

**FINAL HABITAT MITIGATION AND  
MONITORING PLAN**

**SUCKLE MITIGATION SITE**

**SUNRISE POWERLINK**

**CORPS FILE NO. 2007-00704-SAS  
SWRCB 401 CERTIFICATION FILE NO. SB090151N  
CDFG STREAMBED ALTERATION AGREEMENT NO. 1600-2009-0365-R5**

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### List of Acronyms

AA(s)	Assessment Area(s)
ABDSP	Anza Borrego Desert State Park
APN	Assessor Parcel Number
BBG	Barefoot Banded Gecko
BLM	Bureau of Land Management
BO	Biological Opinion
BMPs	Best Management Practices
Cal-IPC	California Invasive Plant Council
Corps	U.S. Army Corps of Engineers
CDFG	California Department of Fish and Game
CRAM	California Rapid Assessment Method
CWA	Clean Water Act
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
GIS	Geographic Information System
HA	Hydrologic Area
HAP/HMP	Habitat Acquisition Plan and Habitat Management Plan
HMMP	Habitat Mitigation and Monitoring Plan
MP	Mileposts
OHV	Off-highway Vehicle
PAR	Property Analysis Record
PBS	Peninsular Bighorn Sheep
PJD	Preliminary Jurisdictional Determination
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SCCWRP	Southern California Coastal Water Research Project
SDG&E	San Diego Gas and Electric
SRPL	Sunrise Powerlink
SWRCB	State Water Resources Control Board
USFWS	United States Fish and Wildlife Service
WOS	Waters of the State
WOUS	Waters of the United States

## 1.0 INTRODUCTION AND PURPOSE

San Diego Gas and Electric (SDG&E) is constructing a new 500/230 kilovolt electric transmission line that would traverse approximately 120 miles between the El Centro area of Imperial County and southwestern San Diego County, in southern California (Figure 1). Construction of this transmission line, along with associated roads, facilities, and maintenance areas, will result in impacts to areas under the jurisdiction of the U.S. Army Corps of Engineers (Corps), the State Water Resources Control Board (SWRCB), and the California Department of Fish and Game (CDFG). State and federal regulations require mitigation for impacts to “waters of the United States” (WOUS) and “waters of the State” (WOS).

Mitigation for permanent impacts to WOUS and WOS is being accomplished through preservation, restoration, and enhancement of wetlands and waters within five mitigation sites as described in the approved Conceptual Habitat Mitigation and Monitoring Plan (Conceptual HMMP; WRA 2010b). A Final HMMP for each site is a requirement of the authorizations issued by the Corps, SWRCB, and CDFG. The Final HMMP describes the specific and detailed mitigation activities and plans, performance criteria to measure success, initial monitoring and management actions, long-term management activities, and estimated costs for the Suckle Mitigation Site in Imperial County, California. The Suckle Mitigation Site is one component of the overall mitigation program for unavoidable impacts to wetlands and waters from the Sunrise Powerlink (SRPL) Project.

This Final HMMP is prepared and formatted to meet the permit conditions of the Corps (Clean Water Act [CWA] Section 404), the SWRCB (CWA Section 401), and the CDFG (Fish and Game Code 1602).

### 1.1 Responsible Parties and Easement Holders

SDG&E is responsible for implementing mitigation for the SRPL Project. WRA, Inc. is the applicant's authorized agent and preparer of the Final HMMP for mitigation to WOUS and WOS.

Primary contact information for these parties is below:

*Project Applicant:*

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8315 Century Park Court, CP21G  
San Diego, California 92123-1548  
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*Authorized Agent:*

WRA, Inc.  
2169-G East Francisco Blvd.  
San Rafael, CA 94901  
Contact: Michael Josselyn, PhD, PWS  
Contact Phone: (415) 454-8868

*Entity Responsible for  
Long Term Management:*

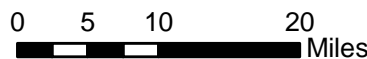
CDFG, State Parks, or Conservancy to be determined





**Figure 1. Project Area Location Map**

Sunrise Powerlink  
San Diego/Imperial County, California



Map Date: June 2010  
Map By: Derek Chan  
Base Source: ESRI  
Filepath: L:\Acad 2000 Files\17000\17128-3\GIS\ArcMap\Mitigation\  
Fig1\_LocMap\_20100630.mxd



SDG&E will be responsible for implementing the project mitigation through completion of the initial monitoring period. SDG&E will convey the lands to a conservancy or otherwise approved entity such as CDFG or State Parks (to be determined and approved by the Corps of Engineers, United States Fish and Wildlife Service (USFWS), CDFG, U.S. Department of Interior Bureau of Land Management [BLM], and CPUC). This process is detailed in G-CM-17 of the project Biological Opinion (BO) FWS-08B04233-11F0047 (USFWS 2010) and included in Section 4.0.

The Agency-approved management entity will be responsible for long-term management of the Suckle Mitigation Site. The description of the long-term management for this mitigation site, the restrictions to be placed on the site, and the financial commitments are summarized in Sections 10.0 and 12.0 and within the HAP/HMP prepared for this mitigation site (SDG&E 2010).

## **1.2 Document Overview and Purpose**

The purpose of the Final HMMP is to describe the mitigation, monitoring, and management of wetlands and waters provided as mitigation within the Suckle Mitigation Site. Restoration of temporary impacts to streams, wetlands, and desert dry washes within the construction footprint is described as part of the Restoration Plan for Temporary Impacts to Waters contained in Appendix A of the Conceptual HMMP (WRA 2010b) and is therefore not addressed here.

The intention of this document is to follow the regulation set forth in the 2008 CWA Section 404 Final Compensatory Mitigation Rule. As such, language and requirements may differ from that of the 2004 Los Angeles District Final Mitigation Guidelines and Monitoring Requirements. In addition, we provide information requested by the Los Angeles District Corps office and the SWRCB related to the functional assessment of the impact and mitigation sites using the California Rapid Assessment Method (CRAM).

Mitigation for the impacts associated with “single and complete projects” will be implemented at five mitigation sites. Four of these sites are located along the SRPL alignment, and one is located in the desert area north of the alignment (see Figure 2). These locations are also part of an overall mitigation program addressing a variety of habitat and special status species requirements for the SRPL. The mitigation sites that are proposed to address impacts to WOUS and WOS are:

- Desert Cahuilla Mitigation Site
- Suckle Mitigation Site
- Long Potrero Mitigation Site
- Lightner Mitigation Site
- Chocolate Canyon Mitigation Site

The Final HMMP addresses one of these mitigation sites: the Suckle Mitigation Site. The mitigation, monitoring, and management activities described in this HMMP are intended to meet the permit requirements of the Corps, CDFG, and SWRCB, as well as the Corps regulatory requirements for preparation of mitigation plans set forth in 33 CFR 332.4(c). The regulatory requirements contained in 33 CFR 332.4(c), as issued by the Corps in 2008, generally encompass the requirements of mitigation and monitoring plans for all of the resource agencies (Corps 2008b). We have included additional information described in the 2004 Los Angeles District final Mitigation Guidelines and Monitoring Requirements and information required in the forthcoming mitigation guidelines, as feasible.





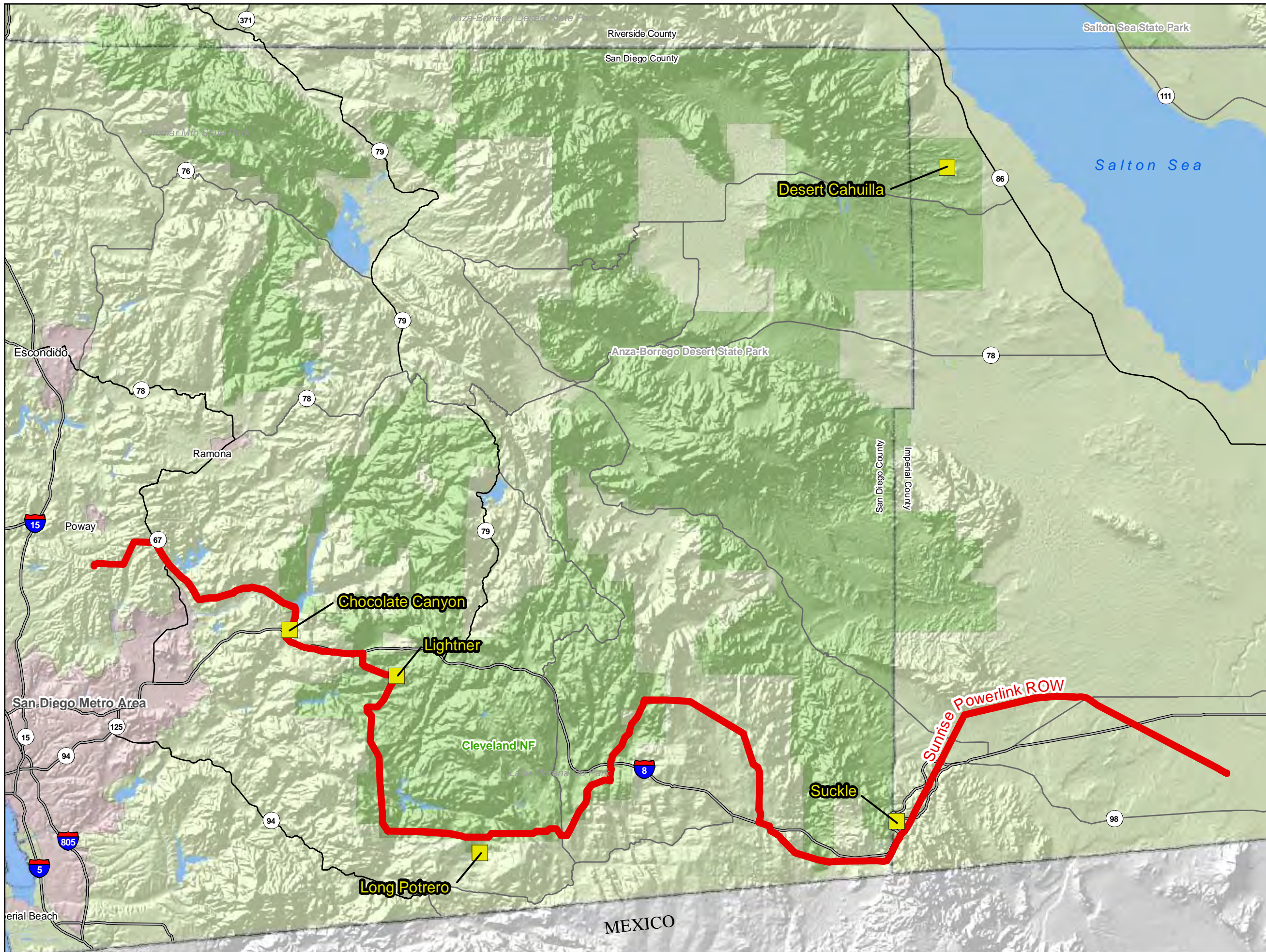
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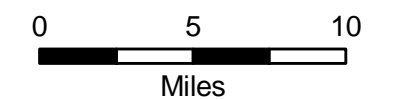
**Figure 2.**

Overview of Mitigation  
Area Locations



**Legend**

Mitigation Area



Map Date: June 2010  
Map By: Derek Chan  
Base Source: ESRI  
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The 2008 regulations require an HMMP to include:

- *Mitigation Objectives, including resource type, amounts, and methods of compensation (see Section 2.0)*
- *Site Selection, including key factors for providing mitigation at the site (see Section 3.0)*
- *Site Protection Instrument (see Section 4.0)*
- *Baseline Information, including ecological characteristics of impacted and mitigation sites (see Sections 5.0)*
- *Determination of Credits, including a description of how the mitigation will provide compensatory mitigation for impacts (see Section 6.0)*
- *Mitigation Work Plan, including detailed descriptions of the work to be performed in implementing mitigation (see Section 7.0)*
- *Maintenance Plan, including maintenance activities to ensure continued viability of the mitigation site (see Section 8.0)*
- *Ecologically-based Performance Standards (see Section 9.0)*
- *Monitoring Requirements and Methods (see Section 9.0)*
- *Long-term Management Plan (see Section 10.0)*
- *Adaptive Management Plan (see Section 11.0)*
- *Financial Assurances to ensure project mitigation will be effectively implemented and maintained (see Section 12.0)*

Project impacts were described in the Pre-Construction Notification prepared for the Corps, as part of the Lake and Streambed Alteration Agreement Notification Package prepared for the CDFG, as part of the Water Quality Certification Application prepared for the SWRCB, and as modified by subsequent submittals. All permit application documents contain a complete project description. Project modifications have been made throughout the permit process to further reduce environmental impacts, including those to streams, wetlands, and desert dry washes.

## **2.0 MITIGATION GOALS AND OBJECTIVES FOR THE SUCKLE MITIGATION SITE**

For desert ecosystems, preservation is considered to be mitigation for impacts to desert dry wash systems as desert ecosystems take centuries to recover or to have establishment of native species, prohibiting the creation or restoration of these systems. However, non-native, invasive plant species removal can enhance habitat in these systems.

The goals of mitigation at the Suckle Mitigation Site are to:

- Preserve and manage both uplands and aquatic resources on each of the five properties in perpetuity
- Preserve and enhance stream and wetland functions, including buffer and wildlife habitat functions
- Provide the legal structure and funding for long-term management of weeds, trash, vandalism, trespassing and any other anthropogenic disturbances in perpetuity through a non-wasting endowment

Mitigation activities include preservation and enhancement of 0.88 acres of desert fan palm oasis wetland and 7.47 acres of desert dry wash habitat. Mitigation actions being implemented at the Suckle Mitigation Site are defined in the Corps 2008 Mitigation Rule (Corps 2008b) and described below:

- **Preservation:** The permanent protection of ecologically important wetlands or other aquatic resources through the implementation of appropriate legal and physical mechanisms (i.e. conservation easements, title transfers). Preservation may include protection of upland areas adjacent to wetlands as necessary to ensure protection or enhancement of the aquatic ecosystem. Preservation does not result in a net gain of wetland acres and may only be used in certain circumstances, including when the resources to be preserved contribute significantly to the ecological sustainability of the watershed.
- **Enhancement:** Activities conducted within existing wetlands that heighten, intensify, or improve one or more wetland functions. Enhancement is often undertaken for a specific purpose such as to improve water quality, flood water retention or wildlife habitat. Enhancement results in a gain in wetland function but does not result in a net gain in wetland acres.

## 2.1 Resource Functions of the Mitigation Project

The Suckle Mitigation Site supports a mixture of desert dry wash and desert fan palm oasis wetland habitat (Figure 3). Currently, the desert dry wash and wetland habitats are threatened by non-native, invasive species infestation. In addition, the potential sale of nearby private property, along with illegal public access, further threatens or has the potential to threaten the sensitive habitats on the site. Section 3.0 describes the rationale for selecting this site to be included in the SRPL mitigation project, and it includes a description of the mitigation site's watershed context. Section 5.0 provides further discussion of the functions and values of this mitigation site based on CRAM evaluations, and projected CRAM scores estimate how these values are expected to improve after 5 years of preservation. The acquisition of this site ensures that the desert dry wash and wetland habitats on the site are preserved for continued natural resource function and value. An overview of habitat values is also provided in the HAP/HMP (SDG&E 2010).

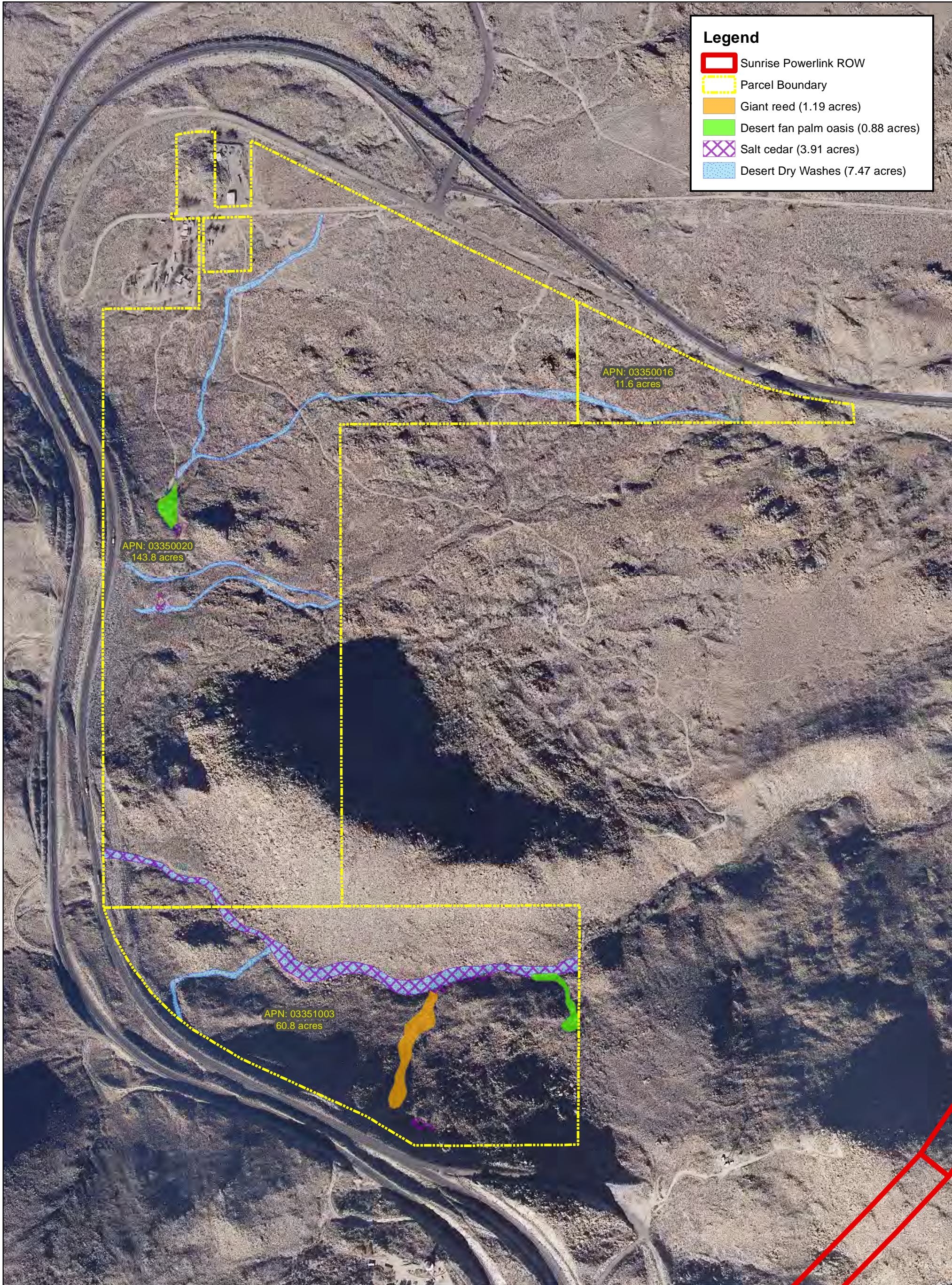
## 2.2 Basis for Request to Include Preservation as Part of Compensatory Mitigation

The basis for preservation to be included as compensatory mitigation at each mitigation site is based upon requirements from the Corps 2008 Mitigation Rule 332.3(h): (h) Preservation (Corps 2008b):

*(1) Preservation may be used to provide compensatory mitigation for activities authorized by [Corps] permits when all the following criteria are met:*

- The resources to be preserved provide important physical, chemical, or biological functions for the watershed;*
- The resources to be preserved contribute significantly to the ecological sustainability of the watershed. In determining the contribution of those resources to the ecological sustainability of the watershed, the district engineer must use appropriate quantitative assessment tools, where available;*



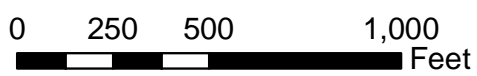
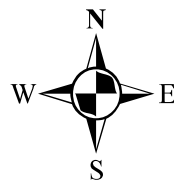


**Legend**

- Sunrise Powerlink ROW
- Parcel Boundary
- Giant reed (1.19 acres)
- Desert fan palm oasis (0.88 acres)
- Salt cedar (3.91 acres)
- Desert Dry Washes (7.47 acres)

**Figure 3. Existing Conditions at the Suckle Mitigation Site**

Sunrise Powerlink  
Imperial County, California



Map Date: November 2010  
 Map By: Derek Chan  
 Base Source: Imperial County  
 Filepath: L:\Acad 2000 Files\17000\17128-3\GIS\ArcMap\Mitigation\Suckle\Suckle\_Existing\_20101104.mxd



- (iii) *Preservation is determined by the district engineer to be appropriate and practicable;*
- (iv) *The resources are under threat of destruction or adverse modifications; and*
- (v) *The preserved site will be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to state resource agency or land trust).*

*(2) Where preservation is used to provide compensatory mitigation, to the extent appropriate and practicable the preservation shall be done in conjunction with aquatic resource restoration, establishment, and/or enhancement activities.*

Corps criteria *i* through *v* (above) are satisfied by the habitat provided and mitigation activities planned for the Suckle Mitigation Site. Specifically, mitigation activities on the Suckle Mitigation Site are anticipated to achieve the following:

- (i) Preservation of the Suckle Mitigation Site preserves Peninsular Bighorn Sheep (PBS; *Ovis canadensis cremnobates*) habitat. In addition, preservation and enhancement of unique palm oasis habitat will aid all wildlife species in the area including bats, Barefoot Banded Gecko (BBG; *Coleonyx switaki*), and PBS;
- (ii) The unique habitat areas (including palm oasis) contribute significantly to the ecological sustainability of the watershed by providing water sources to wildlife in the region, including PBS;
- (iii) Upon review of all materials, the district engineer will make a final determination regarding the use of this site as potential preservation mitigation credits;
- (iv) The desert dry wash features are currently being threatened by non-native, invasive plant species. The sale of nearby private property and illegal public access could adversely modify the site further. SDG&E will seek to resolve current water rights issues so that current water diversion from palm oasis is resolved. In addition, invasive plants will be removed where found; and
- (v) The site will be permanently protected by conveying lands to CDFG, State Parks, BLM, or a conservancy. Final selection of land manager/owner is subject to CDFG approval because the site is the mitigation parcel conserved under the terms and conditions of the SRPL 2081 permit.

### **3.0 SITE SELECTION**

Currently, the mitigation site is private and open for private development. As stated in Section 2.1, protection of the site is important for watershed health. Mitigation activities would prevent the further spread of non-native, invasive species downstream within the watershed, as well as prevent illegal public access and degradation of large portions of the watershed. Illegal public access and invasive plant species threaten the quality of the vegetation and habitat. Preservation and enhancement of the unique habitat areas and water sources will aid wildlife species in the area, including bats, BBG, and PBS habitat. Of all five properties included in the SRPL mitigation program, the Suckle Mitigation Site provides the only mitigation for impacts to BBG (SDG&E 2010). Additionally, issues related to water rights will be resolved with purchase by SDG&E to address the current diversion of water from the palm oasis habitat.

The site was selected based on the presence of desert dry wash systems, the presence of desert fan palm oasis habitat, and the opportunities present for removal of non-native, invasive salt cedar (*Tamarix ramosissima*) and giant reed (*Arundo donax*) to improve habitat conditions.

The site contains more than 7.0 acres of desert dry washes, and approximately 0.9 acre of desert fan palm oasis vegetation. Salt cedar is present in much of the desert dry wash area.

### 3.1 Watershed Setting and Context

#### 3.1.1 Surrounding Land Uses and Owners

The Suckle Mitigation Site occurs within the Coyote Wells hydrologic area (HA). It is bordered to the east by BLM land which includes the In-Ko-Pah gorge at the base of the In-Ko-Pah Mountains. The lands to the south, west, and north are owned by Caltrans. Additional lands to the west are also owned by San Diego County. The Suckle family owns additional lands located to the north, and another private property is located to the south near Interstate 8. The Anza Borrego Desert State Park (ABDSP) is located to the west and north of the mitigation site. Implementation of the proposed mitigation activities at this site would protect and enhance the desert dry wash habitat within the watershed, as well as ensure the hydrological and ecological connectivity of the site with its surrounding rural landscape.

Specific information on the Suckle Mitigation Site location is listed below in Table 1.

**Table 1. Suckle Mitigation Site Location Details.**

Mitigation Site Location	Located along Interstate 8, off Mountain Springs Road.
Mitigation Site Latitude/Longitude	116° 06' 12" W, 32° 40' 07" N
Name of Watershed and Hydrologic Unit	Coyote Wells HA (723.20)
Mitigation Site City and County	Ocotillo, Imperial County

### 3.2 Beneficial Uses Provided

Beneficial uses and water quality objectives are required to be established for all WOS, both surface and ground waters. Beneficial uses of the surface and ground waters of the San Diego Region are discussed in the Water Quality Control Plan for the Colorado River Basin (Colorado River RWQCB 1994). Beneficial uses for surface waters are designated under section 303 of the CWA (40 CFR 131) and under the Porter-Cologne Act (California Water Code section 13050[f]). The State is required to specify appropriate water uses to be achieved and protected. Definitions and abbreviations for beneficial uses provided by WOS are summarized in Table 2. Waters located within the Suckle Mitigation Site are part of the Coyote Wells hydrologic area watershed and are considered surface waters under the category "washes (ephemeral streams)" located in the west Colorado River Basin (Colorado River RWQCB 1994).

For washes in the watershed where the Suckle Mitigation Site occurs, the Colorado River RWQCB has designated the following beneficial uses (see Table 3): Freshwater Replenishment (FRSH), Ground Water Recharge (GWR), Noncontact Water Recreation (REC2), Warm Freshwater Habitat (WARM), and Wildlife Habitat (WILD). Table 2 contains definitions of additional beneficial uses which have not been designated for this mitigation site, but they are included in the table as references for Table 3.



**Table 2. Definitions for Beneficial Uses of WOS.**

<b>State Recognized Beneficial Uses</b>	<b>Description</b>
Municipal and Domestic Supply (MUN)	Uses of water for community, military, or individual water supply systems, including, but not limited to, drinking water supply.
Agricultural Supply (AGR)	Uses of water for farming, horticulture, or ranching, including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
Industrial Service Supply (IND)	Includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.
Industrial Process Supply (PROC)	Uses of water for industrial activities that depend primarily on water quality.
Hydropower Generation (POW)	Uses of water for hydropower generation.
Freshwater Replenishment (FRSH)	Uses of water for natural or artificial maintenance of surface water quantity or quality.
Ground Water Recharge (GWR)	Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting salt water intrusion into fresh water aquifers.
Water Contact Recreation (REC1)	Uses of water for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and uses of natural hot springs.
Noncontact Water Recreation (REC2)	Uses of water for recreational activities involving proximity to water, but not normally involving contact with water where water ingestion is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
Preservation of Biological Habitats of Special Significance (BIOL)	Includes uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.
Wildlife Habitat (WILD)	Uses of waters that support wildlife habitats, including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.
Cold Freshwater Habitat (COLD)	Uses of water that support cold water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Warm Freshwater Habitat (WARM)	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Aquaculture (AQUA)	Includes the uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.
Inland Saline Water Habitat (SAL)	Includes uses of water that support inland saline water ecosystems including, but not limited to, preservation or enhancement of aquatic saline habitats, vegetation, fish, or wildlife, including invertebrates.
Estuarine Habitat (EST)	Includes uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

**Table 2. Definitions for Beneficial Uses of WOS.**

State Recognized Beneficial Uses	Description
Marine Habitat (MAR)	Includes uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).
Rare, Threatened, or Endangered Species (RARE)	Includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.
Migration of Aquatic Organisms (MIGR)	Includes uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.
Spawning, Reproduction, and/or Early Development (SPWN)	Includes uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish. This use is applicable only for the protection of anadromous fish.
Shellfish Harvesting (SHELL)	Includes uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters and mussels) for human consumption, commercial, or sport purposes.

One goal of the overall SRPL mitigation program is to compensate for SRPL-related impacts to WOS and their beneficial uses. Beneficial uses of WOS within the Suckle Mitigation Site will be preserved and enhanced to mitigate a portion of the beneficial uses affected by SRPL project activities; mitigation activities on the other four mitigation sites are intended to compensate for any remaining beneficial uses not provided by the Suckle site (i.e., there will be no net loss of beneficial use from any project activity). All designated beneficial uses of WOS potentially impacted by SRPL activities are summarized in Table 3; however, not all uses listed in Table 3 are necessarily affected by the SRPL Project. Only those that are marked as such have the potential to be affected.

**Table 3. Beneficial Uses of WOS That May Be Affected by the SRPL Project.**

<b>SAN DIEGO REGION INLAND SURFACE WATERS</b>	<b>Hydrologic Unit Basin Number</b>	<b>M U N</b>	<b>A R R</b>	<b>I N D</b>	<b>P R O C</b>	<b>G W R</b>	<b>F R S H</b>	<b>P O W</b>	<b>R E C 1</b>	<b>R E C 2</b>	<b>B I O L</b>	<b>W A R M</b>	<b>C O L D</b>	<b>W I L D</b>	<b>R A R E</b>	<b>S P W N</b>
<b>San Diego River Watershed</b>	907.31	X	X	X	X				X	X		X	X	X		
Conejos Creek 7.31	907.31	X	X	X	X				X	X		X	X	X		
Alpine Creek	907.31	X	X	X	X				X	X		X	X	X		
Chocolate Canyon	907.33	X	X	X	X				X	X		X	X	X		
Chocolate Canyon	907.31	X	X	X	X				X	X		X	X	X		
Sweetwater River	909.31	X	X	X	X				X	X		X	X	X		X
Viejas Creek	909.31	X	X	X	X				X	X		X	X	X		
Viejas Creek	909.33	X	X	X	X				X	X		X	X	X		
Taylor Creek	909.31	X	X	X	X				X	X		X	X	X		
<b>Tijuana Hydroloigic Unit</b>	911															
Cottonwood Creek	911.23	+							X	X		X		X		
Dry Valley	911.23	+							X	X		X		X		
Bob Owens Canyon	911.23	+							X	X		X		X		
McAlmond Canyon	911.24	+							X	X		X		X		
McAlmond Canyon	911.23	+							X	X		X		X		
Rattlesnake Canyon	911.23	+							X	X		X		X		
Potrero Creek	911.25	+							X	X		X		X		
Potrero Creek	911.23	+							X	X		X		X		
Bee Creek	911.23	+							X	X		X		X		
Cottonwood Creek	911.30	X	X	X	X		X		X	X		X	X	X	X	X
Hauser Creek	911.30	X	X	X	X		X		X	X		X	X	X	X	X
Pine Valley Creek	911.30	X	X	X	X		X		X	X		X	X	X	X	X
Wilson Creek	911.30															
Pats Canyon	911.30															
La Posta Creek	911.70	X	X	X	X		X		O	X		X	X	X		
Simmons Canyon	911.70	X	X	X	X		X		O	X		X	X	X		
Diablo Canyon	911.84	+														
<b>Reservoirs &amp; Lakes</b>																
El Capitan Reservoir	907.31	X	X	X	X			X <sup>1</sup>	X	X	X	X				
Loveland Reservoir	909.31	X	X	X	X		X	X	X	X	X					
Barrett Lake	911.30	X	X	X	X		X	X	X	X	X	X	X			
San Vicente Reservoir	907.20	X	X	X	X		X	X	X	X	X	X				

COLORADO RIVER BASIN REGION	Water Board Hydrologic Unit Code	M U N	A G R	A Q U A	F R S H	I N D	G W R	R E C I I	R E C I I	W A R M	C O L D	W I L D	P O W	R A R E
Tule Creek	22.71, 22.72	P	X				X	X	X	X		X		
Unlisted Perennial and Intermittent Streams		P <sub>11</sub>			I X <sub>12</sub>		I X	I P X	I X	I X		I X		I X <sub>13</sub>
Washes (Ephemeral Streams)					I <sub>12</sub>		I		I	see note 7		I		

**Key:**  
 X = Existing Beneficial Use  
 0 = Potential Beneficial Use  
 I = Intermittent Uses  
 + = Exempted from MUN. The water body has been exempted by the Regional Board from the municipal use designation under the terms and conditions of State Board Resolution No. 88-63, *Sources of Drinking Water Policy*.)

Note 1: Waterbodies are listed multiple times if they cross hydrologic area or sub area boundaries.)  
 Note 2: Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

**FOOTNOTES:** Footnotes are numbered as found in the Basin Plan.  
 7. Use, if any, to be determined on a case-by-case basis.  
 11. Potential use designations will be determined on a case-by-case basis as necessary in accordance with the "Sources of Drinking Water Policy" in this chapter.  
 12. Applies only to tributaries to Salton Sea.  
 13. Rare, endangered, or threatened wildlife exists in or utilizes some of these waterway(s). If the RARE beneficial use may be affected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered, or threatened species on a case-by-case basis is upon the CDFG on its own initiative and/or at the request of the Regional Board; and such substantiation must be provided within a reasonable time frame as approved by the Regional Board.

#### **4.0 LONG-TERM SITE PROTECTION**

Consistent with the Mitigation Monitoring, Reporting, and Compliance Program and the BO (USFWS 2010), SDG&E will convey the lands to CDFG, State Parks, BLM, or a conservancy. The mitigation site is in CDFG region 6, but there are no other CDFG lands in the immediate vicinity. BLM lands are immediately adjacent to the parcel, but BLM may not be able to accept the conservation easement and endowment. The State Park lands closest to the mitigation site are to the west in San Diego County. Although not contiguous with the State Park lands, management of the two areas could be effectively coordinated. The selection of the land manager/owner is subject to approval by CDFG because the site is the mitigation parcel conserved under the terms and conditions of the SRPL 2081 permit. The timing and approval process is detailed in G-CM-17 of the project BO FWS-08B04233-11F0047 (USFWS 2010). This measure is as follows:

***G-CM-17: This conservation measure has been changed to reflect updated information and progress made in acquiring offsite conservation.***

*(a) Prior to initiating ground- or vegetation-disturbing project activities, SDG&E will provide and implement the following assurance:*

- Unless already acquired, SDG&E will provide assurances (e.g., performance bond, letter of credit, or escrow account) to fund the acquisitions listed below in (c).*

*(b) SDG&E will fully fund an endowment for in-perpetuity management of all parcels acquired in (c) within 3 months of the Wildlife Agencies' approval of the final endowment amounts.*

*(c) Unless otherwise authorized by the Wildlife Agencies, no later than 18 months from the date of the revised 2010 biological and conference opinion, SDG&E will acquire and permanently preserve the nine (9) parcels identified in the September 2010 Habitat Acquisition Plan and Habitat Management Plan (HAP/HMP; referenced by name as Nabi, Lakeside Ranch, Hamlet, El Capitan, Chocolate Canyon, Lightner, Long Potrero, Suckle, and Desert Cahuilla) in a manner consistent with the HAP/HMP and the following provisions:*

- The land-owner, land management entity, conservation easement grantee, and endowment fund manager for each property will be approved by the Wildlife Agencies. SDG&E will coordinate efforts with the Wildlife Agencies to identify potential candidates and review their qualifications to hold and manage lands and/or endowment funds. This task will be completed within 6 months of issuance of the 2010 revised biological and conference opinion.*
- SDG&E will conduct a revised Property Analysis Record (PAR) or PAR-like analysis for each property once the land management entity for individual properties has been identified and approved by the Wildlife Agencies. This revised PAR will be used to determine the final endowment amount SDG&E will provide for in-perpetuity habitat management of each property.*
- Conservation easement language, or its equivalent where an easement is not allowed by the land manager (State Parks), for all properties will be approved by the Wildlife Agencies prior to easement recordation; and*

- *SDG&E will complete the required acquisition, protection, and transfer of all properties and record the required conservation easements in favor of DFG, or other entity approved by the Wildlife Agencies, no later than 18 months after the start of the ground- or vegetation-disturbing activities.*

The HAP/HMP provides a description of long-term management of the Suckle Mitigation Site after performance standards have been achieved; a summary of these activities is provided in Section 10.0, below. Long-term financing mechanisms are provided in the HAP/HMP and in Section 12.0, below.

## 5.0 BASELINE INFORMATION

### 5.1 Preliminary Jurisdictional Determination and Functional Assessment of Impact Sites

A preliminary jurisdictional determination (PJD) of the extent of wetlands and waters along the SRPL Right-of-Way (ROW) has been approved by the Corps (WRA 2010a) and is included in permit application packages for the SRPL. The PJD was used during SRPL planning to avoid unnecessary impacts to WOUS and WOS and to quantify unavoidable impacts to wetlands and waters. Impacts to unvegetated waters included perennial, intermittent, and ephemeral streams. Ephemeral streams were described using two subcategories, including desert dry washes and mountain ephemeral streams. Vegetated wetlands delineated using the Corps 3-parameter approach (Environmental Laboratory 1987) also occur at two impact sites along the margins of intermittent streams.

A functional assessment of 30 impact sites along the SRPL ROW was performed using CRAM methodology, covering both existing conditions and projected post-project conditions. The Conceptual HMMP describes the results of the CRAM functional assessment of impact sites in full detail; results are only summarized herein. CRAM scores for existing conditions will be used as baseline data, while CRAM scores for post-project conditions were estimated as a means to predict the effects of impacts to wetland functions and services. Combined average CRAM scores are presented in Table 4, while raw scores for all CRAM assessments at impact and mitigation sites can be found in Appendix A. Further detail on the assessments can be found in the Conceptual HMMP (WRA 2010b).

An estimate of effects of project impacts on functions and services provided by impacted WOUS and WOS was generated by comparing existing and projected post-project CRAM scores at impacted sites. As outlined in the Conceptual HMMP, the combined average CRAM score of representative impact sites for SRPL is expected to decrease by an average of 3 percentage points from project implementation. This represents the average decrease in functions and services resulting from SRPL impacts to WOUS and WOS. The CRAM score for the one perennial stream within the ROW is not expected to measurably decrease. The majority of individual projected impacts would result from aggradation/degradation of stream channels and degradation of wetland buffer areas. While impacts to Buffer Condition and Channel Stability are likely to be common among desert dry washes and mountain ephemeral impact locations, these combined stream categories saw a decline of less than 2 percentage points in overall projected CRAM scores. The largest decline in CRAM score came from one intermittent stream at the Lightner Mitigation Site where the Suncrest Substation is proposed, causing a loss of both stream channel and adjacent riparian habitat. The drop in overall CRAM score of 38.7 percentage points for this assessment area (AA) (accounting for the majority of an 11.6-point

Table 4. Combined Average CRAM Scores for Existing and Post-Project Conditions at Impact Sites along the SRPL ROW.

CRAM Index and Attributes	Existing (Baseline) Mean Scores	Projected Post-Project Mean Scores	Decrease Between Existing and Projected Post-Project Conditions (percentage points)
Overall Index Score	72.3%	69.3%	3.0
Landscape Context	93.4%	89.0%	4.4
Hydrology	88.6%	82.8%	5.8
Physical Structure	47.5%	46.3%	1.2
Biotic Structure	59.7%	59.3%	0.4

drop for all intermittent streams combined) is the most substantial single impact of the SRPL project as reflected in projected CRAM scores. Enhancement activities at the Suckle Mitigation Site, in combination with mitigation at other sites included in the overall mitigation package, are intended to offset these impacts to functions and services.

## 5.2 Baseline Condition and CRAM Assessment of the Suckle Mitigation Site

The Suckle Mitigation Site is comprised of three parcels totaling 216 acres. It is located along Interstate 8 within the upper reaches of the Salton Sea Watershed (Figure 4). Several out-buildings and a residence are located adjacent to the northwest corner of the site. A PVC pipe originating at the northernmost desert fan palm oasis appears to run to one of these buildings. Interstate 8 runs along the northern portion of the site, curving along the western boundary to the south. The site ranges from 2,200 to 2,357 feet in elevation and supports PBS habitat. Preservation of the site will include transfer of title or protection under a conservation easement to ensure protection of unique vegetation and wildlife habitat. The SRPL ROW does not run through the Suckle Mitigation Site and therefore the site will not be impacted by any construction activities associated with ROW. A summary of jurisdictional areas within the Suckle Mitigation Site is outlined in Table 5.

Table 5. Jurisdictional Areas within the Suckle Mitigation Site

	Area (acres)	Length (linear feet)
Desert Dry Wash	7.47	11,200
Desert Fan Palm Oasis (wetland)	0.88	-
<b>TOTAL:</b>	8.35	11,200

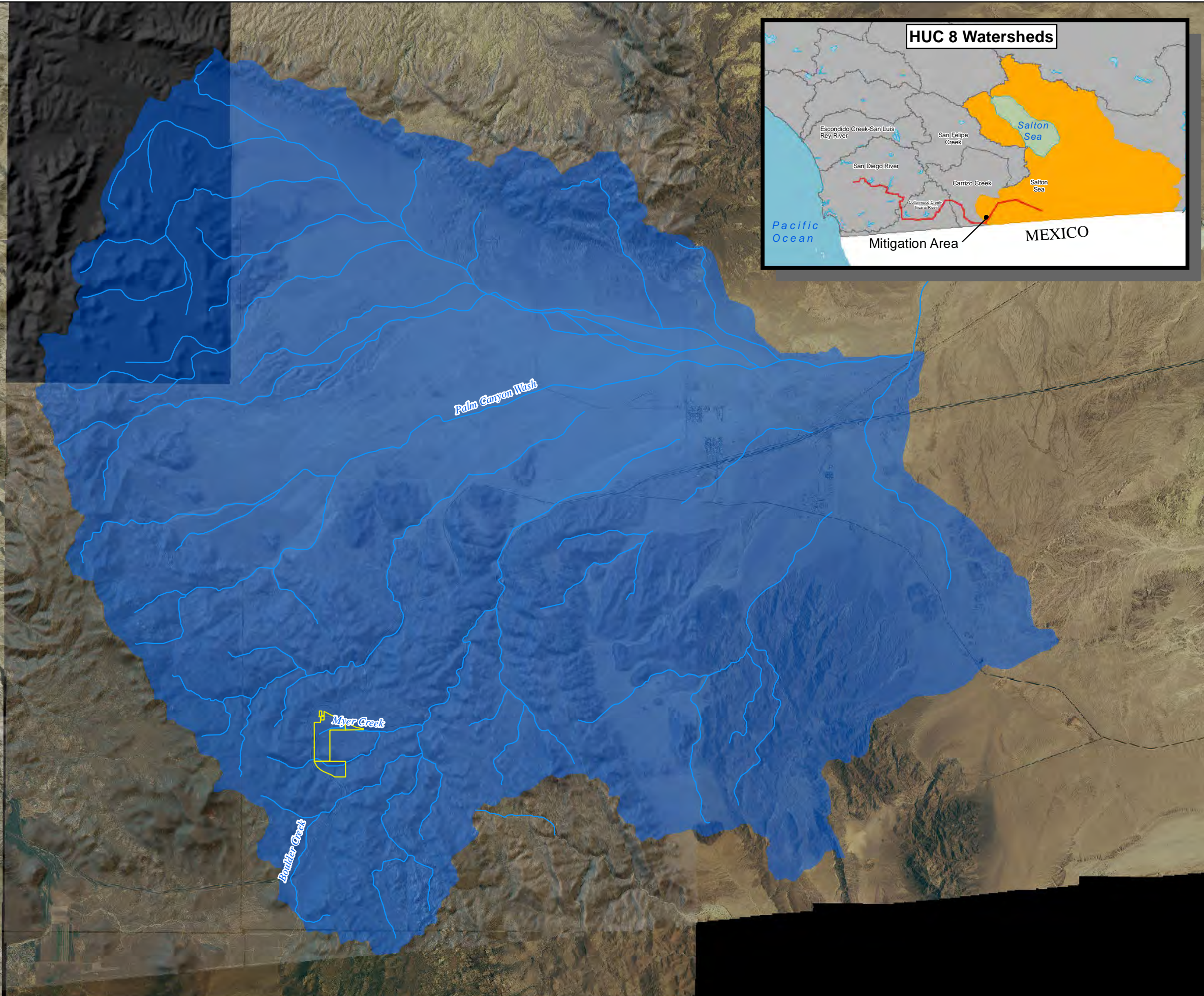
Soils: Soils at the site are mapped as Rock Outcrop-Lithic Torriorthents-Omsott. Omsott soils are characterized as well drained with rapid to medium runoff and moderate to moderately rapid permeability (USDA 2010a). Soils do not appear on the hydric soils list (USDA 2010b).

Vegetation: Vegetation within the Suckle Mitigation Site includes Sonoran mixed woody habitat and succulent scrub habitat. Dominant plant species observed include white bursage (*Ambrosia dumosa*), desert peach (*Prunus andersonii*), Bigelow's nolina (*Nolina bigelovii*), desert agave (*Agave deserti*), prickly pear (*Cylindropuntia* spp.), and Parish's goldeneye (*Viguiera parishii*). Dominant native plant species found in the northern desert fan palm oasis habitat include California fan palm (*Washingtonia filifera*), yerba mansa (*Anemopsis californica*),






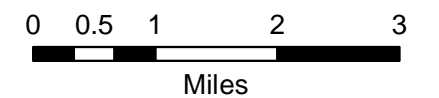
Sunrise Powerlink  
San Diego County,  
California

**Figure 4.**  
**Suckle**  
**Mitigation Site:**  
**Watersheds**



**Legend**

-  Parcel Boundary
-  Coyote Wells Watershed (HUC 12)
-  USGS Blueline Streams





and sandbar willow (*Salix exigua*). The southern desert fan palm oasis was dominated by California fan palm and Fremont cottonwood (*Populus fremontii*). In addition, salt cedar is present throughout most of the southern desert dry wash, which runs west to east, and within one of the centrally located desert dry washes, which also runs west to east.

Hydrology: Precipitation is the main source of hydrology for this site. This site typically receives approximately 3.21 inches of rainfall per year (USDA 2010c). Interstate 8 intersects with an area of desert dry washes at the southern end of the site. The largest desert dry wash at the southern end of the site flows from the west through a culvert under Interstate 8 and onto the Suckle Mitigation Site. Natural hydrology in this desert dry wash system may be somewhat impeded by the non-native, invasive plant species infestations of giant reed and salt cedar which are concentrated in middle of the on-site portion of this wash, though relatively sparse patches also occur upstream.

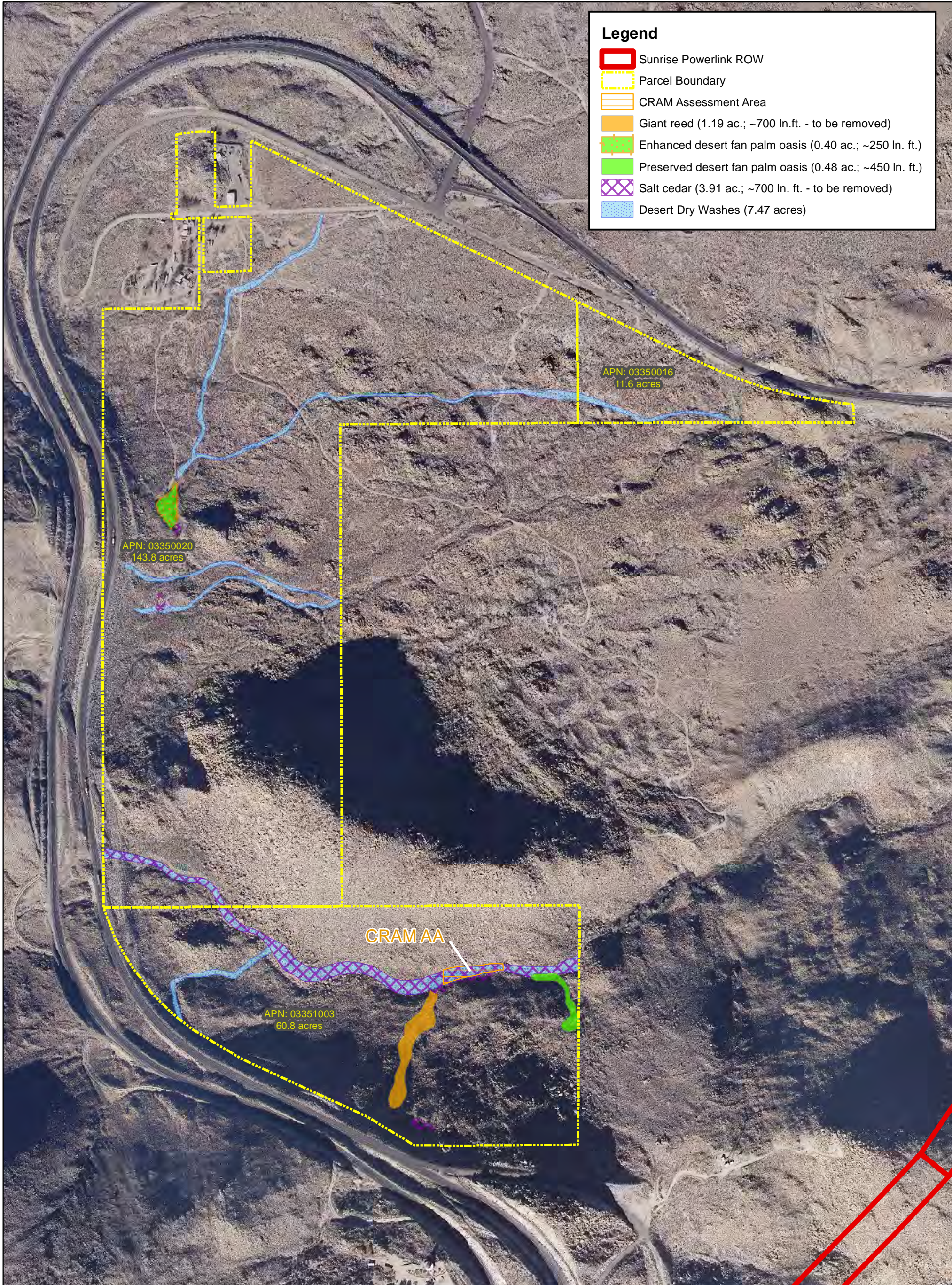
### 5.2.1 *Baseline CRAM Functional Assessment of the Suckle Mitigation Site*

Functional assessments were performed at four of the five proposed mitigation sites for SRPL using CRAM methodology, covering both existing conditions and projected conditions following the implementation of mitigation activities. The assessments provide scores which quantify the existing condition and functional capacity of streams and wetlands being used as mitigation for impacts to WOUS and WOS along the SRPL ROW. The seven total mitigation CRAM assessments are representative of all proposed mitigation activities for the SRPL project, and also provide insight on conditions at proposed mitigation sites where activities other than preservation will take place. One CRAM assessment was performed at the Suckle Mitigation Site and is the focus of this report. The assessment was performed on a desert dry wash and was completed in September 2010.

Of the six desert dry washes present within the Suckle Mitigation Site, the southernmost wash, which runs west to east, was chosen as a representative feature for this site to be assessed using CRAM (Figure 5). The AA was established roughly in the center of the desert dry wash, between two hydrologic breaks. This AA had an overall score of 68 percent.

Desert dry wash CRAM scores for the Suckle Mitigation Site are low, but are comparable to other desert dry wash CRAM scores in the vicinity. As described in the CRAM Technical Bulletin (CWMW 2009), seasonal wetlands and headwater streams often have naturally lower complexity [than higher-order streams or perennial wetlands] and may inherently produce lower scores under the current CRAM methodology. Or, as described in the CRAM User's Manual (Collins *et al.* 2008), there may be a limit to the applicability of CRAM in low order (i.e., headwater) streams in very arid environments that tend not to support species-rich plant communities with complex horizontal and vertical structure. Table 6 provides CRAM scores for the Suckle Mitigation Site alongside average CRAM scores for other desert dry wash systems in the vicinity. This data includes the average scores for 25 desert dry wash impact AAs along the SRPL ROW (detailed in the Conceptual HMMP), and average scores for 84 desert dry wash AAs at a solar power generation project site approximately 14 miles northeast of the Suckle Mitigation Site in the Imperial Valley (SCCWRP 2010). The similarity of these scores suggests that it is normal for desert dry washes in this region to score low in such areas as Physical and Biotic Structure.



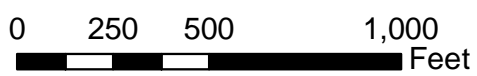
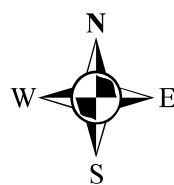


**Legend**

- Sunrise Powerlink ROW
- Parcel Boundary
- CRAM Assessment Area
- Giant reed (1.19 ac.; ~700 ln.ft. - to be removed)
- Enhanced desert fan palm oasis (0.40 ac.; ~250 ln. ft.)
- Preserved desert fan palm oasis (0.48 ac.; ~450 ln. ft.)
- Salt cedar (3.91 ac.; ~700 ln. ft. - to be removed)
- Desert Dry Washes (7.47 acres)

**Figure 5. CRAM Assessment Areas within the Suckle Mitigation Site**

Sunrise Powerlink  
Imperial County, California



Map Date: November 2010  
 Map By: Derek Chan  
 Base Source: Imperial County  
 Filepath: L:\Acad 2000 Files\17000\17128-3\GIS\ArcMap\CRAM  
 Suckle\_CRAM\_20101111.mxd



<b>Table 6. Comparison of CRAM Scores for Desert Dry Washes within the Suckle Mitigation Site and Nearby Sites.</b>				
CRAM Index and Attributes	Suckle Existing Scores	Suckle Projected Scores	Mean Scores from SRPL Impact Sites	Mean Scores from a Nearby Site (SCCWRP 2010)
Overall Index Score	68%	71%	68%	68%
Buffer and Landscape Context	93%	100%	94%	95%
Hydrology	92%	92%	91%	91%
Physical Structure	38%	38%	43%	41%
Biotic Structure	50%	56%	43%	46%

*Buffer & Landscape Context*

The desert dry wash assessed at the Suckle Mitigation Site scored a 93.3 percent for the Buffer & Landscape Context attribute. The wash received a “B” for the Buffer Condition submetric, because the AA buffer borders Highway 8 and nonnative plants were observed throughout this area. The wash received an “A” for all other Buffer & Landscape Connectivity metrics and submetrics, due to the AA’s location in a fairly remote, undisturbed area.

*Hydrology*

The Suckle desert dry wash scored a 91.7 percent for the Hydrology attribute. This feature received a “B” for channel stability due to signs of aggradation and degradation within the channel. The wash received an “A” for all other Hydrology metrics.

*Physical Structure.*

The desert dry wash received a 37.5 percent for the Physical Structure attribute. The wash received a “D” for Structural Patch Richness, containing only 3 of 16 possible patch types. The wash received a “C” for Topographic Complexity, having only one obvious break in slope as opposed to multiple “benches” that would allow the AA to receive a higher score. As shown in Table 6 and discussed above, low-order streams such as those at the Suckle Mitigation Site have a higher likelihood of scoring low on structure attributes. Low scores for these attributes appear to be normal for desert dry washes in the vicinity.

*Biotic Structure*

The Suckle desert dry wash scored a 50.0 percent for the Biotic Structure attribute. It received a “C” for the Number of Co-dominant Species submetric and the Horizontal Interspersion and Vertical Biotic Structure metrics. The AA received a “B” for the Number of Plant Layers submetric, and a “D” for Percent Invasion due to the presence of many invasive species such as salt cedar, Saharan mustard (*Brassica tournefortii*), and oats (*Avena spp.*).

### *5.2.2 Projected CRAM Scores Following Mitigation Implementation at the Suckle Mitigation Site*

Using proposed mitigation plans and data collected at the Suckle Mitigation Site for the SRPL project, CRAM was used to predict how the AA at this site may improve following mitigation activities. These projected scores are based on conditions anticipated approximately 5 years after project implementation, as the full benefit of mitigation actions may not be evident immediately upon completion.

Enhancement actions will take place at the Suckle Mitigation Site that will contribute to higher CRAM scores for streams on the site. These activities are detailed in Section 7 and Figure 6. Removal of non-native plant species, which currently dominate much of the desert dry wash area at the Suckle Mitigation Site, is the main component of stream enhancement measures for this mitigation site.

#### *Buffer & Landscape Context*

Under projected future conditions, the Buffer and Landscape Context score for the Suckle AA is expected to increase from a 93.3 percent to a 100.0 percent. This increase would be possible because weed removal activities at the Suckle Mitigation Site are expected to allow the score for the Buffer Condition submetric to increase from a “B” to an “A.” In addition, with management of the site for mitigation purposes, Off-highway Vehicle (OHV) use will no longer be allowed. The cessation of this activity, which disturbs soil and likely promotes the spread of nonnative vegetation, will be beneficial to all streams and stream buffers at the Suckle Mitigation Site.

#### *Hydrology*

Scores for the Hydrology attribute are not expected to change for the assessed desert dry wash at the Suckle Mitigation Site within 5 years of mitigation implementation. However, cessation of OHV use on the site will likely reduce aggradation and degradation within stream channels over a longer time period. Thus, although it is not reflected in the 5-year projection, mitigation implementation at the Suckle Mitigation Site also has the potential to increase scores for the Channel Stability metric and the overall CRAM score.

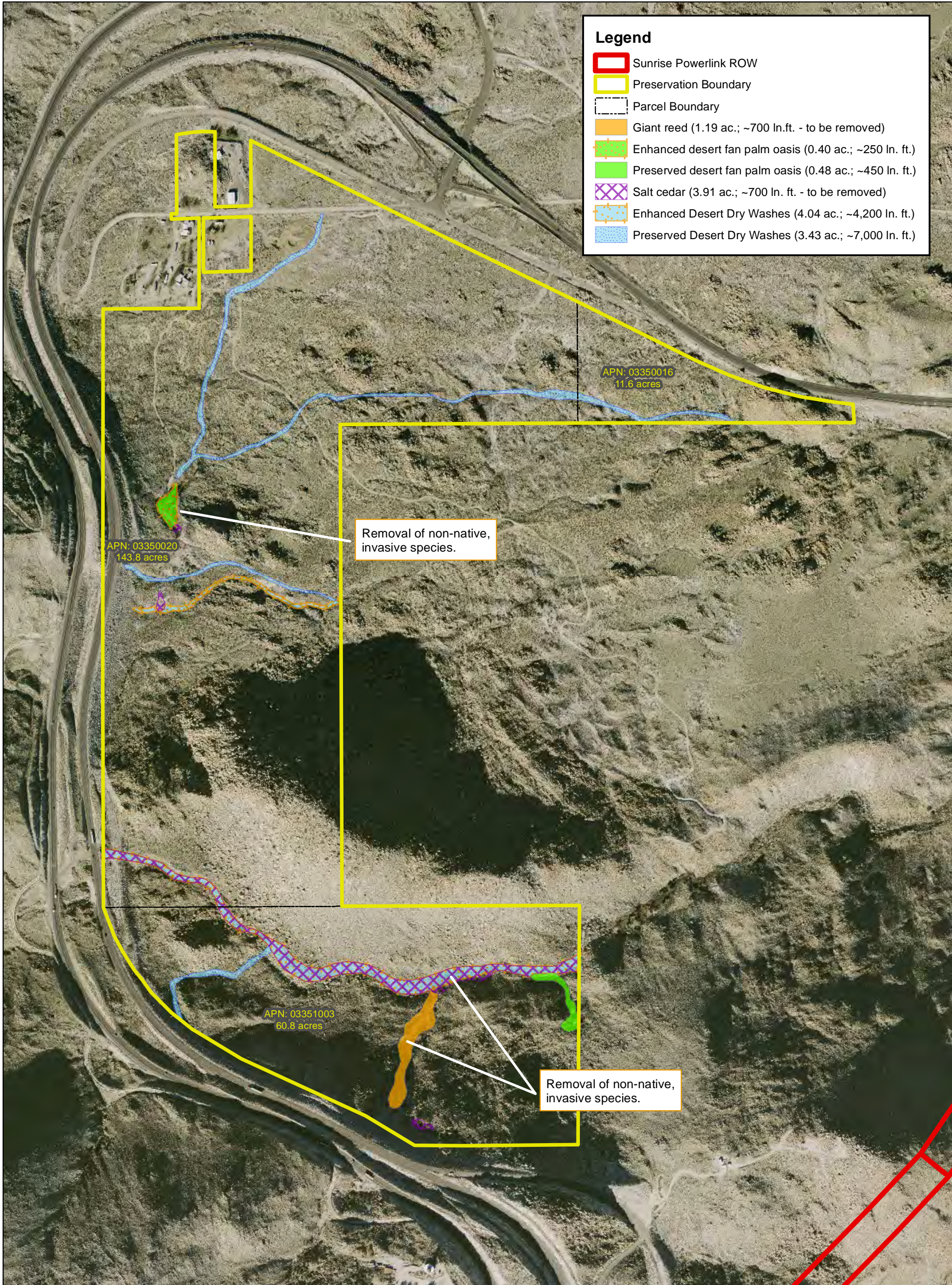
#### *Physical Structure*

The desert dry wash at the Suckle Mitigation Site assessed using CRAM is not anticipated to improve its score for the Physical Structure attribute by the end of the 5-year period projected for this study. The low score for this AA may reflect normal conditions for desert dry washes, and is not anticipated to improve within 5 years of mitigation implementation.

#### *Biotic Structure*

Scores for the Biotic Structure attribute are expected to increase from a 50.0 percent to a 55.6 percent for the Suckle AA. This increase would be due to a substantial increase in the Percent Invasion submetric score, from a “D” to a “B.” Proposed mitigation activities include removal of several invasive species that are currently prevalent in the AA, including giant reed, salt cedar, tocalote (*Centaurea melitensis*) and Saharan mustard. The other Biotic Structure metric and submetric scores for the Suckle AA are not expected to change.



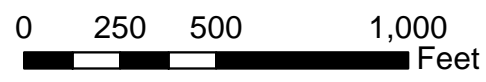
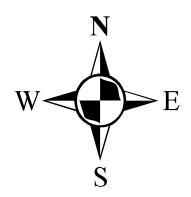


**Legend**

- Sunrise Powerlink ROW
- Preservation Boundary
- Parcel Boundary
- Giant reed (1.19 ac.; ~700 ln.ft. - to be removed)
- Enhanced desert fan palm oasis (0.40 ac.; ~250 ln. ft.)
- Preserved desert fan palm oasis (0.48 ac.; ~450 ln. ft.)
- Salt cedar (3.91 ac.; ~700 ln. ft. - to be removed)
- Enhanced Desert Dry Washes (4.04 ac.; ~4,200 ln. ft.)
- Preserved Desert Dry Washes (3.43 ac.; ~7,000 ln. ft.)

**Figure 6. Mitigation Activities at the Suckle Mitigation Site**

Sunrise Powerlink  
Imperial County, California



Map Date: November 2010  
 Map By: Derek Chan  
 Base Source: Imperial County  
 Filepath: L:\Acad 2000 Files\17000\17128-3\GIS\ArcMap\Mitigation\Suckle\Suckle\_Mitigation\_20101111.mxd



5.3.3 *Conclusions of CRAM Functional Assessment for Mitigation at the Suckle Mitigation Site*

As described in Section 5.2.1, CRAM assessments at the mitigation sites are representative of all mitigation activities for the SRPL project. The CRAM assessment at the Suckle Mitigation Site, in particular, highlights improvements to desert dry wash systems that will be affected by mitigation activities at this site. A comparison of existing and projected CRAM scores for the Suckle AA is presented in Table 7.

Mitigation activities for SRPL should provide improvements in the same areas of functional capacity that are likely to be impacted by the SRPL, as reflected in CRAM scores. A portion of the improvement will be obtained through mitigation activities at the Suckle Mitigation Site. Comparing existing CRAM scores to projected scores, it is possible to consider the nature and magnitude of likely improvements to functional capacity for the representative Suckle AA. CRAM scores for this AA are summarized in Table 7. Further CRAM information can be found in Appendix B of the Conceptual HMMP, and scores for individual sites are presented in Appendix A.

**Table 7. Average CRAM Attribute and Overall Scores for a Proposed Mitigation Site at the Suckle Mitigation Site.**

CRAM Index and Attributes	Existing (Baseline) Mean Scores	Projected Post-Project Mean Scores	Projected Increase Following Mitigation Implementation (percentage points)
Overall Index Score	68.1%	71.2%	3.1
Buffer & Landscape Context	93.3%	100.0%	6.7
Hydrology	91.7%	91.7%	0
Physical Structure	37.5%	37.5%	0
Biotic Structure	50.0%	55.6%	5.6

All CRAM attribute scores at impact sites are projected to have some level of decrease as a result of the SRPL, but the largest impacts would be in the areas of Hydrology and Buffer & Landscape Context (Table 4). Mitigation actions at the Suckle Mitigation Site should allow improvements in the areas of Buffer & Landscape Context and Biotic Structure that are apparent within 5 years of mitigation implementation. In addition, there is potential for further increases in CRAM scores for Hydrology once OHV use is discontinued at the site. However, indicators that would allow a higher CRAM score for this attribute may take longer to develop than the 5-year period discussed in this report. Projected average increases and decreases in CRAM score are depicted in Figure 7.

In conclusion, CRAM provides a basis for comparing impacts along the SRPL ROW to proposed mitigation actions. Using a number of different approaches, proposed actions at the Suckle Mitigation Site contribute to the overall mitigation package to compensate for the areas of functionality that are impaired by the SRPL project.



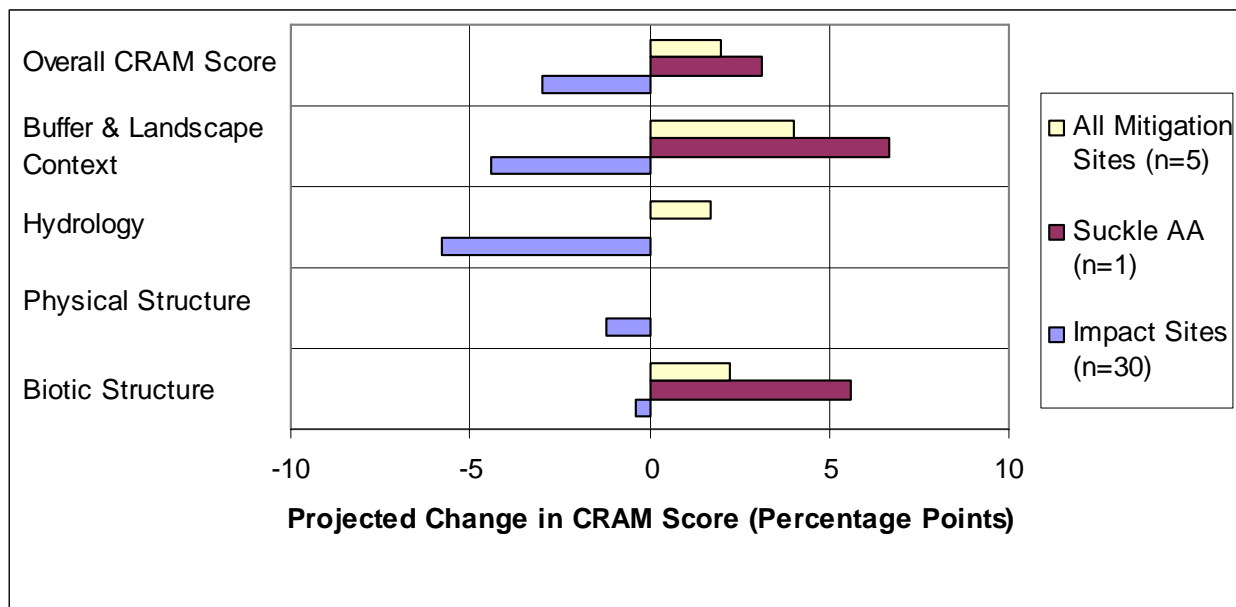


Figure 7. Projected Average Changes in CRAM Score at Stream Impact Sites and Stream Mitigation Sites 5 Years after Mitigation Implementation.

## 6.0 DETERMINATION OF CREDITS

The Suckle Mitigation Site contains two habitat types which will contribute to the overall mitigation acreage contained in the five mitigation properties: desert dry wash and wetland habitats. Within this site, compensation for permanent impacts to these habitats will be provided. Mitigation acreages and credits are discussed in more detail in the following sections.

### 6.1 Mitigation Credits within the Suckle Mitigation Site

The Suckle Mitigation Site provides 15 percent of the total SRPL mitigation acreage for desert dry washes and 5 percent of the project mitigation for wetlands. Additional credits for these habitat types are provided by the Long Potrero, Chocolate Canyon, Desert Cahuilla, and Lightner mitigation sites. A summary of mitigation acres provided by the Suckle Mitigation Site is presented in Table 8 below. A summary of collective mitigation acres provided by the entire mitigation program at all five sites is presented in Section 6.2.

Table 8. Summary of Sunrise Powerlink Aquatic Resource Mitigation at the Suckle Mitigation Site

Site	Resource Type	Mitigation Area [acres; linear feet for streams]			
		Preservation	Enhancement	Restoration	Total
Suckle Mitigation Site	Desert Dry Washes	3.43 (7,000)	4.04 (4,200)	-	7.47 (11,200)
	Wetlands	0.48	0.40		0.88
<b>Totals</b>		<b>3.91</b>	<b>4.44</b>	<b>0</b>	<b>8.35</b>

## **6.2 Summary of Mitigation Credits for Entire Mitigation Program at all Sites**

A summary of total mitigation for permanent and temporary impacts for each resource type is detailed in Table 9 for WOUS and in Table 10 for WOS. In addition, a summary of mitigation activities at each mitigation site for the SRPL project is contained in Table 11. On an acreage basis, the SRPL project provides more than adequate mitigation to compensate for unavoidable permanent impacts to jurisdictional areas. In addition, enhancement and restoration activities at four of the five mitigation sites will increase the functions and services provided by jurisdictional areas at the mitigation sites. Cumulatively, this provides ample mitigation to compensate for reduced functions and services in temporarily and permanently impacted jurisdictional areas.

Proposed mitigation activities for SRPL will provide improvements in the same areas of functional capacity that are likely to be impacted by the SRPL. Overall, the average projected decrease of 3 CRAM percentage points at stream impact sites will be offset by an average increase of 2 percentage points at stream mitigation sites at the end of the 5-year monitoring period, together with restoration, enhancement, and preservation of these areas at a cumulative 35:1 ratio by acreage for permanent impacts and 2:1 ratio for temporary impacts. CRAM scores for the Physical Structure and Biotic Structure attributes are likely to increase as the habitat areas develop over the long term, thus raising average overall CRAM scores further than are indicated herein for the term of the 5-year monitoring program.

Projected CRAM data at mitigation sites is intended to serve as a guide for comparison of mitigation and impacts, and should not be directly applied to mitigation ratios. The results of multiplying CRAM score by any dimension of size, such as wetland area, length, or perimeter, might distort the scaling of some metrics, weight the values of other metrics in unintended ways, and thus lead to erroneous results (CWMW 2009). Furthermore, areas of habitat preservation were not included in the CRAM analyses, but are valuable in maintaining the overall condition of their watersheds and protecting the mitigation jurisdictional features from negative external stressors such as edge effects.

**Table 9. Summary of Total Mitigation for Permanent and Temporary Impacts per Resource Type (based on Ordinary High Water Mark)**

Resource Type	Temporary Impacts		On-Site Mitigation (acres)	Permanent Impacts Impact (acres)	Offsite Mitigation (acres)			TOTAL MITIGATION (acres)
	Impact (acres)	Mitigation Ratio			Preservation	Enhancement	Restoration	
Desert Dry Washes	6.97	1:1	6.97	2.44	84.13 (DC)	(DC)	(DC)	<b>98.57</b>
					3.43 (S)	4.04 (S)	(S)	
					(LP)	(LP)	(LP)	
					(L)	(L)	(L)	
					(CC)	(CC)	(CC)	
<b>Subtotal</b>					<b>87.56</b>	<b>4.04</b>	<b>-</b>	
Streams with No Riparian Vegetation	0.54	1:1	0.54	0.33	(DC)	(DC)	(DC)	<b>4.93</b>
					(S)	(S)	(S)	
					1.39 (LP)	0.96 (LP)	(LP)	
					0.54 (L)	0.10 (L)	0.04 (L)	
					0.28 (CC)	1.08 (CC)	(CC)	
<b>Subtotal</b>					<b>2.21</b>	<b>2.14</b>	<b>0.04</b>	
Streams with Riparian Vegetation <sup>1</sup>	0	2:1	0	0.02	(DC)	(DC)	(DC)	<b>47.01</b>
					(S)	(S)	(S)	
					12.62 (LP)	3.95 (LP)	(LP)	
					15.83 (L)	0.63 (L)	3.43 (L)	
					10.25 (CC)	0.30 (CC)	(CC)	
<b>Subtotal</b>					<b>38.70</b>	<b>4.88</b>	<b>3.43</b>	
Wetlands	0	2:1	0	0.08	(DC)	(DC)	(DC)	<b>18.63</b>
					(S)	0.88 (S)	(S)	
					9.92 (LP)	5.99 (LP)	(LP)	
					0.20 (L)	0.63 (L)	(L)	
					0.99 (CC)	0.02 (CC)	(CC)	
<b>Subtotal</b>					<b>11.11</b>	<b>7.52</b>	<b>-</b>	

Abbreviations for Mitigation Sites:  
 DC= Desert Cahuilla Mitigation Site  
 S= Suckle Mitigation Site  
 LP= Long Potrero Mitigation Site  
 L= Lightner Mitigation Site  
 CC= Chocolate Canyon Mitigation Site

<sup>1</sup> Mitigation acreages for SRV's are referred to on figures and in text as "Riparian Habitat" preservation, enhancement, and restoration.

**Table 10. Summary of Total Mitigation for Permanent and Temporary Impacts per Resource Type (based on Top of Bank)**

Resource Type	Temporary Impacts		On-Site Mitigation (acres)	Permanent Impacts Impact (acres)	Offsite Mitigation (acres)			TOTAL MITIGATION (Onsite and Offsite acres)
	Impact (acres)	Ratio			Preservation	Enhancement	Restoration	
Desert Dry Washes	7.22	1:1	7.22	2.72	84.13 (DC)	(DC)	(DC)	<b>98.82</b>
					3.43 (S)	4.04 (S)	(S)	
					(LP)	(LP)	(LP)	
					(L)	(L)	(L)	
					(CC)	(CC)	(CC)	
<b>Subtotal</b>				<b>87.56</b>	<b>4.04</b>	<b>-</b>		
Streams with No Riparian Vegetation	0.97	1:1	0.97	0.35	(DC)	(DC)	(DC)	<b>5.36</b>
					(S)	(S)	(S)	
					1.39 (LP)	0.96 (LP)	(LP)	
					0.54 (L)	0.10 (L)	0.04 (L)	
					0.28 (CC)	1.08 (CC)	(CC)	
<b>Subtotal</b>				<b>2.21</b>	<b>2.14</b>	<b>0.04</b>		
Streams with Riparian Vegetation <sup>2</sup>	0.01	2:1 or 3:1	0.02 or 0.03	0.02	(DC)	(DC)	(DC)	<b>47.04</b>
					(S)	(S)	(S)	
					12.62 (LP)	3.95 (LP)	(LP)	
					15.83 (L)	0.63 (L)	3.43 (L)	
					10.25 (CC)	0.30 (CC)	(CC)	
<b>Subtotal</b>				<b>38.70</b>	<b>4.88</b>	<b>3.43</b>		
Wetlands	0	2:1	0	0.08	(DC)	(DC)	(DC)	<b>18.63</b>
					(S)	0.88 (S)	(S)	
					9.92 (LP)	5.99 (LP)	(LP)	
					0.20 (L)	0.63 (L)	(L)	
					0.99 (CC)	0.02 (CC)	(CC)	
<b>Subtotal</b>				<b>11.11</b>	<b>7.52</b>	<b>-</b>		

Abbreviations for Mitigation Sites:

- DC= Desert Cahuilla Mitigation Site
- S= Suckle Mitigation Site
- LP= Long Potrero Mitigation Site
- L= Lightner Mitigation Site
- CC= Chocolate Canyon Mitigation Site

<sup>2</sup> Mitigation acreages for SRV's are referred to on figures and in text as "Riparian Habitat" preservation, enhancement, and restoration.

**Table 11. Summary of Sunrise Powerlink Aquatic Resource Mitigation**

Site	Resource Type	Mitigation Area [acres; linear feet for streams]			
		Preservation	Enhancement	Restoration	Total
Desert Cahuilla	Desert Dry Washes	84.13 (24,400)			84.13 (24,400)
	Streams				
	Wetlands				
	Riparian				
Suckle Mitigation Site	Desert Dry Washes	3.43 (7,000)	4.04 (4,200)		7.47 (11,200)
	Streams				
	Wetlands	0.48	0.40		0.88
	Riparian				
Lightner Mitigation Site	Desert Dry Washes				
	Intermittent and Ephemeral Streams	0.54 (16,310)	0.10 (3,558)	0.04 (1,117)	0.68 (20,985)
	Wetlands	0.20	0.63		0.83
	Riparian	15.83	0.63	3.43	19.89
Long Potrero	Desert Dry Washes				
	Intermittent and Ephemeral Streams	1.39 (16,857)	0.96 (6,054)		2.35 (22,911)
	Wetlands	9.92	5.99		15.91
	Riparian	12.62	3.95		16.57
Chocolate Canyon	Desert Dry Washes				
	Perennial and Intermittent Streams	0.28 (9,051)	1.08 (3,162)		1.36 (12,213)
	Wetlands	0.99	0.02		1.01
	Riparian	10.25	0.30		10.55
<b>Totals</b>	<b>Desert Dry Washes</b>	<b>87.56</b>	<b>4.04</b>		<b>91.60</b>
	<b>Streams</b>	<b>2.21 (42,218)</b>	<b>2.14 (12,774)</b>	<b>0.04 (1,117)</b>	<b>4.39 (56,109)</b>
	<b>Wetland</b>	<b>11.11</b>	<b>7.52</b>		<b>18.63</b>
	<b>Riparian</b>	<b>38.70</b>	<b>4.88</b>	<b>3.43</b>	<b>47.01</b>

## 7.0 MITIGATION WORK PLAN

This section of the Final HMMP is divided into two parts. The first part provides a description of mitigation implemented for this mitigation site, with maps and tables showing acreages and locations of mitigation within the site. The second section describes implementation methods for general mitigation activities that will be performed at the mitigation site. These activities are generic in nature and will be referenced in appropriate sections where applicable.

### 7.1 Activities Planned at the Mitigation Site

Preservation and enhancement activities planned for this mitigation site are described in the following sections. Details regarding site preparation and Best Management Practices (BMPs) used throughout all of the mitigation sites are described in Section 7.2. Mitigation for the loss of desert dry wash and wetland functions and services within project impact areas will occur on this site.

The Suckle Mitigation Site was selected for mitigation based on the presence of desert dry washes, as well as desert fan palm oasis vegetation. The Suckle Mitigation Site is included as mitigation for project impacts to desert dry washes, and also offers the opportunity for preservation and enhancement of desert fan palm oasis wetland vegetation through the removal of the non-native, invasive salt cedar. Total area of cover of non-native, invasive plant species to be removed was assessed at this site by aerial imagery and site visits by WRA staff. Mitigation to be implemented at the Suckle Mitigation Site includes:

- Preservation of desert dry washes and surrounding upland habitat
- Preservation of desert fan palm oasis wetland vegetation
- Enhancement of desert dry washes and desert fan palm oasis vegetation through non-native, invasive plant species removal.

Mitigation acreage within the Suckle Mitigation Site is listed in Table 12 below. Mitigation activities planned for the Suckle Mitigation Site are shown in Appendix B and Figure 6, and each activity is described further in the text below.

**Table 12. Summary of Mitigation at the Suckle Mitigation Site**

Mitigation Action	Area (acres)	Length (linear feet)
<b>Desert Dry Washes</b>		
Desert Dry Wash Preservation	3.43	7,000
Desert Dry Wash Enhancement and Preservation	4.04	4,200
<b>Total Desert Dry Washes</b>	<b>7.47</b>	<b>11,200</b>
<b>Wetlands</b>		
Desert Fan Palm Oasis Enhancement and Preservation	0.88	-
<b>Total Wetlands</b>	<b>0.88</b>	-

**7.1.1 Preservation**

A total of 0.88 acre of wetlands and 7.47 acres of desert dry wash habitat within the Suckle Mitigation Site will be preserved through this mitigation action. Land use restrictions and long-term financing mechanisms will ensure that these waters and their surrounding habitats are preserved in perpetuity.

**7.1.2 Enhancement**

The entire 0.88 acre of wetland habitat will also be enhanced through the removal of non-native, invasive vegetation. In addition, 4.04 acres of the 7.47 acres of preserved desert dry washes will also be enhanced. Enhancement activities are described in more detail below.

Non-native, Invasive Plant Removal

Non-native, invasive plant species, or weeds, to be removed include those species listed on the California Invasive Plant Council (Cal-IPC; <http://www.cal-ipc.org/ip/inventory/weedlist.php>) as having a severe or moderate (A or B) invasive impact, including salt cedar, giant reed, and the non-grass annual plant species Saharan mustard. These non-native, invasive plant species will be removed from desert dry washes, desert fan palm oasis wetland vegetation, and surrounding areas within the Suckle Mitigation Site. Non-native, invasive grass species were not observed to be present on-site outside of sparse (less than 1 percent) cover similar to surrounding reference locations. In general, outside of desert dry wash bed and banks (confined system), non-native, invasive plant species did not occur. Therefore, efforts to remove and control non-native, invasive plant species will focus on salt cedar and giant reed that are currently present within the bed and banks of the channel (see Table 13).

**Table 13. Priority Non-native, Invasive Plants to be Removed at the Suckle Mitigation Site**

<b>Botanical Name</b>	<b>Common Name</b>	<b>Method of Control</b>
<i>Arundo donax</i>	giant reed	Giant Reed Control Method (Section 7.2.1)
<i>Brassica tournefortii</i>	Saharan mustard	Hand and Mechanical Removal (Section 7.2.1)
<i>Tamarix ramosissima</i> spp. <i>ramosissima</i>	salt cedar	Salt Cedar Control Method (Section 7.2.1)

Sequence and Timing

Mitigation will be implemented concurrent with project impacts to desert dry washes. Sequence and timing that is related to specific weed removal methods are described in Section 7.2.1.

**7.2 General Mitigation Implementation Methods and BMPs**

This section describes general methods for implementation of mitigation activities that would occur on the Suckle Mitigation Site. These activities include site preparation, weed removal, and erosion control BMPs that would be implemented as applicable to a given site. In addition, all mitigation activities will avoid impacts to nesting birds and will follow the breeding season dates listed in the SRPL Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS; Aspen Environmental Group 2008).

### *7.2.1 Implementation Methods for Control of Non-native, Invasive Plant Species*

Non-native, invasive plant species removal will be implemented as part of enhancement activities, during site preparation for restoration activities, and as part of long-term management activities throughout the project alignment (Recon Environmental Inc. 2010). Non-native, invasive plant species removal will target all Cal-IPC non-native, invasive annual and perennial plant species listed as having a severe or moderate (A or B) invasive impact with the exception of annual grass species which are abundant within reference locations. Non-native, invasive plant species removal methods to be implemented for each species are indicated in each of the invasive plant species control table (Table 13) above. Specifics on the implementation of these methods are described in more detail below.

In general and when feasible, live reproductive plant materials such as seed and rhizomes, will be removed from the site. Some areas of the site are remote and difficult to access, and it may not be feasible to remove plant material from these areas. In addition, some areas have extremely fragile habitats that could be damaged by attempting to remove large quantities of plant material. For these areas, the option of processing and disposing of plant material on-site in an appropriate manner will be determined by the land manager. In all cases, viable plant material will be processed and disposed of outside of the bed and banks of the channel. Plant material processing that may be proposed includes one or more of the methods that are listed below.

- Burning during appropriate time of year to prevent spread of fire
- Cutting material into manageable size and disposing of materials on-site to create brush piles for wildlife
- Removal of material from the site
- Burial of material

#### Weed Removal as Part of Site Preparation

Mowing will be one method used for initial removal of non-native, invasive plants to prepare restoration and enhancement areas, as appropriate, prior to the application of seeding and the installation of container plants. Based on the remoteness and topography of the mitigation sites, mowing will be implemented using weed-eaters (or “weed-whackers”) or similar trimmers with string or metal blades. This method may be used to minimize the extent and height of non-native annual herbs and grasses. Mowing will be used only if it will not have a deleterious effect on native plant species that are interspersed with the weeds.

#### Removal of Priority Weed Species

The removal of the priority weed species at the Suckle Mitigation Site, including Saharan mustard, will occur by manual methods, when possible. The removal methods of giant reed and salt cedar are described in separate sections below. Manual removal is the preferred method of removing most weed species from the site since ground disturbance and adverse effects to sensitive wildlife species will be minimized.

Removal of Saharan mustard will be performed first during the late winter or early spring when soils are moist enough to remove most plants without breaking the roots. A second removal effort will take place in late spring or early summer to remove any re-sprouted plants and ensure that the weed control area is weed free. Plant materials that are removed will be disposed of



carefully to prevent regeneration or spread. Weeds will be removed before the species sets seed. When this is not feasible, seed heads will be removed from plants prior to removal of the remaining plant. Seed heads of non-native, invasive plant species will be placed in plastic trash bags and removed from the project site for proper disposal. Saharan mustard will be removed twice during the spring during the 5-year monitoring period unless otherwise specified by the consulting biologist.

If manual removal methods are tried and found to be ineffective after two years of repeated treatment, or if the problem is too widespread for these methods to be practical, then alternative methods, such as chemical controls, may be implemented as described below. All of the methods described in this section will be adapted to each species based on its morphology and phenology.

### Herbicides

Herbicides will be used when manual removal methods are not effective and may be used in conjunction with manual removal methods for species that are known to be difficult to control. The project will use glyphosate-, triclopyr-, or imazapyr- based herbicides, such as Rodeo®, or other products that are approved for use near wetlands and streams. As an alternative to commercially manufactured herbicides, the project may use an organic alternative of horticultural vinegar (20 percent) spray or common household vinegar (5 percent) spray. Herbicides will not be used when rain is predicted within 24 hours after application. The owner and applicator must comply with all state and local regulations regarding the application of herbicides.

Herbicides will typically be applied using a localized spot-treatment method and applied in a manner that will eliminate or reduce drift onto native plants. The above ground plant material shall be removed from the site and disposed of at a municipal recycling center that is equipped to process and recycle green waste (Recon Environmental Inc. 2010). The removal shall be performed at a time when the plants do not have ripe seed. If this is not feasible, then seeds will be removed, placed in plastic bags and disposed of offsite. Seedlings and small plants may be hand-pulled, if it is determined to be acceptable by the consulting biologists.

### Giant Reed Removal

Currently, the preferred methods of giant reed removal in Southern California are the bend-and-spray and hook methods. Due to the height of giant reed (up to 20 feet tall) and interspersed with surrounding native vegetation, sensitive species, and/or water, these methods have proven effective for remotely located, small to moderately sized infestations (Newhouser 2008). Alternatively, the cut stump or direct foliar spray method can be used in areas where giant reed stems cannot be bent. Where giant reed is removed near the edge of streams, caution must be used so as not to allow any pieces of giant reed to fall in or near intermittent or perennial streams. Timing of giant reed stem spraying and removal is extremely important. Late summer through early fall (August to October) is the most effective time of year. Follow up spraying of resprouts must be done one month following the first treatment and up to five times within the first year. Giant reed removal will then occur on an annual basis during the monitoring period or as specified by the consulting biologist.

Using the bend-and-spray method, a worker bends the giant reed stems away from the native vegetation and another worker (the applicator) sprays the stems with the approved herbicide. The person prepping the giant reed grasps the cane with two hands between stem nodes and bends or snaps the cane so that it splits longitudinally without breaking off. If done properly, over

90 percent of the bent canes will remain intact for spraying. The nodes should not be bent as they tend to break off completely. Giant reed stems must remain alive to translocate herbicide to their rhizomes and kill the plant. Next, a fan shape should be created with the bent canes on the ground. With a crew of two or three workers to bend the giant reed stems, and one applicator, the removal team can rotate between three or four clumps of giant reed at a time.

The hook method allows the applicator to work solo, working the hook with the left hand (between pumping) and spraying herbicide with the right hand. Using a hook, the worker gathers up to 10 giant reed stalks to concentrate them for quicker application. This method uses the least amount of herbicide and has the least potential to overspray and risk of non-target plant species damage. The hook resembles a swimming pool rescue hook (8-foot wooden pole with an 18-inch PVC hook with an additional side hook on top) and was designed to reach up and pull giant reed stems down away from desirable vegetation to spray them. The hook is very useful on small patches of giant reed to reach the center of the clump. According to the hook technique, the worker inserts the hook vertically into the upright canes and then turns the hook horizontally to grab approximately 10 canes. The next step is to pull the stems towards you while stepping back and sliding the hook up the canes. As you slide the hook up the stems, the giant reed stems will bend toward you and you will be able to spray the full length of the cluster of stems in the hook.

The cut-stump method may be used in remote areas where giant reed stems cannot be bent to spray or in situations where a foliar spray application poses a significant risk to aquatic species, desirable vegetation, and other non-target species. It may also be used where standing, dead giant reed poses a fire hazard and when conducting a follow-up treatment on a small amount of regrowth. Using this method, giant reed stems are cut approximately one foot from the ground with a chainsaw, lopper, or machete. The stem stump is then immediately painted with herbicide within 1 minute of cutting to be effective. Dye will be added to the herbicide to mark treated stumps and ensure full coverage. When feasible, all cut biomass must be mulched and/or carried off site per the specific site management plan.

### Salt Cedar Removal

Salt cedar may be removed by hand or by using an herbicide application, depending on the size of the plants. Removal of salt cedar plants will occur between August and October, and resprouts will be removed between 4 and 6 months following the first removal. When feasible, all biomass must be removed and disposed of at an appropriate off-site location. Follow up spraying of resprouts must be done on an annual basis during the monitoring period and may be required multiple times each year to eliminate infestations.

When salt cedar plants are seedlings, hand pulling or a weed wrench can be used to remove individuals. Removing the entire plant, including the root system, ensures that plants do not resprout. For salt cedar saplings and trees, an herbicide treatment will be used. A triclopyr-based herbicide such as Garlon®4 or Remedy™ or imazapyr-based herbicide such as Arsenal® or Habitat® or other herbicides approved by the Environmental Protection Agency for aquatic settings can be used. All herbicides must be used according to the manufacturer's directions.

The cut-surface, girdle-spray, and basal bark methods of salt cedar removal involve the use of herbicide. The cut-surface method is the preferred method of salt cedar removal. Using this method, the salt cedar trees or saplings are cut within 6 inches of the ground surface. The stump surface is sprayed with herbicide immediately following the cuts. The dead plant biomass

is then removed from the site if feasible or disposed of in locations on site approved by the land manager.

The girdle-spray and basal bark methods can be used in places where removal of the dead plant biomass is prohibitive due to site conditions and with approval by the consulting biologist. The girdle-spray method is used on salt cedar trees with trunk diameters of 4 inches or greater. The trees are girdled by the creation of shallow, overlapping cuts around the trunk. Herbicide is applied to the cut surface immediately following girdling. The basal bark method can be used on salt cedar trees with diameters of less than 4 inches. Using the basal bark treatment, an herbicide mixture is applied to the lowest 12 inches of the plant. Following the girdle-spray or basal bark treatments, the plants can be left in place to die and be retreated if necessary. Any seed heads on the plants will be removed and brought off site, however.

### *7.2.2 Erosion Control Measures*

Erosion control measures will be utilized in areas that involve grading and in conjunction with any mitigation activities that result in bare ground. These areas will be covered with rice straw to protect the surface from erosion. In areas where the slope is greater than 3:1 (horizontal to vertical), straw wattles, straw bales, and/or silt fence may be installed to reduce the velocity of runoff and trap sediment. Wattles, bales and silt fence will either be biodegradable or will be removed as part of the mitigation, when they are no longer needed.

## **8.0 MAINTENANCE PLAN**

Maintenance activities are summarized in the following sections. The maintenance plan for the first 5 years (start-up period) in the HAP/HMP area is described fully in the HAP/HMP (SDG&E 2010) and summarized below.

### **8.1 Maintenance Activities within Mitigation Areas**

On going removal of non-native, invasive plant species will occur in the mitigation areas as needed based on the methods specified in Section 7.2.1. Methods for control of invasive species will be selected based on the best available techniques as informed by practices of adaptive management through annual monitoring during the initial 5-year monitoring period.

### **8.2 Maintenance Activities within HAP/HMP Area**

As stated in the HAP/HMP (SDG&E 2010), the following maintenance activities for wetlands and waters will take place within HAP/HMP Area's on the Suckle Mitigation Site:

- Access control and maintenance of signage
- Control of invasive plant species
- Erosion control along maintained roads and decommissioned roads
- Fire management in coordination with local fire agencies
- Monitoring and maintenance of illegal dumping and general trash removal

## 9.0 MONITORING REQUIREMENTS AND PERFORMANCE CRITERIA

### 9.1 As-built Conditions Reporting

As-built conditions reporting will take place at the end of the 120-day establishment period and will serve to notify the agencies of the completion of construction. In addition, this will be reported as part of the first annual monitoring report for this mitigation site. As-built conditions reporting will include descriptions of grading and enhancement activities undertaken during mitigation implementation. If grading and enhancement activities take place during consecutive years, the reporting will occur as part of the annual reporting the first year following implementation at the mitigation site.

### 9.2 Initial Mitigation Monitoring Activities and Performance Criteria

The purpose of the project's mitigation monitoring program is to assess the effects of enhancement activities, as well as to provide guidance for habitat management in the event of negative environmental stressors that may affect ecosystem function. The project would use CRAM to provide quantitative evaluation of mitigation site waters during the initial monitoring period, as well as qualitative monitoring that would include monitoring and mapping of non-native invasive species, unnatural or excessive erosion, and other negative environmental stressors.

Monitoring at the mitigation site would be for a minimum 5-year period, with Year 1 beginning following the completion of mitigation action at the site and the completion of preservation agreements between SDG&E and the long-term land manager. Year 1 begins following completion of the mitigation action (e.g., non-native, invasive species removal for enhancement activities). Monitoring would continue on an annual basis until the site has met all performance criteria *and* all regulatory agencies have agreed in writing that the site has met performance criteria and is ready for transfer to the long-term manager. Monitoring methods are described below.

#### 9.2.1 Mapping of Desert Dry Washes and Desert Fan Palm Oasis

*Purpose:* Monitoring of total acreage and distribution of dry desert washes and desert fan palm oasis habitat on the mitigation site to provide information for management purposes.

*Timing:* Spring or summer following Years 1 and 5 of monitoring.

*Methods:* Mapping of desert dry washes and desert fan palm oasis habitat would be completed using Geographic Information System (GIS) based on high resolution (2-meter or less) aerial photographs taken during the respective monitoring year. The GIS mapping would then be confirmed in the field. The final maps and total acreage of desert dry washes and desert fan palm oasis present at the site will be reported in the annual monitoring report in Years 1 and 5.

*Performance Criteria:* Total acreage of desert dry washes and desert fan palm oasis habitat at the site may change under natural conditions during the course of the monitoring period. Such fluctuation may occur at the site as a natural process, and may result in an increase or a decrease in the total size and configuration of desert dry washes. If anthropogenic activities are determined to have resulted in a decrease in total acres of desert dry washes or desert fan palm oasis habitat in Year 5 of monitoring, appropriate management actions will be undertaken to address these issues and restore natural site hydrology.

### 9.2.2 *Quantitative CRAM Evaluation of Desert Dry Washes*

*Purpose:* Provide quantitative evaluation of preserved desert dry washes to inform adaptive management through comparison of CRAM scores from year to year.

*Methods:* CRAM methodology as developed by Southern California Coastal Water Research Project (SCCWRP) will be applied in Years 1, 3, and 5 within the established desert dry wash AA. Monitoring this AA will provide a standard baseline to allow comparison between CRAM scores across monitoring years. Evaluation of dry washes using CRAM will be led by certified CRAM practitioners trained in the use of CRAM to evaluate these habitats. The results of dry wash evaluations using CRAM will be presented as part of the monitoring reports and will verify that the sites have increased in value relative to performance standards.

*Performance Criteria:* CRAM scores will be used to evaluate the need for management action to address scores that decrease as a result of project activities. If CRAM scores decrease, reasons for the decrease will be reported as part of the annual monitoring report and appropriate management actions will be implemented.

### 9.2.3 *Qualitative Monitoring for Non-native, Invasive Species*

*Purpose:* To monitor non-native, invasive species to identify and re-treat any re-growth or new colonies prior to spreading.

*Methods:* Invasive species monitoring would occur on a quarterly basis the first year, bi-annual basis the second year, and annually thereafter. After the first two years, the mitigation site will be surveyed during each annual monitoring visit to map and describe the occurrence of negative environmental stressors. The site will also be surveyed for the locations of non-native, invasive species populations designated as a "High Priority" species by Cal-IPC (with the exception of annual grass species), and the overall success of the non-native, invasive species removal efforts will be assessed. For any observed non-native, invasive plant species, locations and extents of each population will be mapped. Other stressors to be evaluated include OHV use and anthropogenic sources of erosion and sedimentation. If environmental stressors are identified, the source of the stressor (for example, a cut fence resulting in OHV use, or off-site source population of invasive species) will be identified and described for management action.

*Performance Criteria:* Non-native, invasive species will be addressed immediately and a summary of the remedial activities and other management actions will be provided in each annual monitoring report. Annual non-native, invasive species populations will be managed so they do not exceed more than 5 percent cover within waters. Non-native, annual grass species will be controlled within waters for the duration of the monitoring period but are expected to be present due to their prolific nature within reference locations. Perennial non-native, invasive species, including salt cedar and giant reed, etc. will be managed on an annual basis such that there are no individuals left untreated for more than one 12-month period. Monitoring reports will contain a description of management activities performed each year based on the previous year's management recommendations. The success of management recommendations will also be evaluated as part of the adaptive management strategy for the site (see Section 11.0 below).

#### 9.2.4 Semiannual Wildlife Surveys

A qualified biologist will conduct semiannual surveys of mitigation areas to document the bird, wildlife, and fish use of the enhanced habitat areas. Wildlife surveys will be conducted in the spring and fall of each year; the exact timing will be determined by the consulting biologist. The surveys will be initiated after enhancement actions have occurred and will continue until the conclusion of the initial monitoring period. No performance criteria have been established for this task.

### 9.3 Monitoring Schedule and Reporting Requirements

With the exception of wildlife surveys, monitoring on the mitigation site will occur on a quarterly basis for the first year, bi-annually for the second year, and annually until performance criteria are met. Qualitative monitoring would be completed at the end of every year with quantitative monitoring (e.g. CRAM, vegetation transects or other data collection methods) would occur bi-annually (e.g. Year 1, 3, and 5). Wildlife surveys will be conducted twice annually throughout the 5-year monitoring period. Reporting will occur annually; reports for qualitative years (Year 2 and 4) will consist of a memorandum discussing the general condition of the site and management actions implemented in that year and/or recommended for the following year. A full report with analysis will be produced in quantitative monitoring years (Years 1, 3, and 5). Each monitoring report will include a summary of the two wildlife surveys conducted in that year.

Monitoring at this mitigation site will be completed during the late spring or early summer of each monitoring year. A mitigation monitoring report will be prepared for the mitigation site to enable clear communication to the land manager at this location. The report will be submitted to the Corps, CDFG, and SWRCB by December 31 of each monitoring year.

## 10.0 LONG-TERM MANAGEMENT PLAN

Long-term management for the Suckle Mitigation Site is described in the HAP/HMP (SDG&E 2010) for the SRPL Project, and is to be funded by a long term endowment based on a PAR. The timing for development of the long-term management plan is detailed in Conservation Measure G-CM-17 of the BO (USFWS 2010):

*(b) SDG&E will fully fund an endowment for in-perpetuity management of all parcels acquired in (c) within 3 months of the Wildlife Agencies' approval of the final endowment amounts.*

*(c) Unless otherwise authorized by the Wildlife Agencies, no later than 18 months from the date of the revised 2010 biological and conference opinion, SDG&E will acquire and permanently preserve the nine (9) parcels identified in the September 2010 HAP (referenced by name as Nabi, Lakeside Ranch, Hamlet, El Capitan, Chocolate Canyon, Lightner, Long Potrero, Suckle, and Desert Cahuilla) in a manner consistent with the HAP and the following provisions:*

- The land-owner, land management entity, conservation easement grantee, and endowment fund manager for each property will be approved by the Wildlife Agencies. SDG&E will coordinate efforts with the Wildlife Agencies to identify potential candidates and review their qualifications to hold and manage lands and/or*

*endowment funds. This task will be completed within 6 months of issuance of the 2010 revised biological and conference opinion.*

- *SDG&E will conduct a revised PAR or PAR-like analysis for each property once the land management entity for individual properties has been identified and approved by the Wildlife Agencies. This revised PAR will be used to determine the final endowment amount SDG&E will provide for in-perpetuity habitat management of each property.*
- *Conservation easement language, or its equivalent where an easement is not allowed by the land manager (State Parks), for all properties will be approved by the Wildlife Agencies prior to easement recordation; and*
- *SDG&E will complete the required acquisition, protection, and transfer of all properties and record the required conservation easements in favor of DFG, or other entity approved by the Wildlife Agencies, no later than 18 months after the start of the ground- or vegetation-disturbing activities.*

The PAR results for all land management activities including those necessary to maintain the wetlands and streams within the mitigation site are included in the HAP/HMP. The PAR provides the basis for long-term funding determinations. A preliminary summary of the conveyance, land use restrictions, and funding is provided in Table 14. A summary of the preliminary long-term endowment costs for the Suckle Mitigation Site is provided in Table 15.

### **10.1 Parties Responsible for Long-Term Management**

SDG&E proposes to convey the land to CDFG and ABDSP. Both entities have been approached as possible owners/land managers. Should neither entity accept, the Suckle Mitigation Site will then be conveyed to a conservancy selected in coordination with the resource agencies. The entity responsible for long-term management will be identified according to the schedule provided above.

### **10.2 Incorporation with Habitat Mitigation Plan for the Suckle Mitigation Site**

Long term management of wetlands and waters in the Suckle Mitigation Site is fully incorporated with the long term maintenance and monitoring described in the HAP/HMP.

### **10.3 Activities Included in Long-Term Management**

The entire mitigation site would be managed for conservation purposes, with emphasis on the wetland resources and habitat for two listed species: PBS and BBG. In addition, access would be restricted. Long-term management would also include control of non-native species, habitat and species monitoring, access control, and related measures. SDG&E will provide copies of the management plans that identify how access will be controlled.

**Table 14. Summary of elements of Long-Term Management for the Suckle Mitigation Site<sup>3</sup>. Details provided in HAP/HMP and BO.**

Land Use Restrictions	Par Analysis	Funding for Long-term Maintenance
Entire mitigation site would be managed for conservation purposes, with emphasis on the wetland resources and habitat for two listed species: PBS and BBG. Restricted access.	PAR Analysis provided in Sept. 2010 HAP/HMP.  Funding for Endowment provided 3 months after revised PAR and land management entity selected by Wildlife Agencies, SWRCB, and Corps.  Final easements and property ownership conveyed to management entity no later than 18 months after ground disturbance activities.	SDG&E will provide funding for perpetual management of the mitigation site; long-term costs estimated based on a PAR analysis of site maintenance and management of biological resources approved by Wildlife Agencies. Long-term management would include control of non-native species, habitat and species monitoring, access control, and related measures. SDG&E will provide copies of the management plans that identify how access will be controlled.

**Table 15. Preliminary Long-term Endowment Costs for Mitigation Properties.**

Endowment Total	Yearly Average Cost: First 5 years
\$1,119,518	\$29,784

### 11.0 ADAPTIVE MANAGEMENT PLAN

SDG&E will be the responsible party for implementation of management activities during the initial monitoring period. Specific maintenance and management activities will be identified based on the results of each annual monitoring visit. Maintenance and monitoring recommendations will be developed by September 15 of each year to allow time for planning and mobilization of work crews prior to the rainy season. Maintenance activities that involve work in waters and wetlands will be conducted prior to the onset of winter rains. Other maintenance activities will be conducted prior to the annual monitoring in the year following the recommendation.

As part of each annual monitoring report, maintenance and management activities implemented during the previous year will be described and the results will be evaluated under the framework of adaptive management. If management and maintenance methods are not successful in addressing negative environmental stressors identified as part of annual monitoring reports, the methods will be examined and altered to increase the potential for success based on best professional judgment and management methods that are shown to be successful based on scientific research. In some cases, success of management and maintenance activities may not be evident over the course of only one year. This will be accounted for in annual monitoring

<sup>3</sup> Long term management agency subject to Corps approval.



reports through evaluation of whether or not management actions are contributing to progress towards the ultimate goal. In these cases, it may be necessary to wait for two years or more before altering methods as part of an adaptive management strategy. Each annual monitoring report will contain a section dedicated to evaluation of management and maintenance actions as part of the adaptive management strategy.

### **11.1 Incorporation within Habitat Mitigation Plan for the Suckle Mitigation Site**

The principles of adaptive management are fully incorporated into the implementation, monitoring, maintenance, and long term management of the Suckle Mitigation Site described in this HMMP.

### **11.2 Natural Occurrences**

Contingencies have been included in the financial assurances (Section 12.0) to provide a cushion for any unforeseen costs of management activities to be carried out in the event that a fire, flood, or other natural disaster should have a negative impact on preserved and/or enhanced habitat during the initial monitoring period. The 5-year habitat management work programs (described fully in the HAP/HMP) includes a fire management component developed in cooperation with the responsible fire agencies and in compliance with applicable State and local policies and regulations. In addition, the fire management component of the long-term management plan will be updated every 3 years. Remedial actions will be carried out during the initial monitoring period if habitat quality is reduced due to the occurrence of fire and/or other natural disasters. Remedial actions will also be carried out during long-term management if habitat quality is reduced due to management activities. These actions are described in the HAP/HMP (SDG&E 2010) and summarized in the following section.

### **11.3 Potential Remedial Actions**

Habitat remediation consists of minor restoration of habitat from the effects of erosion, unauthorized access, or removal of non-native, invasive plant species; it is not considered ecological habitat restoration or creation. This task may include seeding with native seeds, raking, or weed removal. Habitat remediation is included during the initial monitoring (start-up) period for this mitigation site and is also an integral part of the habitat management in perpetuity.

## **12.0 FINANCIAL ASSURANCES**

### **12.1 Estimated Costs for Mitigation Measures**

#### *12.1.1 Land acquisition*

The owner is a willing seller, and the acquisition is in due diligence stage; therefore, acquisition costs will not be included in the preliminary mitigation cost estimate herein.

#### *12.1.2 Plan Implementation*

Implementation costs for the HMMP are estimated to be \$424,256, as shown in Table 16 below. Implementation tasks include mobilization and removal of non-native, invasive species.

*12.1.3 Monitoring and Maintenance for Performance Period*

Monitoring costs for the HMMP are estimated to be \$152,214, as shown in Table 16 below. These costs represent the first 5 years of monitoring. In addition, maintenance costs from the HAP/HMP are estimated to be \$203,276 for the first 5 years.

*12.1.4 Long-Term Maintenance*

Long-term endowment costs are estimated at \$970,596, as shown in Table 16 below. This endowment estimate is based on the amount of money needed to generate, on an annual basis, the annual maintenance costs (assuming a 5 percent return on the money and 3 percent inflation).

*12.1.5 Remediation*

Remediation costs are combined with maintenance costs in Table 16 below. Remediation efforts may include removal of non-native, invasive plants and minor stream habitat restoration.

**Table 16. Suckle Mitigation Costs**

	<b>Cost</b>
<b>First 5 Years</b>	
<b>Implementation Costs for HMMP</b>	\$424,256
<b>5-year Monitoring Costs for HMMP</b>	\$152,214
<b>Maintenance/Remediation</b>	\$203,276
<b>In Perpetuity</b>	
<b>Long-term Endowment Costs</b>	\$970,596

**12.2 Form of the Letter of Credit**

Financial assurance during the initial monitoring period will be guaranteed by SDG&E through issuance of a Letter of Credit. The dollar amount of the Letter of Credit will be based on the estimated cost of mitigation implementation to be determined upon acceptance of the mitigation plan by resource agencies and is subject to final approval by the Corps. The final dollar amount will be provided by SDG&E under separate cover upon issuance of project permits. Cost estimates for both the mitigation activities and initial management of the mitigation site described in this document are included in Appendix C.

### 13.0 REFERENCES

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- U.S. Department of Agriculture, Natural Resources Conservation Service (USDA). 2010a. Soil Survey of San Diego County, California. In cooperation with the University of California Agricultural Experiment Station.
- U.S. Department of Agriculture, Natural Resources Conservation Service (USDA). 2010b. Official List of U.S. Hydric Soils.
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- U.S. Fish and Wildlife Service (USFWS). 2010. Biological and Conference Opinion on the Construction and Long-term Operation and Maintenance Program for the Sunrise Powerlink Project, Imperial and San Diego Counties, California (FWS-08B04233-11F0047).
- WRA, Inc. 2010a. Preliminary Jurisdictional Determination Report. Prepared for SDG&E.
- WRA, Inc. 2010b. Conceptual Habitat Mitigation and Monitoring Report. Prepared for SDG&E.



Appendix A. All CRAM Scores Collected for the Sunrise Powerlink Project



Appendix A. All CRAM Scores Collected for the Sunrise Powerlink Project.\*

CRAM ID	Category	OVERALL CRAM SCORE		Buffer and Landscape Context										Hydrology							
				Landscape Connectivity		% of AA with Buffer		Average Buffer Width		Buffer Condition		Attribute Score (Final %)		Water Source		Hydro-period/Channel Stability		Hydrologic Connectivity		Attribute Score (Final %)	
	Existing/Projected	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P		
5-DW-7	DDW	62.2%	58.4%	12	12	12	12	12	12	12	9	100.0%	93.3%	12	12	12	9	3	3	75.0%	66.7%
5-DW-8	DDW	71.5%	67.8%	12	12	12	12	12	12	12	9	100.0%	93.3%	12	12	12	9	9	9	91.7%	83.3%
7-DW-10	DDW	64.0%	62.0%	12	12	12	12	12	12	9	6	93.3%	85.4%	12	12	9	9	12	12	91.7%	91.7%
8-DW-2	DDW	65.3%	65.3%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	9	9	12	12	91.7%	91.7%
9-DW-9	DDW	71.2%	69.2%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	12	9	12	12	100.0%	91.7%
10-DW-1	DDW	72.7%	72.7%	12	12	12	12	12	12	6	6	85.4%	85.4%	12	12	9	9	12	12	91.7%	91.7%
11-DW-1	DDW	62.0%	62.0%	12	12	12	12	12	12	6	6	85.4%	85.4%	12	12	9	9	12	12	91.7%	91.7%
13-DW-15	DDW	65.3%	63.3%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	12	9	6	6	83.3%	75.0%
14-DW-12	DDW	69.1%	65.3%	12	12	12	12	12	12	12	9	100.0%	93.3%	12	12	12	9	12	12	100.0%	91.7%
15-DW-1	DDW	68.8%	68.8%	12	12	12	12	12	12	12	12	100.0%	100.0%	12	12	9	9	9	9	83.3%	83.3%
15-DW-8	DDW	71.2%	67.4%	12	12	12	12	12	12	12	9	100.0%	93.3%	12	12	12	9	12	12	100.0%	91.7%
16-DW-11	DDW	68.6%	68.6%	12	12	12	12	12	12	6	6	85.4%	85.4%	12	12	9	9	12	12	91.7%	91.7%
17-DW-2	DDW	71.2%	71.2%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	9	9	12	12	91.7%	91.7%
17-DW-7	DDW	63.3%	61.2%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	12	9	6	6	83.3%	75.0%
35-S-2	ME	67.4%	67.4%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	9	9	6	6	75.0%	75.0%
35-S-4	ME	70.5%	70.5%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	9	9	12	12	91.7%	91.7%
53-S-8	ME	78.5%	74.7%	12	12	12	12	12	12	12	9	100.0%	93.3%	12	12	12	9	12	12	100.0%	91.7%
54-S-10	ME	63.6%	63.6%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	6	6	3	3	58.3%	58.3%
62-S-12	ME	80.2%	80.2%	12	12	12	12	12	12	12	12	100.0%	100.0%	12	12	9	9	9	9	83.3%	83.3%
79-S-1	ME	83.4%	81.3%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	12	9	12	12	100.0%	91.7%
82-S-1	I	83.3%	79.6%	12	12	12	12	12	12	9	12	100.0%	93.3%	12	12	12	9	12	12	100.0%	91.7%
92-S-4	ME	72.6%	70.9%	12	12	12	12	12	12	12	9	100.0%	93.3%	12	12	9	9	9	9	83.3%	83.3%
92-S-6	ME	82.6%	78.9%	12	12	12	12	12	12	12	9	100.0%	93.3%	12	12	12	9	12	12	100.0%	91.7%
107-S-2	ME	72.3%	68.2%	12	12	12	12	12	12	9	6	93.3%	85.4%	12	12	12	9	12	12	100.0%	91.7%
107-S-3	ME	67.8%	65.8%	12	12	12	12	12	12	9	6	93.3%	85.4%	12	12	9	9	3	3	66.7%	66.7%
109-S-1	I	87.8%	49.1%	12	3	12	6	12	9	12	9	100.0%	46.4%	12	6	9	3	12	6	91.7%	41.7%
111-S-9	I, W	82.0%	79.9%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	12	9	3	3	75.0%	66.7%
112-S-2	I, W	80.4%	78.4%	12	12	12	12	9	9	6	6	82.9%	82.9%	12	12	12	9	12	12	100.0%	91.7%
117-S-1	P	81.0%	81.0%	3	3	12	12	12	12	9	9	55.8%	55.8%	9	9	9	9	12	12	83.3%	83.3%
130-S-1	ME	69.2%	67.1%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	12	9	6	6	83.3%	75.0%
L-S-10	I	88.3%	95.8%	12	12	12	12	12	12	9	12	93.3%	100.0%	6	9	12	12	12	12	83.3%	91.7%
L-S-1	I	78.5%	80.2%	12	12	12	12	12	12	9	12	93.3%	100.0%	12	12	12	12	12	12	100.0%	100.0%
L-W-2	W	65.0%	69.2%	3	3	12	12	12	12	9	9	55.8%	55.8%	12	12	12	12	12	12	100.0%	100.0%
LP-S-12	I	70.5%	71.2%	12	12	12	12	12	12	9	9	93.3%	93.3%	12	12	9	9	12	12	91.7%	91.7%
LP-W-4**	W	59.4%	61.8%	3	3	12	12	12	12	9	12	55.8%	62.5%	12	12	10.5	10.5	12	12	95.8%	95.8%
S-DW-1	DDW	68.1%	71.2%	12	12	12	12	12	12	9	12	93.3%	100.0%	12	12	9	9	12	12	91.7%	91.7%
117-S-1	P	81.0%	81.7%	3	3	12	12	12	12	9	9	55.8%	55.8%	9	9	9	9	12	12	83.3%	83.3%

Impact AA  
Mitigation AA

Key to Categories

DDW = Desert Dry Wash; ME = Mountain Ephemeral Stream; I = Intermittent Stream; P = Perennial Stream; W = Corps Wetland.

\* Note: The data table in Appendix A was originally included in Appendix B of the Conceptual HMMP (WRA 2010b), titled "Table B-1."

\*\* The CRAM score reported for depressional wetland (proposed mitigation site) LP-W-4 is the average of two CRAM assessments done on the same feature. This approach was requested by staff from the US Army Corps of Engineers.





Appendix B. Grading and Landscape Plans for the Suckle Mitigation Site

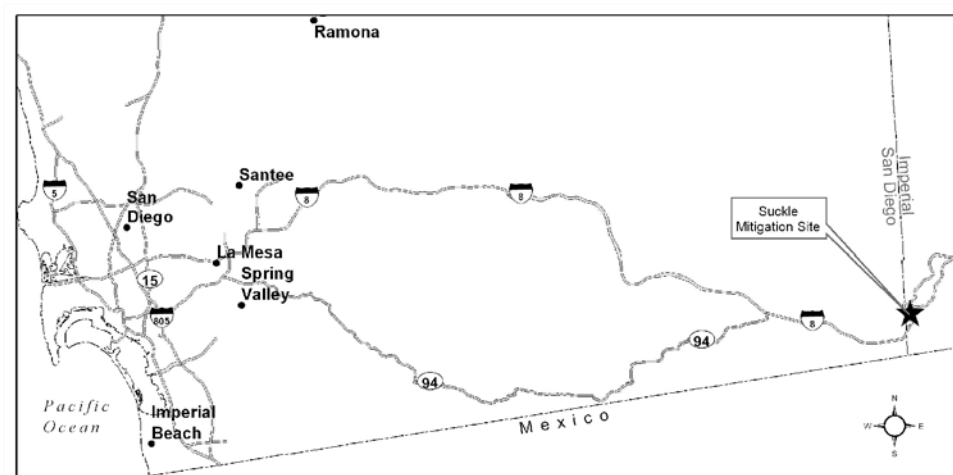
# SHEET INDEX

- L-1 --- COVER SHEET
- L-2 --- SUCKLE PROPERTY MITIGATION PLAN

## SUNRISE POWERLINK

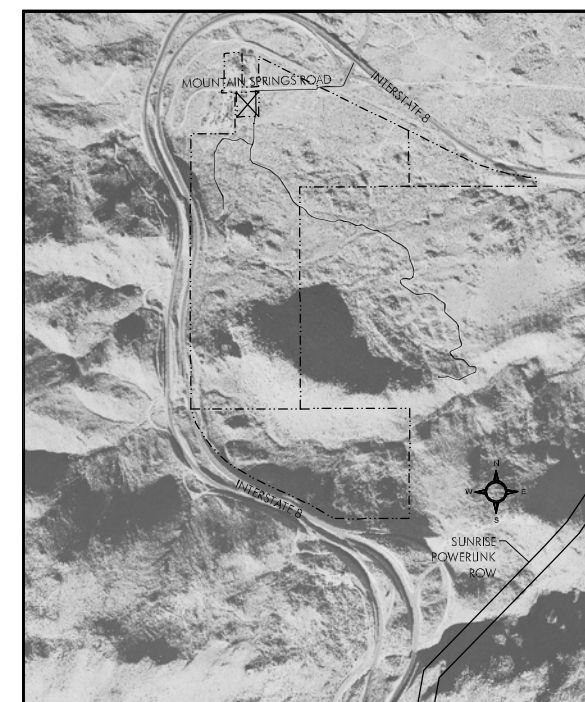
SUCKLE PROPERTY  
 WATERS MITIGATION PLAN  
 SAN DIEGO COUNTY, CALIFORNIA  
 CORPS FILE NUMBER: 2007-00704-SAS

### LOCATION MAP



- NOTES:
1. MITIGATION SITE MAY BE ACCESSED VIA INTERSTATE 8.
  2. CONTRACTOR SHALL NOT ACCESS SITE WITHOUT PRIOR PERMISSION FROM LAND MANAGER.

### SITE MAP



DIRECTIONS TO SITE:  
 FROM INTERSTATE 5, TAKE INTERSTATE 8 EAST AND EXIT RIGHT AT MOUNTAIN SPRINGS ROAD.

NOT FOR CONSTRUCTION



Date	Issues And Revisions	No.
11/12/10	PERMIT SET	

PROJECT #17128-3  
 DRAWN BY: ICM, KET  
 CHECKED BY: GJS  
 ORIGINAL DRAWING SIZE: 24 X 36



COVER SHEET

Sheet

# L-1

**SUNRISE  
 POWERLINK**

SUCKLE PROPERTY  
 WATERS MITIGATION PLAN  
 SAN DIEGO COUNTY, CALIFORNIA  
 CORPS FILE NUMBER: 2007-00704-SAS

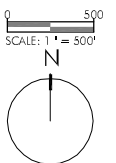
NOT FOR CONSTRUCTION



11/12/10	PERMIT SET	
Date	Issues And Revisions	No.

PROJECT #17128-3  
 DRAWN BY: ICM, KET  
 CHECKED BY: GIS  
 ORIGINAL DRAWING SIZE: 24 X 36

SCALE: 1" = 500'



SUCKLE PROPERTY  
 MITIGATION PLAN

Sheet

**L-2**

**GENERAL SITE DESCRIPTION**

1. ACCESS TO AND FROM THE MITIGATION AREAS CAN BE DIFFICULT, MOST NOTABLY TO AREAS WITHIN THE SOUTHERN STREAM CHANNEL AREA. THE SOUTHERN CHANNEL LIES WITHIN A CANYON WITH STEEP SLOPES. THE TERRAIN IS ROCKY AND MOVEMENT THROUGH THE AREA IS INHIBITED BY DENSE CACTI AND OTHER WOODY SHRUBS. IT IS EXPECTED THAT THE NORTHERN AND CENTRAL MITIGATION AREAS ARE SIMILAR TO THE TERRAIN IN THE SOUTHERN STREAM AREA.
2. THE VEGETATION AT THE SUCKLE PROPERTY IS PREDOMINANTLY SONORAN MIXED WOODY AND SUCCULENT SCRUB, INCLUDING DESERT PEACH, DESERT AGAVE, AND PRICKLY PEAR. THERE ARE SEVERAL NATIVE CALIFORNIA DESERT FAN PALM OASES LOCATED WITHIN THE STREAM CHANNELS.
3. THE LOCAL CLIMATE IS HOT AND DRY. CONDITIONS MAY BE PHYSICALLY CHALLENGING. WEED REMOVAL WORK WITHIN THE SITE MAY BE DANGEROUS DUE TO THE STEEP RUGGED TERRAIN, THE REMOTENESS OF THE SITE, AND EXTREME TEMPERATURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE HEALTH AND SAFETY OF WORKERS AT THE SITE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING POTABLE WATER AND PORTABLE RESTROOM FACILITIES AT THIS SITE. THE CONTRACTOR SHALL BE PROHIBITED FROM DISPOSING OF ANY HUMAN EXCREMENT AT THIS SITE.

**PROTECTION OF WILDLIFE, PLANT SPECIES AND NATURAL RESOURCES**

1. HABITAT WITHIN THE SITE HAS THE POTENTIAL TO SUPPORT SEVERAL SPECIAL STATUS WILDLIFE SPECIES, INCLUDING BATS, BAREFOOT BANDED GECKO ( *COLEONYX SWITAKI* ), AND PENINSULAR BIG HORN SHEEP ( *OVIS CANADENSIS NELSONI* ). CONTRACTORS SHALL AVOID CONTACT WITH WILDLIFE AND NOTIFY THE PROJECT BIOLOGIST OF ANY OBSERVATIONS OF SPECIAL STATUS WILDLIFE SPECIES.
2. NO FEDERAL OR STATE PROTECTED PLANT SPECIES ARE KNOWN TO OCCUR WITHIN THE SITE; HOWEVER, THE SITE MAY SUPPORT CNPS LISTED PLANT SPECIES. THE MAJORITY OF PLANTS NOT TARGETED FOR WEED REMOVAL ARE NATIVE AND SHALL NOT BE DISTURBED DURING WEED REMOVAL ACTIVITIES. THE DESERT FAN PALM HABITAT AND SURROUNDING SONORAN MIXED WOODY AND SUCCULENT SCRUB HABITAT SHALL NOT BE DAMAGED. THE CONTRACTOR SHALL OBTAIN A LIST OF SENSITIVE SPECIES FROM THE PROJECT BIOLOGIST.
3. WEED REMOVAL ACTIVITIES SHALL MINIMIZE DAMAGE TO THE NATIVE VEGETATION. DISTURBANCE TO SENSITIVE HABITAT OUTSIDE WEED REMOVAL AREAS SHALL BE PROHIBITED.
4. DESIGNATED ACCESS ROADS SHALL BE CONFIRMED BY THE PROJECT BIOLOGIST. USE OF OTHER ROADS SHALL BE PROHIBITED.
5. THE CONTRACTOR SHALL PROPOSE SUITABLE STAGING AREAS, WHICH SHALL BE APPROVED BY THE PROJECT BIOLOGIST. DUE TO THE STEEPNESS OF THE ADJACENT CANYON WALLS AND THE DENSITY OF SENSITIVE VEGETATION, THERE ARE LIMITED OPPORTUNITIES FOR ESTABLISHING STAGING AREAS OR AREAS TO PLACE BRUSH PILES.
6. HERBICIDES SHALL BE SELECTED TO AVOID HARM TO SENSITIVE SPECIES AND SHALL BE APPROVED BY THE PROJECT BIOLOGIST.
7. ALL WORK SHALL COMPLY WITH PROVISIONS LISTED IN THE PROJECT HABITAT MITIGATION AND MONITORING PLAN (HMP), FINAL ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT (FEIR/EIS), BIOLOGICAL ASSESSMENT, AND FINAL REGULATORY PERMITS.

**DISTRIBUTION OF WEEDS**

1. WEED REMOVAL WILL FOCUS ON THE TREATMENT OF SAHARAN MUSTARD AND DENSE STANDS OF GIANT REED, AND SALT CEDAR. LOCATION OF GIANT REED AND SALT CEDAR STANDS ARE MAPPED ON CONSTRUCTION PLANS.
2. SMALL PATCHES OF SAHARAN MUSTARD ARE LOCATED WITHIN THE STREAM CHANNEL AND ON THE STREAM BANKS. THE CANYON SIDE SLOPES ARE RELATIVELY FREE OF THE SPECIES.

**BEST MANAGEMENT PRACTICES FOR WEED REMOVAL**

1. AVOID IMPACTS TO NATIVE TREES AND SHRUBS AND ALL SENSITIVE SPECIES ON THE SITE.
2. AVOID DISTURBANCE AND DO NOT STAGE CONSTRUCTION ACTIVITIES IN WEED INFESTED AREAS.
3. AVOID AND MINIMIZE GROUND DISTURBANCE. SELECT WEED REMOVAL EQUIPMENT WHICH WILL MINIMIZE DISTURBANCE TO THE SOIL AND NATIVE VEGETATION WHENEVER POSSIBLE.
4. CLEAN VEHICLES BEFORE ENTERING OR LEAVING A WEED-INFESTED SITE OR CONSTRUCTION SITE TO PREVENT THE TRANSPORT OF SOIL AND PLANT MATERIAL.
5. REMOVE SEEDS FROM CLOTHING, FOOTWEAR, VEHICLES, AND EQUIPMENT BEFORE ENTERING AREAS WITH NO WEED INFESTATION.
6. COVER MATERIAL, INCLUDING DEAD WEED BIOMASS OR SOIL, SECURELY DURING TRANSPORT.

**MANUAL WEED REMOVAL AREAS**

**YEAR 1**

1. WEEDS WITHIN THE MANUAL WEED REMOVAL AREAS SHALL BE REMOVED AS DESCRIBED IN THE DRAWINGS.
2. WEED SPECIES DESIGNATED FOR MANUAL REMOVAL INCLUDE NON-NATIVE, INVASIVE PLANT SPECIES LISTED BY THE CALIFORNIA INVASIVE PLANT COUNCIL (CAL-IPC) AS HAVING A SEVERE OR MODERATE (A OR B) INVASIVE IMPACT. THESE WEED SPECIES SHALL BE DESCRIBED AND IDENTIFIED TO THE CONTRACTOR BY THE PROJECT BIOLOGIST. CONTRACTOR SHALL PROVIDE A WEED REMOVAL PLAN WHICH ADDRESSES EACH WEED SPECIES AND WEED REMOVAL LOCATION FOR APPROVAL BY THE PROJECT BIOLOGIST PRIOR TO ANY WEED REMOVAL ACTIVITIES.
3. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT BIOLOGIST TO DETERMINE THE EXACT TIMING OF WEED REMOVAL ACTIVITIES. CONTRACTOR SHALL REMOVE SEED HEADS FROM PLANTS PRIOR TO REMOVING THE STEMS AND ROOTS, IF THE PLANTS HAVE SET SEED.
  - A. PERENNIAL WEEDS SHALL BE REMOVED ONCE A MONTH DURING THE GROWING SEASON, OCCURRING BETWEEN APPROXIMATELY FEBRUARY 1 TO AUGUST 31. COMMON PERENNIAL WEEDS AT THE SITE INCLUDE CASTOR BEAN ( *RICINUS COMMUNIS* ) AND CURLY DOCK ( *RUMEX CRISPUS* ).
  - B. ANNUAL WEEDS SHALL BE REMOVED TWO TIMES DURING THE SPRING, ONCE BETWEEN APPROXIMATELY FEBRUARY 1 AND APRIL 15 AND ONCE BETWEEN APRIL 16 AND JUNE 30. COMMON ANNUAL WEEDS AT THE SITE INCLUDE SAHARAN MUSTARD ( *BRASSICA TOURNEFORTII* ), TOCALOTE ( *CENTAUREA MELITENSIS* ), AND SHORPOD MUSTARD ( *HIRSCHFELDIA INCANA* ).
4. WEEDS SHALL BE REMOVED WITH MANUAL TOOLS WHICH CAUSE MINIMAL GROUND DISTURBANCE. NATIVE SHRUBS OR TREES ADJACENT TO WEED REMOVAL AREAS SHALL NOT BE DISTURBED.
5. THE CONTRACTOR SHALL DISPOSE OF SEEDS, WEED CLIPPINGS AND DEAD PLANT BIOMASS WITH APPROVAL FROM THE PROJECT BIOLOGIST. THE CONTRACTOR SHALL CONTAIN SEEDS, WEED CLIPPINGS, AND DEAD PLANT BIOMASS IN BAGS. THE CONTRACTOR SHALL DISPOSE OF WEED CLIPPINGS IN DESIGNATED AREAS WITHIN THE SITE, AS FEASIBLE. THE METHOD OF ONSITE AND OFFSITE TRANSPORTATION OF REMOVING SEEDS, WEED CLIPPINGS, AND DEAD PLANT BIOMASS SHALL BE DETERMINED BASED ON THE SITE TOPOGRAPHY AND REMOTENESS.

**YEARS 2-5**

1. YEAR 2: ANNUAL WEEDS SHALL BE REMOVED TWO TIMES DURING THE SPRING, ONCE BETWEEN FEBRUARY 1 AND APRIL 15 AND ONCE BETWEEN APRIL 16 AND JUNE 30. PERENNIAL WEEDS SHALL BE REMOVED FOUR TIMES DURING THE GROWING SEASON, BETWEEN FEBRUARY 1 AND AUGUST 31. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT BIOLOGIST TO DETERMINE THE EXACT TIMING OF WEED REMOVAL ACTIVITIES.
2. YEARS 3-5: WEEDS SHALL BE REMOVED TWICE ANNUALLY AT A MINIMUM. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT BIOLOGIST TO DETERMINE THE EXACT TIMING OF WEED REMOVAL ACTIVITIES.
3. WEED REMOVAL METHODS SHALL BE ADAPTED AS NECESSARY BASED ON ANNUAL MONITORING RESULTS. THE PROJECT BIOLOGIST SHALL SPECIFY CHANGES TO WEED REMOVAL METHODS BY SEPTEMBER 15 OF EACH MONITORING YEAR.

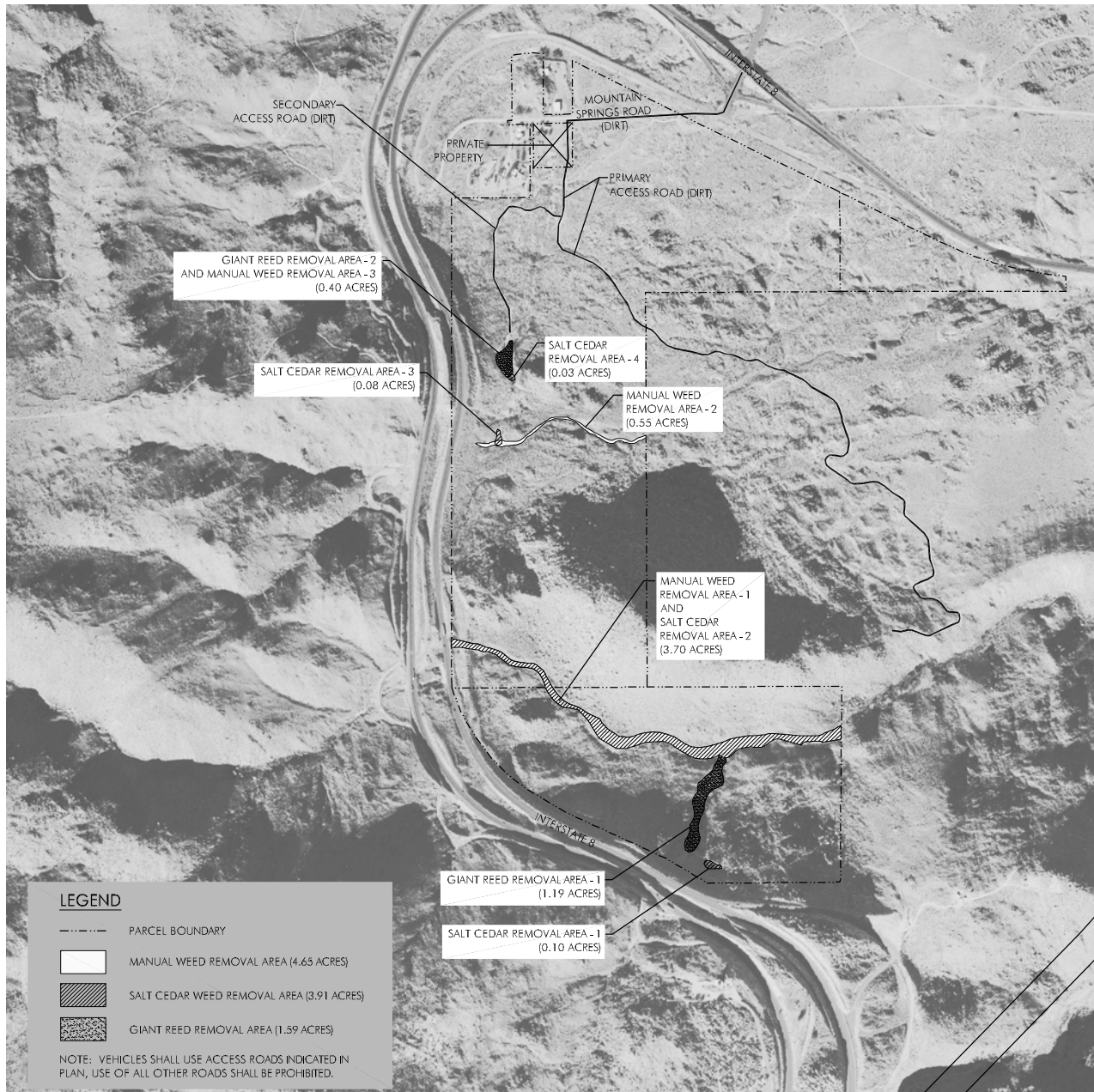
**GIANT REED REMOVAL AREAS**

**YEAR 1**

1. ALL GIANT REED ( *ARUNDO DONAX* ) PLANTS WITHIN THE GIANT REED REMOVAL AREAS SHALL BE REMOVED AS DESCRIBED IN THE DRAWINGS.
2. THE FIRST REMOVAL OF GIANT REED PLANTS SHALL OCCUR BETWEEN AUGUST 1 AND OCTOBER 31. GIANT REED PLANTS SHALL BE RETREATED APPROXIMATELY ONE MONTH FOLLOWING THE FIRST TREATMENT AND THEN UP TO FIVE TIMES DURING THE FIRST YEAR. EACH TREATMENT SHALL BE ONE TO TWO MONTHS APART. GIANT REED RESPROUTS SHALL BE CUT BACK PRIOR TO HERBICIDE REAPPLICATION WHENEVER FEASIBLE. EXACT TIMING OF REMOVAL ACTIVITIES SHALL BE COORDINATED WITH THE PROJECT BIOLOGIST.
3. THE IMAZAPYR-BASED HERBICIDE HABITAT OR APPROVED EQUIVALENT SHALL BE USED FOLLOWING THE LABEL DIRECTIONS AND REQUIREMENTS. DYE SHALL BE ADDED TO THE HERBICIDE MIX TO MARK TREATED PLANTS. CONTRACTOR SHALL SUBMIT HERBICIDE INFORMATION AND THE APPLICATION REGIME FOR APPROVAL BY THE PROJECT BIOLOGIST.
4. GIANT REED REMOVAL METHODS SHALL BE DETERMINED BASED ON SITE CONDITIONS AND CONSTRAINTS. THE CONTRACTOR SHALL SUBMIT A GIANT REED REMOVAL PLAN TO THE PROJECT BIOLOGIST FOR APPROVAL PRIOR TO ANY REMOVAL ACTIVITIES. THE CONTRACTOR SHALL USE THE FOLLOWING REMOVAL METHODS:
  - A. CUT-STUMP METHOD: CONTRACTOR SHALL CUT PLANTS WITH THE USE OF CHAINSAWS, A HYDRO AXE (AN ARTICULATED TRACTOR WITH A MOWER/MULCHER MOUNTED ON FRONT), SHREDDER, OR OTHER APPROVED METHOD TO SEVER THE PLANTS AT THE BASE. HERBICIDE SHALL BE APPLIED TO THE STUMPS IMMEDIATELY AFTER CUTTING THE STEMS.
  - B. BEND AND SPRAY METHOD: CONTRACTOR SHALL BEND PLANTS BETWEEN STEM NODES NEAR THE BASE OF EACH PLANT SO THAT THEY ARE FLAT TO THE GROUND. CONTRACTOR SHALL THEN SPRAY GIANT REED PLANTS WITH HERBICIDE.
  - C. HOOK METHOD: CONTRACTOR SHALL USE A HOOK TO PULL DOWN GIANT REED CANES TO DESIRABLE POSITION. A HOOK SHALL CONSIST OF AN APPROXIMATELY 8'-LONG WOODEN POLE WITH AN 18" POLYVINYL CHLORIDE (PVC) HOOK ATTACHED TO THE POLE. HERBICIDE SHALL THEN BE APPLIED TO FOLIAGE.
5. THE CONTRACTOR SHALL DISPOSE OF GIANT REED BIOMASS WITH APPROVAL FROM THE PROJECT BIOLOGIST. THE CONTRACTOR SHALL CONTAIN THE BIOMASS IN BAGS. THE METHOD OF ONSITE AND OFFSITE TRANSPORTATION OF REMOVING BIOMASS SHALL BE DETERMINED BASED ON THE SITE TOPOGRAPHY AND REMOTENESS.

**YEARS 2 - 5**

1. GIANT REED REMOVAL SHALL OCCUR ON AN ANNUAL BASIS DURING MONITORING YEARS 2-5 UNLESS OTHERWISE SPECIFIED BY THE PROJECT BIOLOGIST. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT BIOLOGIST TO DETERMINE THE TIMING OF HERBICIDE TREATMENT TO REMOVE GIANT REED PLANTS.
2. ALL NEW GIANT REED PLANTS WHICH HAVE NEWLY ESTABLISHED ON THE SITE AND ALL GIANT REED PLANTS, WHICH HAVE NOT RESPONDED TO HERBICIDE TREATMENT THE PREVIOUS YEAR, SHALL BE TREATED WITH HERBICIDE USING THE SAME PARAMETERS DESCRIBED IN THE YEAR 1 TREATMENT GUIDELINES, UNLESS OTHERWISE SPECIFIED BY THE PROJECT BIOLOGIST.



**1 WEED REMOVAL PLAN**  
 1" = 500'

**SALT CEDAR REMOVAL AREAS**

**YEAR 1**

1. ALL SALT CEDAR ( *TAMARIX RAMOSISSIMA* ) TREES WITHIN THE SALT CEDAR REMOVAL AREAS SHALL BE TREATED AS DESCRIBED IN THE DRAWINGS.
2. THE FIRST REMOVAL OF SALT CEDAR TREES SHALL OCCUR BETWEEN AUGUST 1 AND OCTOBER 31. THE CONTRACTOR SHALL RETURN TO THE SITE TO TREAT ANY RESPROUTING STUMPS BETWEEN FOUR AND SIX MONTHS FOLLOWING THE FIRST TREATMENT. EXACT TIMING OF REMOVAL ACTIVITIES SHALL BE COORDINATED WITH THE PROJECT BIOLOGIST.
3. A TRICLOPYR-BASED HERBICIDE SUCH AS GARLON 4 OR IMAZAPYR-BASED HERBICIDE SUCH AS HABITAT OR APPROVED EQUIVALENT SHALL BE USED FOLLOWING THE LABEL DIRECTIONS AND REQUIREMENTS. CONTRACTOR SHALL SUBMIT HERBICIDE INFORMATION AND THE APPLICATION REGIME FOR APPROVAL BY THE PROJECT BIOLOGIST.
4. SALT CEDAR REMOVAL METHODS SHALL BE DETERMINED BASED ON SITE CONDITIONS AND CONSTRAINTS. THE CONTRACTOR SHALL SUBMIT A SALT CEDAR REMOVAL PLAN TO THE PROJECT BIOLOGIST FOR APPROVAL PRIOR TO ANY REMOVAL ACTIVITIES. THE CONTRACTOR SHALL USE THE FOLLOWING REMOVAL METHODS:
  - A. CUT-SURFACE METHOD: THE CUT-SURFACE METHOD IS THE PREFERRED METHOD OF SALT CEDAR REMOVAL. SALT CEDAR TREES OR SAPLINGS SHALL BE CUT WITHIN SIX INCHES OF THE GROUND SURFACE. THE STUMP SURFACE SHALL BE SPRAYED WITH HERBICIDE IMMEDIATELY FOLLOWING CUTTING. SEEDLINGS SHALL BE UPROOTED BY HAND SUCH THAT THE ENTIRE ROOT SYSTEM IS REMOVED.
  - B. GIRDLE-SPRAY METHOD: THE GIRDLE-SPRAY METHOD MAY BE USED WITH APPROVAL BY THE PROJECT BIOLOGIST IN PLACES WHERE REMOVAL OF THE DEAD PLANT BIOMASS IS PROHIBITIVE DUE TO SITE CONDITIONS. SALT CEDAR TREES WITH TRUNK DIAMETERS OF OVER FOUR INCHES SHALL BE GIRDLED. THE CONTRACTOR SHALL MAKE SHALLOW, OVERLAPPING CUTS INTO THE BARK WITH A HATCHET OR CHAINSAW. HERBICIDE SHALL BE APPLIED TO THE ENTIRE CUT SURFACE IMMEDIATELY FOLLOWING THE CUTS. CONTRACTOR SHALL REMOVE SEED HEADS FROM SALT CEDAR TREES IF THE TREES HAVE SET SEED. THE REMAINING TREE BIOMASS SHALL BE LEFT IN PLACE AFTER THE HERBICIDE APPLICATION.
  - C. BASAL BARK METHOD: THE BASAL BARK METHOD MAY BE USED WITH APPROVAL BY THE PROJECT BIOLOGIST IN PLACES WHERE REMOVAL OF THE DEAD PLANT BIOMASS IS PROHIBITIVE DUE TO SITE CONDITIONS. SALT CEDAR TREES WITH TRUNK DIAMETERS LESS THAN FOUR INCHES SHALL BE TREATED USING THE BASAL BARK METHOD. HERBICIDE SHALL BE APPLIED TO THE LOWEST 12 INCHES OF EACH TRUNK. CONTRACTOR SHALL REMOVE SEED HEADS FROM THE SALT CEDAR TREES OR SAPLINGS IF THE PLANTS HAVE SET SEED. THE REMAINING TREE BIOMASS SHALL BE LEFT IN PLACE AFTER THE HERBICIDE APPLICATION.
5. THE CONTRACTOR SHALL DISPOSE OF SEED HEADS AND PLANT BIOMASS WITH APPROVAL FROM THE PROJECT BIOLOGIST. THE CONTRACTOR SHALL CONTAIN SEEDS IN BAGS. THE METHOD OF ONSITE AND OFFSITE TRANSPORTATION OF REMOVING SEEDS AND PLANT BIOMASS SHALL BE DETERMINED BASED ON THE SITE TOPOGRAPHY AND REMOTENESS.

**YEARS 2 - 5**

1. SALT CEDAR REMOVAL SHALL OCCUR ON AN ANNUAL BASIS DURING MONITORING YEARS 2-5, UNLESS OTHERWISE SPECIFIED BY THE PROJECT BIOLOGIST. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT BIOLOGIST TO DETERMINE THE TIMING OF THE REMOVAL.
2. ALL NEW SALT CEDAR TREES, WHICH HAVE ESTABLISHED ON THE SITE, AND ALL SALT CEDAR TREES, WHICH HAVE NOT RESPONDED TO HERBICIDE TREATMENT DURING THE PREVIOUS YEAR, SHALL BE TREATED WITH HERBICIDE USING THE SAME PARAMETERS DESCRIBED IN THE YEAR 1 TREATMENT GUIDELINES, UNLESS OTHERWISE SPECIFIED BY THE PROJECT BIOLOGIST.

Appendix C: Cost Estimate Table for Mitigation Activities at the Suckle Mitigation Site



**Appendix C. Mitigation Activities and Initial Management Cost Estimate at the Suckle Mitigation Site**

**1.0 Mobilization**

<u>Item</u>					
<u>Number</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Cost</u>
1.1	Mobilization	\$351,350	% of base cost	5%	\$17,568
<b>Subtotal</b>					<b>\$17,568</b>

**2.0 Removal of Non-Native, Invasive Plant Species**

<u>Item</u>					
<u>Number</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Cost</u>
2.1	Salt Cedar Removal	3.91	AC	\$50,000	\$195,500
2.2	Giant Reed Removal	1.19	AC	\$75,000	\$89,250
2.3	Removal of Non-Native Invasive Plants within Enhanced Dry Washes and Wetlands	4.44	AC	\$15,000	\$66,600
<b>Subtotal</b>					<b>\$351,350</b>

**3.0 Interim Maintenance and Monitoring (1-5 Years)**

<u>Item</u>					
<u>Number</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Cost</u>
3.1	Adaptive Management - Weed Removal	5	Annual	\$35,135	\$175,675
3.2	Adaptive Management - Trash Removal	5	Annual	\$217	\$1,087
3.3	Monitoring	5	Annual	\$25,210	\$152,214
<b>Subtotal</b>					<b>\$328,976</b>

<b>SUBTOTAL</b>	<b>\$697,894</b>
<b>15% Contingency*</b>	<b>\$81,852</b>
<b>TOTAL</b>	<b>\$779,746</b>

\*15% Contingency cost does not apply to monitoring (item 3.3)