 2) was detected approximately 100 feet off-site to the east of the southeastern portion of the project site during the first survey visit (Figure 4). The male was heard calling upslope within the Diegan coastal sage scrub habitat located outside of the project boundary. A second gnatcatcher was also heard calling in the area but was not visually identified. The second gnatcatcher may have been the same individual as Male No. 1, a female, or a juvenile. The male was not detected during the second and third survey visits.

A male CAGN (Male No. 3) was detected approximately 65 feet off-site to the southwest of the southwestern portion of the project site during the third survey visit (Figure 4). The male was observed foraging with and feeding a juvenile within Diegan coastal sage scrub habitat located outside of the project boundary. This habitat is located within the USFWS San Diego National Wildlife Refuge and within USFWS designated critical habitat for the species. Neither the male or juvenile was not detected during the first and second survey visits.

CERTIFICATION

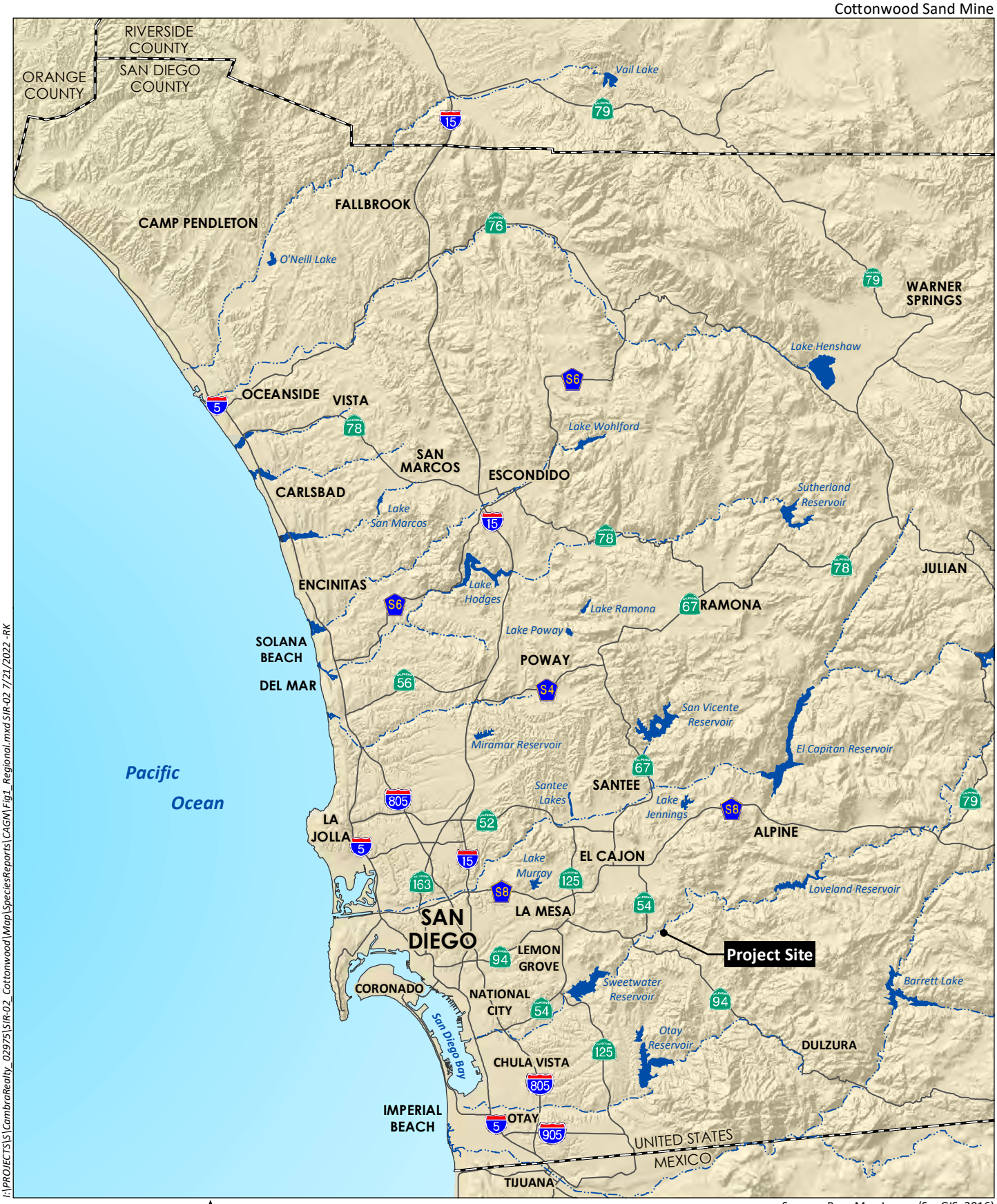
I certify that the information in this survey report and enclosed exhibit fully and accurately represent our work. Please contact Erica Harris or Shelby Howard at (619) 462-1515 if you have any questions.

Sincerely,

Erica Harris
Senior Scientist

Attachments:

Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Aerial Vicinity
Figure 4: 2022 Coastal California Gnatcatcher Survey Results



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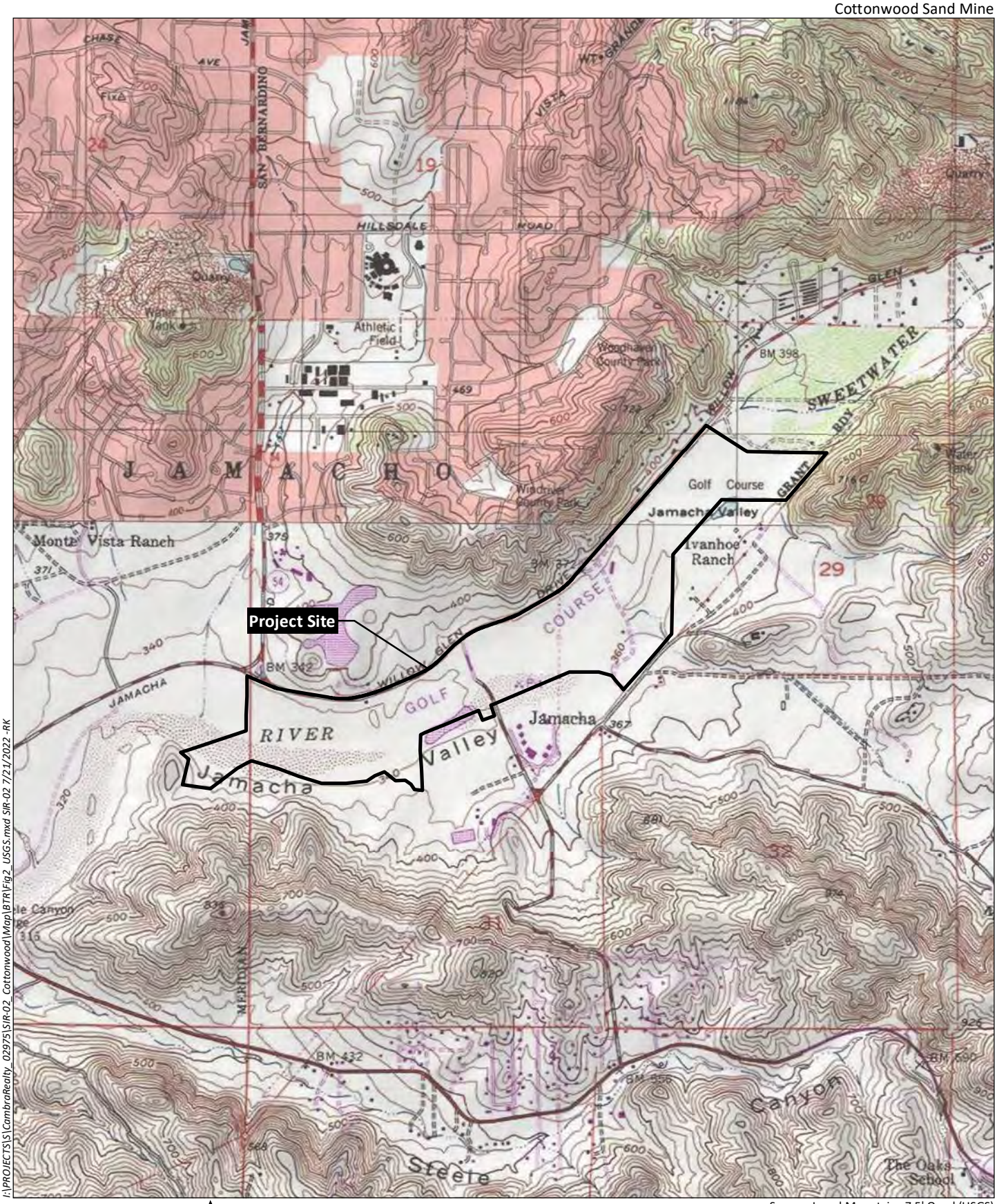
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



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0 2,000 Feet

Source: Jamul Mountains 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

Aerial Vicinity

Figure 3

Cottonwood Sand Mine

Project Site
100-ft Buffer
Survey Route
Coastal California Gnatcatcher Critical Habitat

Coastal California Gnatcatcher Habitat

Diegan Coastal Sage Scrub
Diegan Coastal Sage Scrub - Disturbed

Coastal California Gnatcatcher Sightings

Male No. 1
Male No. 2
Male No. 3

Male No. 2
6/23/22 - Male calling (second gnatcatcher heard calling nearby)
6/30/22 - Not detected
7/7/22 - Not detected

Male No. 1
6/23/22 - Male calling
6/30/22 - Not detected
7/7/22 - Not detected

Male No. 3
6/23/22 - Not detected
6/30/22 - Not detected
7/7/22 - Male calling and foraging with juvenile

Jamacha Way
Seca Street
Wind River Road
Brabham Street
Hilton Head Road
Via Rancho San Diego
Willow Glen Drive
Ivanhoe Ranch Road
Cottonwood Springs Lane
Indian Mills Lane
Jamul Drive
Greystone Drive
Heatherwood Drive
Steele Canyon Road
Par Four Drive

0 700 Feet

Source: Aerial (SanGIS 2019)

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HELIX Environmental Planning

2022 Coastal California Gnatcatcher Survey Results

Figure 4

Appendix F

Bat Survey Report

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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1.0 INTRODUCTION

This report presents the results of the 2022 bat surveys conducted by HELIX Environmental Planning, Inc. (HELIX) for the Cottonwood Sand Mine Project (project) located in the community of Rancho San Diego in eastern San Diego County, California. This letter describes the survey methods and results.

2.0 PROJECT LOCATION

The approximately 280-acre project site (site) is in the unincorporated community of Rancho San Diego in eastern San Diego County, California (Figure 1, *Regional Location*). It is depicted within unsectioned lands of Township 16 South, Ranges 1 West and 1 East of the Jamul Mountains and El Cajon, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 2, *USGS Topography*). The site lies north of State Route (SR) 94 and east of SR 54 within the Cottonwood Golf Club. More specifically, the site occurs southeast of Willow Glen Drive, north of Jamul Drive, east of Jamacha Road, and west of Hillsdale Road at 3121 Willow Glen Drive, El Cajon, California (Figure 3, *Aerial Photograph*). Steele Canyon Road bisects the project site from north to south, near the center of the site.

3.0 SURVEY METHODS

Bat surveys were conducted within the project site in May and July 2022 (Table 1, *Survey Information*). The surveys consisted of acoustic monitoring and a nighttime emergence survey following the methods described below. HELIX biologists Laura Moreton and Benjamin Rosenbaum conducted a habitat assessment during the first survey visit to evaluate and identify potential roosting and/or foraging habitat for bats present within the project site (e.g., abandoned buildings, water bodies, rock outcrops, etc.). The results of the habitat assessment informed the locations for the acoustic monitoring and emergence survey efforts.

Table 1
SURVEY INFORMATION

Date	Survey	Personnel	Conditions[1]
May 17, 2022	Habitat Assessment	Laura Moreton Benjamin Rosenbaum	--
May 17 to May 31, 2022	1 (Passive)	Laura Moreton Benjamin Rosenbaum Erica Harris	--
July 14 to 28, 2022	2 (Passive)	Laura Moreton Erica Harris	--
July 26, 2022	3 (Active)	Shawn Carroll Alexander Walsh	1850: 75°F, wind 3-8 mph, 10% cc 2050: 68°F, wind 2-5 mph, 0% cc

[1] °F = degrees Fahrenheit; mph = miles per hour; cc = cloud cover

3.1 ACOUSTIC MONITORING SURVEYS

Acoustic monitoring surveys were conducted over two separate two-week deployment periods between May 17 and July 28, 2022 (Table 1). AnaBat Express detectors were deployed at three locations within the project site, which were selected based on proximity to water (Figure 4, *Bat Survey Stations and*

Results). The locations of the detectors were recorded in the field with a hand-held Global Positioning System (GPS) unit.

Location 1 (AnaBat 1) was located within the closed golf course west of Steele Canyon Road, south of an artificial pond, and north of riparian habitat along the Sweetwater River. Location 2 (AnaBat 2) was located within the closed golf course west of Steele Canyon Road to the north of an artificial pond. Location 3 (AnaBat 3) was located within the active golf course east of Steele Canyon Road adjacent to two artificial ponds. The detector at Location 2 (i.e., AnaBat 2) was stolen during the second deployment period in July; as such, those recordings were not able to be retrieved, and those results are not available.

Analook software was used to process the AnaBat Express recordings and aid in species identification. All bat calls were analyzed and compared with recordings from a library of voucher calls of species with the potential to occur in the project site (Corbin and Livengood 2018; Tremor et al. 2017).

3.2 EMERGENCE SURVEY

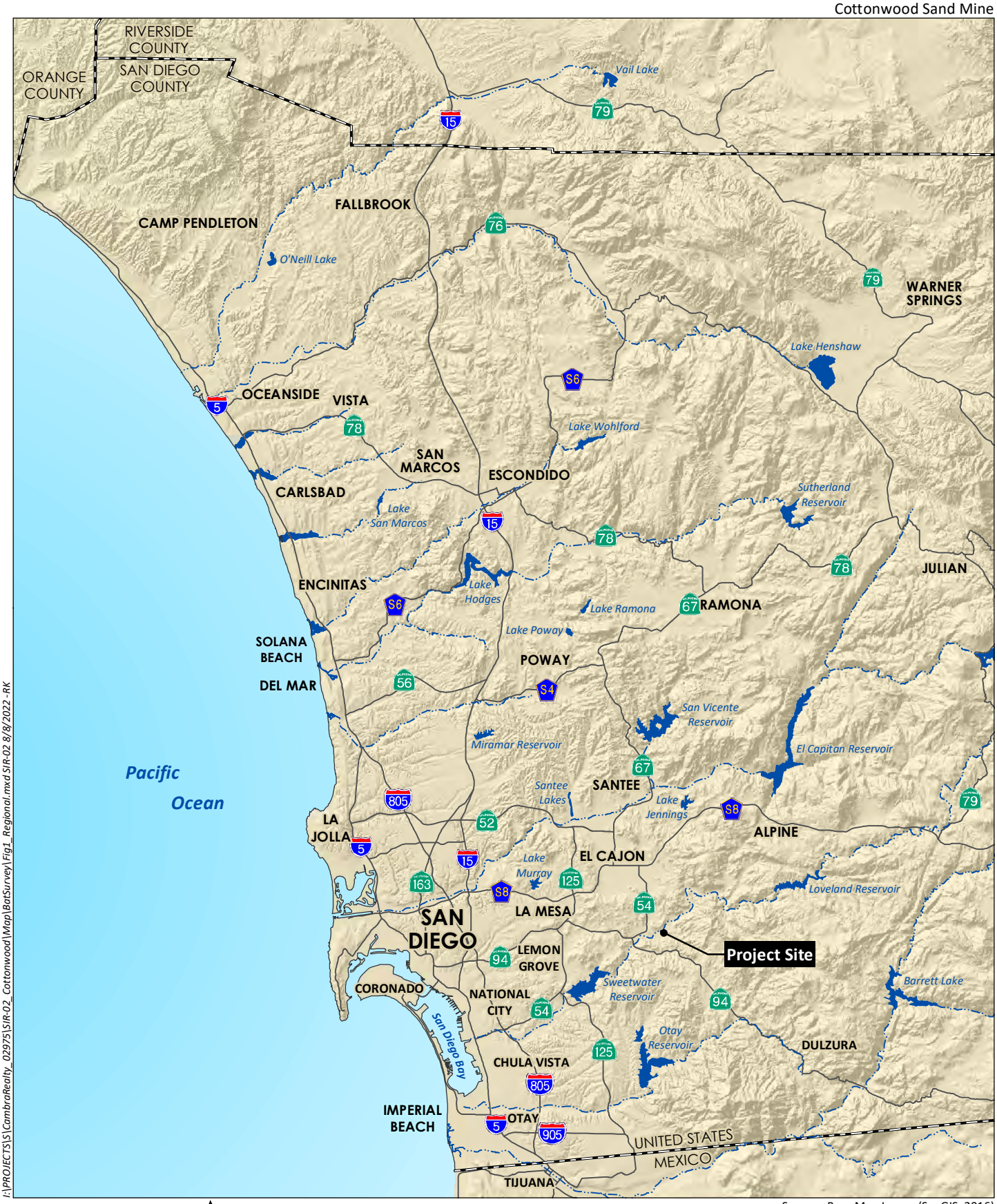
HELIX biologists Shawn Carroll and Alexander Walsh conducted a nighttime emergence survey on July 26, 2022 (Table 1). The survey was conducted along Steele Canyon Road, where the bridge spans the Sweetwater River in the central portion of the project site. Adjacent riparian habitat and open water provide suitable roosting and foraging habitat for bat species with the potential to occur within the project site. The emergence survey commenced approximately one hour before local sunset and was completed one hour after sunset. Surveyors stopped at two stationary point locations: one at the northern end and one southern end of Steele Canyon Road. An Echo Meter Touch 2 Pro detector was used to record individuals and provide an initial identification of detected bat species.

Following the emergence survey, the recordings were post-processed and analyzed through Sonobat software (version 4.5.5; Szewczak and Szewczak 2019). Calls were then manually reviewed and verified with standard call characteristics as well as recordings from a library of voucher calls of species with the potential to occur in the project site (Szewczak and Szewczak 2019, Szewczak 2018).

3.3 SURVEY LIMITATIONS

The surveys were performed in May and July 2022. Surveys were completed during the spring and summer, within the maternity season for roosting bats. Though species that migrate seasonally (i.e., pass through the site in fall or winter) may not have been present at the time surveys were conducted, no special status bat species that would only be present during the winter season are expected to roost on-site. Special status bat species with the potential to occur on-site would be expected to utilize the same roosting habitat resources (i.e., buildings or trees) during the winter as they do during the summer.

It should be noted that data collected by the AnaBat Express or Echo Meter Touch 2 Pro detectors cannot quantify the total number of bats on-site. Each call may represent separate individual bats or the same bat making multiple passes over the detector. As such, this survey does not attempt to quantify the number of bats using the site.



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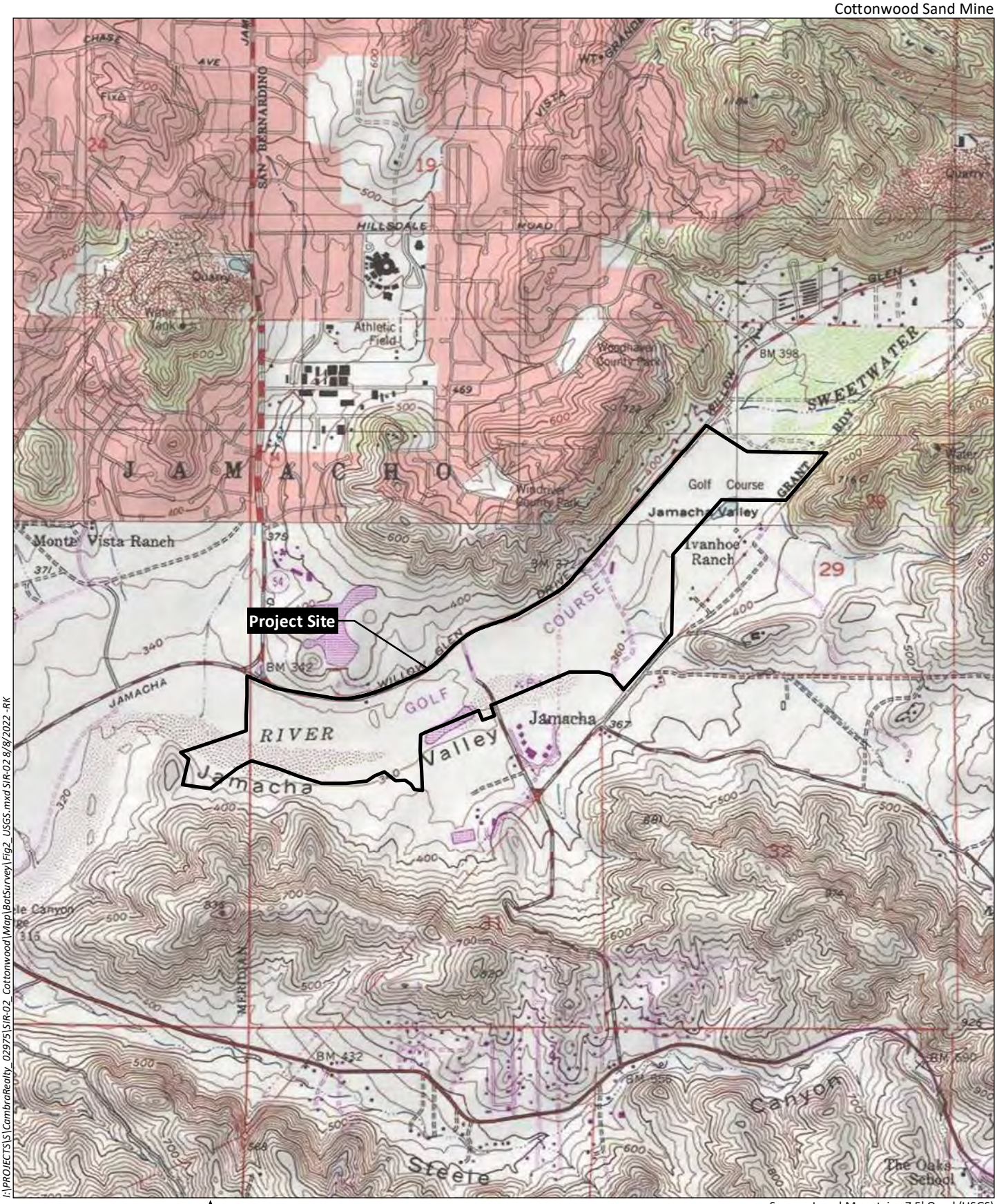
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



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Source: Jamul Mountains 7.5' Quad (USGS)

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USGS Topography

Figure 2

Cottonwood Sand Mine

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0 2,000 Feet

Source: Aerial (SanGIS 2019)

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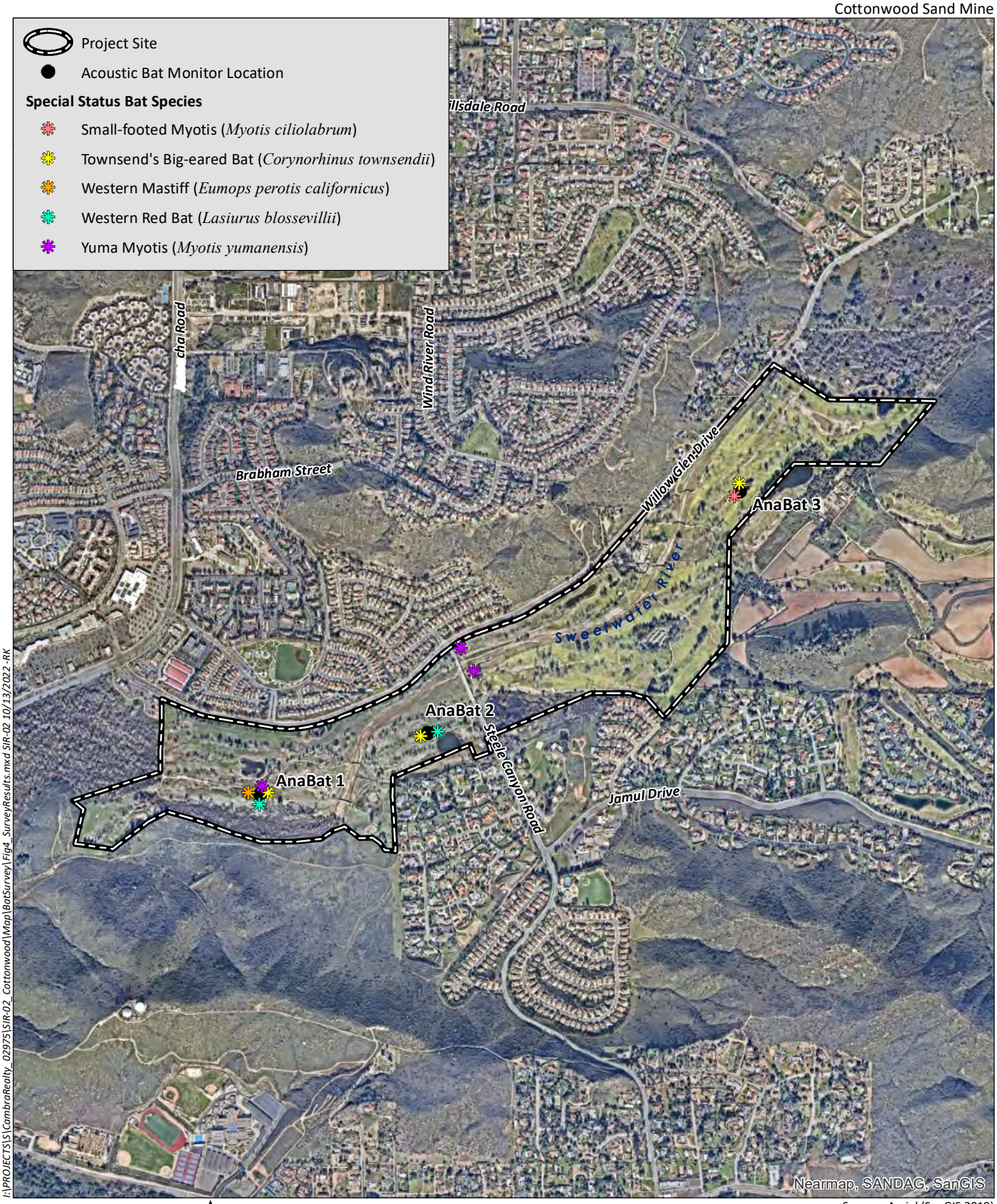
Aerial Photograph

Figure 3



Source: Aerial (SanGIS 2019)

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Bat Survey Stations and Results

Figure 4

4.0 RESULTS

Total species richness was determined for each acoustic monitoring location and for the emergence survey. Nine bat species were identified within the project site during the survey efforts, as summarized in Table 2, *Bat Survey Results*. Species detected include Townsend's big-eared bat (*Corynorhinus townsendii*), big brown bat (*Eptesicus fuscus*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), California myotis (*Myotis californicus*), small-footed myotis (*Myotis ciliolabrum*), Yuma myotis (*Myotis yumanensis*), canyon bat (*Parastrellus hesperus*), and Mexican free-tailed bat (*Tadarida brasiliensis*). Mexican free-tailed bat was the most recorded species, and was documented during both the acoustic monitoring and emergence survey. Other frequently recorded species included big brown bat and California myotis, which were both common in the three acoustic monitoring locations (Figure 4).

Each of the nine species detected within the project site are insect-eating bats. Wetland and riparian habitat and artificial ponds within the project site support and attract insects, making them suitable foraging habitat for each of the detected species. Potential roosting habitat within the project site includes trees and buildings. Several bridges occur within the project that span the Sweetwater River channel, and were inspected during the habitat assessment survey. The bridges were determined to be unsuitable roosting habitat for bats as they have smooth concrete bottoms and are devoid of cracks and cervices typically utilized for roosting.

Roosting potential for each bat species detected during the surveys was determined based on species' biology, documented roosting habits, and the resources present within the project site (Table 2). Of the nine species detected, five are expected to roost on-site, two have the potential to roost on-site, and two are not expected to roost on-site, as discussed below.

The following five bat species are expected to roost within the project site: big brown bat, western red bat, California myotis, Yuma myotis, and Mexican free-tailed bat. Big brown bats preferred roosting sites include trees and buildings. Western red bat is an exclusively tree-roosting species. California myotis and Yuma myotis both use buildings for roosting in the summer and occasionally use trees. The preferred roosting sites for Mexican free-tailed bat are buildings, but the species will occasionally roost in trees. Riparian habitat, planted trees, the main Cottonwood Golf Club building, and other structures within the project site represent preferred and suitable roosting habitat for these species. As such, they are expected to, or have a high likelihood to, roost within the project site.

The following two species have the potential to roost within the project site: small-footed myotis and canyon bat. Small-footed myotis preferred roosting sites include rock or cliff crevices, which are absent from the project site. However, the species has also been known to use buildings and tree bark as roosts during the summer, which are present on-site and provide potential roosting habitat. Canyon bats prefer rock cliffs or crevices for roosting sites, which are absent from the project site. However, the species has also been known to use buildings in the summer. The main Cottonwood Golf Club building and other structures within the project site provide potential roosting habitat for the species.

Bat species that are unlikely to roost on-site include Townsend's big-eared bat and western mastiff bat. Townsend's big-eared bat prefers caves and mines as roosting sites, which are absent from the project site. This species is also highly sensitive to disturbance, making them unlikely to roost within the site. The western mastiff bat preferred roosting sites include cliff or rock faces, which are absent from the project site, making them unlikely to roost within the project site.

Table 2
BAT SURVEY RESULTS

Species		Status	Passive Survey Results[1]						Active Survey Results[1]	Potential Uses of Project Site	
			Anabat Location								
			1		2		3				
Common Name	Scientific Name		May	July	May	July[3]	May	July		Foraging	Roosting[2]
Townsend's big-eared bat†	*Corynorhinus townsendii*	SSC[4]; County Group 2	X	X	X	N/A	X	-	-	X	U
Big brown bat	*Eptesicus fuscus*	-	X	X	X	N/A	-	X	X	X	L
Western mastiff†	*Eumops perotis californicus*	SSC; County Group 2	X	-	-		-	-	-	X	U
Western red bat†	*Lasiurus blossevillii*	SSC; County Group 2	X	X	X	N/A	-	-	-	X	L
California myotis	*Myotis californicus*	-	X	X	X	N/A	X	X	-	X	L
Small-footed myotis†	*Myotis ciliolabrum*	County Group 2	-	-	-	N/A	-	X	-	X	P
Yuma myotis†	*Myotis yumanensis*	County Group 2	X	-	-	N/A	-	-	X	X	L
Canyon bat	*Parastrellus hesperus*	-	X	X	X	N/A	X	X	X	X	P
Mexican free-tailed bat	*Tadarida brasiliensis*	-	X	X	X	N/A	X	X	X	X	L
		Species Richness	**8**	**6**	**6**	**N/A**	**4**	**5**	**4**	**-**	**-**

[1] X indicates that a species was present on site; - indicates a species is absent.
[2] L = roosting likely, trees and/or buildings are preferred roosting sites; P = roosting possible, these species are known to use trees or buildings if their preferred roosting sites are not available; U = roosting unlikely, preferred roosting sites (e.g., cave, etc.) does not occur on site.
[3] Bat detector was stolen during deployment therefore this information is not available.
[4] California Department of Fish and Wildlife Species of Special Concern
† Special Status Species

4.1 STATE AND FEDERALLY LISTED SPECIES

No state or federally listed bat species were detected within the project site.

4.2 OTHER SPECIAL STATUS SPECIES

Three of the nine bat species detected within the project site during the 2022 bat surveys are designated as California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC) and five bat species are designated as County Group 2 animal species, as listed below and shown on Figure 4.

Townsend's big-eared bat (*Corynorhinus townsendii*)
Listing: --/SSC; County Group 2
Distribution: In San Diego County, presumed absent from coastal areas, being found more commonly in historic mining districts and boulder-strewn regions (i.e., Escondido, Lakeside, Dulzura, Jacumba, etc.).
Habitat: Found in a variety of habitats, including desert scrubs, as well as pine and pinyon-juniper forests with the presence of caves or cave-like structures (such as buildings).
Status on site: This species was detected within the project site during the acoustic monitoring surveys at AnaBat Locations 1, 2, and 3 within the western and eastern portions of the site (Figure 4). The species is expected to utilize the site for foraging only, as suitable roosting habitat is absent from the project site.

Western mastiff bat (*Eumops perotis*)
Listing: --/SSC; County Group 2
Distribution: In California, the species occurs from Monterey County to San Diego County from the coast eastward to the Colorado Desert.
Habitat: Found in open, semi-arid to arid habitats, including coastal and desert scrub, grasslands, woodlands, and palm oases. Prefers to roost high above the ground on vertical cliffs, rock quarries, outcrops of fractured boulders, and occasionally tall buildings.
Status on site: This species was detected within the project site during the acoustic monitoring surveys at AnaBat Location 1 in the western portion of the site (Figure 4). The species is expected to utilize the site for foraging only, as suitable roosting habitat is absent from the project site.

Western red bat (*Lasiurus blossevillii*)
Listing: --/SSC; County Group 2
Distribution: In California, the species is locally common, occurring from Shasta County south to San Diego County and west of the Sierra Nevada/Cascade Range and deserts.
Habitat: Mainly occurs in riparian woodlands populated by willows, cottonwoods, sycamores, and oak trees but can be found in non-native vegetation such as tamarisk, eucalyptus, and orchards. Primarily roosts in trees, preferring heavily shaded areas which are open underneath.
Status on site: This species was detected within the project site during the acoustic monitoring surveys at AnaBat Locations 1 and 2 within the western portion of the site (Figure 4). This tree-roosting species has the potential to roost within riparian habitat and planted trees within the project site. The species would also be expected to utilize the site for foraging opportunities.

Small-footed myotis (*Myotis ciliolabrum*)
Listing: --/--; County Group 2
Distribution: Found throughout California occurring in desert, chaparral, riparian areas, and forests.
Habitat: Presence of riparian areas and water appears to be important in distribution. Strongly associated with chaparral and montane habitats in San Diego County. Roosts singly or in small numbers in rocky crevices, caves, mines, snags, buildings, and bridges.
Status on site: This species was detected within the project site during the acoustic monitoring surveys at AnaBat Location 3 in the eastern portion of the site (Figure 4). The species likely utilizes the site for foraging and has the potential to roost within trees and buildings present within the project site.

Yuma myotis (*Myotis yumanensis*)
Listing: --/--; County Group 2
Distribution: Widespread in California but uncommon in the Mojave and Colorado Deserts, except in the mountain ranges bordering the Colorado River Valley.
Habitat: Found in a variety of habitats, including juniper and riparian woodlands, riparian forests, and desert regions where bodies of water (i.e., rivers, streams, ponds, lakes, etc.) are present. Closely associated with water, which it uses for foraging and sources of drinking water. Roosts in caves, attics, buildings, mines, underneath bridges, and other similar structures.
Status on site: This species was detected within the project site during the acoustic monitoring surveys at AnaBat Location 1 and during the nighttime emergence survey (Figure 4). The species likely utilizes the site for foraging and has the potential to roost within trees and buildings present within the project site.

5.0 CONCLUSION

Nine bat species were identified within the project site during the 2022 bat surveys. Five of these are special status species, including Townsend's big-eared bat, greater mastiff bat, western red bat, small-footed myotis, and Yuma myotis. None of the detected species are state or federally listed. The project site supports suitable roosting and foraging habitat for special status bat species.

6.0 REFERENCES

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Szewczak, J. 2018. Echolocation Call Characteristics of California Bats. Humboldt State University Bat Lab. Arcata, CA.

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