

**2020 BIOLOGICAL MONITORING
REPORT FOR THE SANTA PAULA
CREEK MITIGATION BANK
VENTURA COUNTY, CALIFORNIA**



Prepared for:

U.S. ARMY CORPS OF ENGINEERS

On Behalf of:

SPC ENVIRONMENTAL HOLDINGS, INC.

3 July 2020

DMEC Mission Statement:

*To provide quality environmental consulting services, with integrity,
that protect and enhance the human and natural environment.*



2020 Biological Monitoring Report for the Santa Paula Creek Mitigation Bank Ventura County, California

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Cover Photo: View of the Santa Paula Creek floodplain looking upstream from the central part of the Santa Paula Creek Mitigation Bank property. Riparian vegetation now dominates Santa Paula Creek and provides nearly 100 percent canopy cover over the perennial stream channel. Photo taken on 29 May 2015.

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David Magney Environmental Consulting. 2020. 2020 Biological Monitoring Report for the Santa Paula Creek Mitigation Bank. 3 July 2020. (PN 12-0001.) Cedar Ridge, California. Prepared for U.S. Army Corps of Engineers, Regulatory Branch, Ventura, California. Prepared on behalf of SPC Environmental Holdings, Inc., Santa Paula, California.

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INTRODUCTION

This report is the seventh annual monitoring report for the SPC Environmental Holdings, Inc., property known as the Santa Paula Creek Mitigation Bank (SPCMB). This, and subsequent reports, will focus on the condition of the wetland and biological resources of the SPCMB property, identifying the condition of the plant communities and wildlife habitats and any conditions that have changed that are or could degrade wetland habitat functions.

PROJECT LOCATION

The SPCMB property is located in Santa Paula Canyon in the central portion of Ventura County, California, north of the City of Santa Paula and east of the community of Sulphur Springs along State Route 150, also known as the Ojai-Santa Paula Road. The property is located immediately east of the former Ferndale Ranch (Figure 1, Location Map of the SPCMB Property). The property exists within the Santa Paula Peak, California Quadrangle (7.5-minute USGS map) at the approximate geographic coordinates of 34.444586°N latitude and 119.071319°W longitude. The project site is at an elevation of approximately 1,190 feet to approximately 2,510 feet above mean sea level. Santa Paula Creek onsite ranges in elevation from 1,190 to 1,380 feet above mean sea level.

The project site consists of the wetlands and waters, plus buffers, portion of the property, as shown on Figure 2, Aerial Photograph of the SPCMB Property and Project Site. The project site is traversed by Santa Paula Creek, with several 1st order tributary streams. Santa Paula Creek is itself a tributary to the Santa Clara River.

BACKGROUND

SPC Environmental Holdings, Inc., owns 200 acres as one parcel (APN 040-002-008-5) in Santa Paula Canyon, Ventura County, California. The property was owned by Santa Paula Water Works LTD prior to the SPC Holdings purchasing it. With the approval of U.S. Army Corps of Engineers Regulatory Branch (Corps) in December 2011, SPC Holdings established a riverine wetlands preservation mitigation bank, referred to as the Santa Paula Creek Mitigation Bank (SPCMB). The long-term management plan associated with the Bank Enabling Instrument (between Corps, U.S. Environmental Protection Agency, California Department of Fish and Game, and SPC Environmental Holdings, Inc., dated 11 December 2011) requires annual monitoring efforts to assess the conditions of (1) waters of the U.S, including wetlands, (2) covered habitat, (3) threatened/endangered animal species, (4) non-native invasive species, (5) trash and trespassing.

The first (2013) annual monitoring report was prepared by BioResource Consultants, Inc. (BRC 2013), with subsequent annual monitoring reports prepared by David Magney Environmental Consulting (DMEC). Various previous biological resource surveys have been conducted on the property, these surveys include (in chronological order – complete citations are provided in the References Cited section of this report):

David Magney Environmental Consulting. 2007. Botanical Resources of the Lyons Property, Santa Paula Canyon, Ventura County, California.



Freel, Meaton, and C.G. Thelander. 2007. Review of Special-status Fish and Wildlife Resources of Santa Paula Creek, Ventura County, California.

Stillwater Sciences. 2007. Santa Paula Creek Watershed Planning Project: Steelhead Habitat and Population Assessment, Technical Memorandum.

David Magney Environmental Consulting. 2008. Delineation of Jurisdictional Wetlands at the Lyons Property, Santa Paula Canyon, Ventura County, California.

David Magney Environmental Consulting. 2009. Wetland Functional Assessment of the Lyons Property Mitigation Bank Project, Santa Paula Canyon, California.

David Magney Environmental Consulting. 2013. Proposed Expanded Service Area for Santa Paula Creek Mitigation Bank – Species Information. Letter to U.S. Army Corps of Engineers, Regulatory Branch, Ventura, California, contact Antal Szijj.

Cantle, Peter. 2013. Biological Survey Report for Santa Paula Creek Mitigation Bank.

Cooper, Daniel S. 2013. Special-status Bird Survey of Santa Paula Canyon Property, Ventura County, California.

PROJECT PURPOSE

The purpose of this report is to fulfill the requirements of the long-term management plan associated with the Bank Enabling Instrument for the Santa Paula Creek Mitigation Bank. This report summarizes the 2018 monitoring efforts to assess the conditions of:

1. waters of the U.S, including wetlands,
2. covered habitat,
3. threatened/endangered animal species,
4. non-native invasive species,
5. trash and trespassing, and any pertinent management recommendations regarding these criteria.

The results of previous monitoring are retained as well.

Figure 1. General Location Map

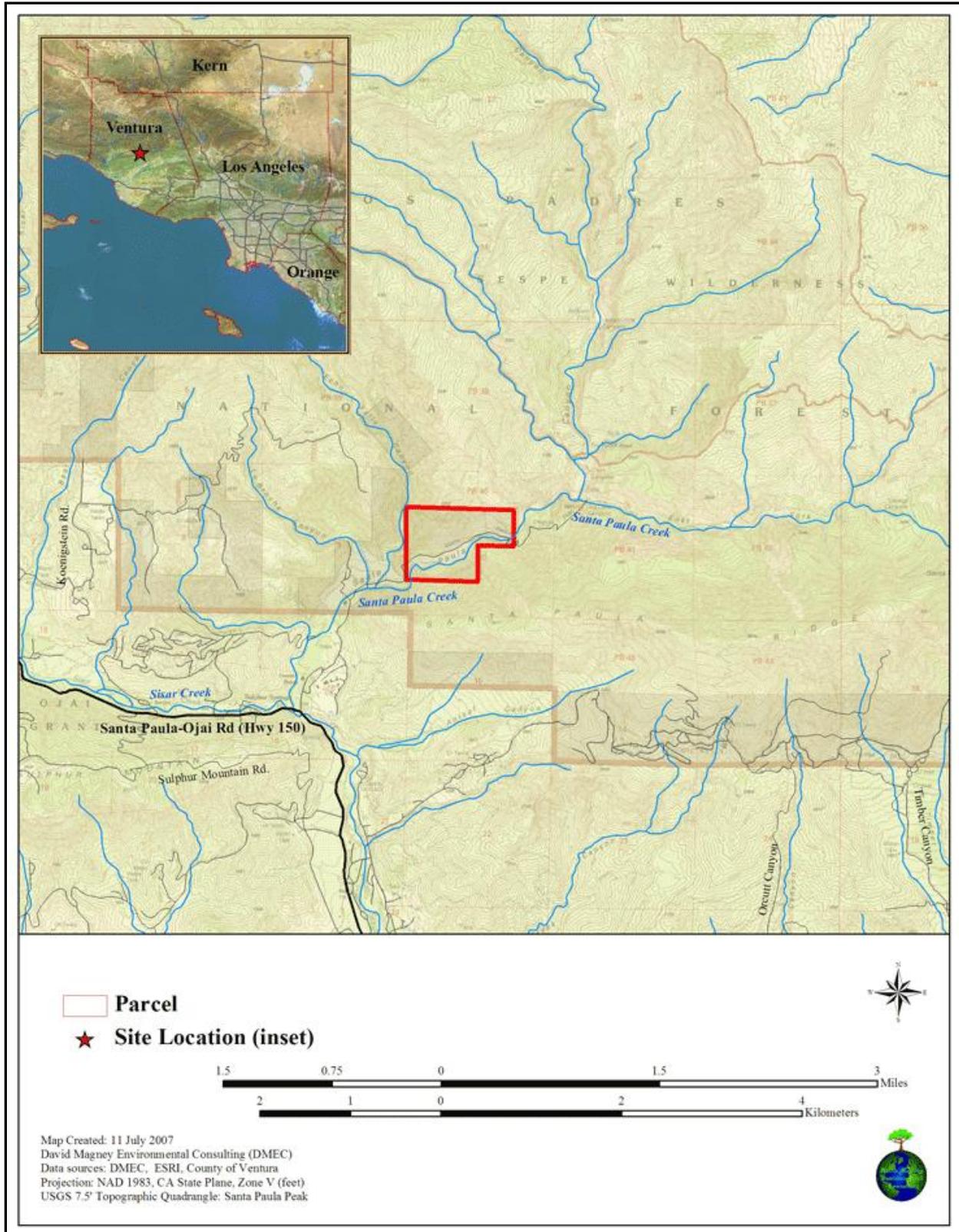
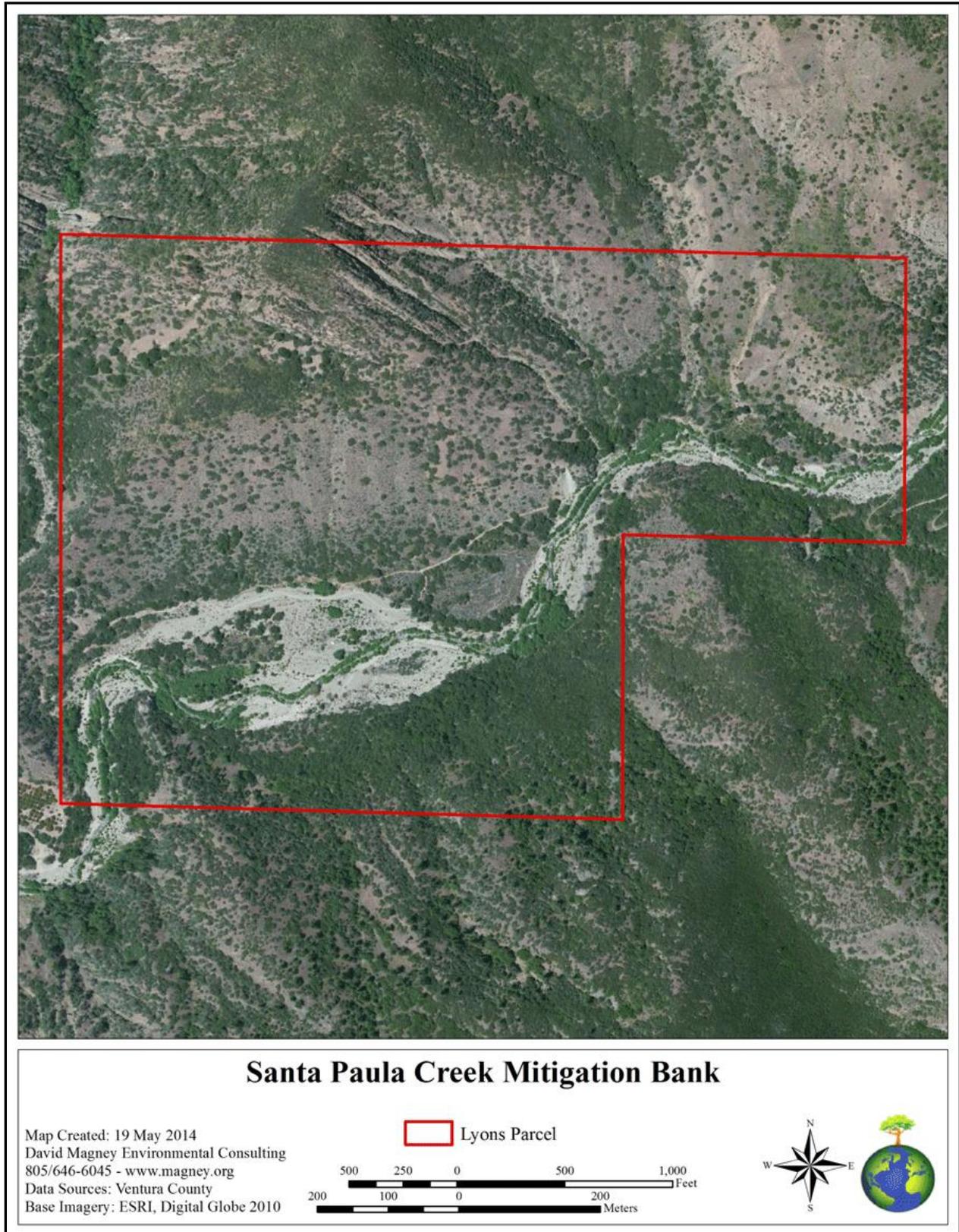


Figure 2. Aerial Photograph of the Santa Paula Creek Mitigation Bank



METHODS

Photostations were established by BioResource Consultants (BRC) in 2013; however, no permanent markers were established. Subsequent annual monitoring events attempted to revisit these original photo monitoring stations; however, as the habitat conditions change, subsequently finding the exact locations was not always successful or GPS signals were insufficiently strong enough to find the exact locations. Six photostations were originally established by BRC, as listed in Table 1, Locations of BRC 2013 Photostations.

Table 1. Locations of BRC 2013 Photostations

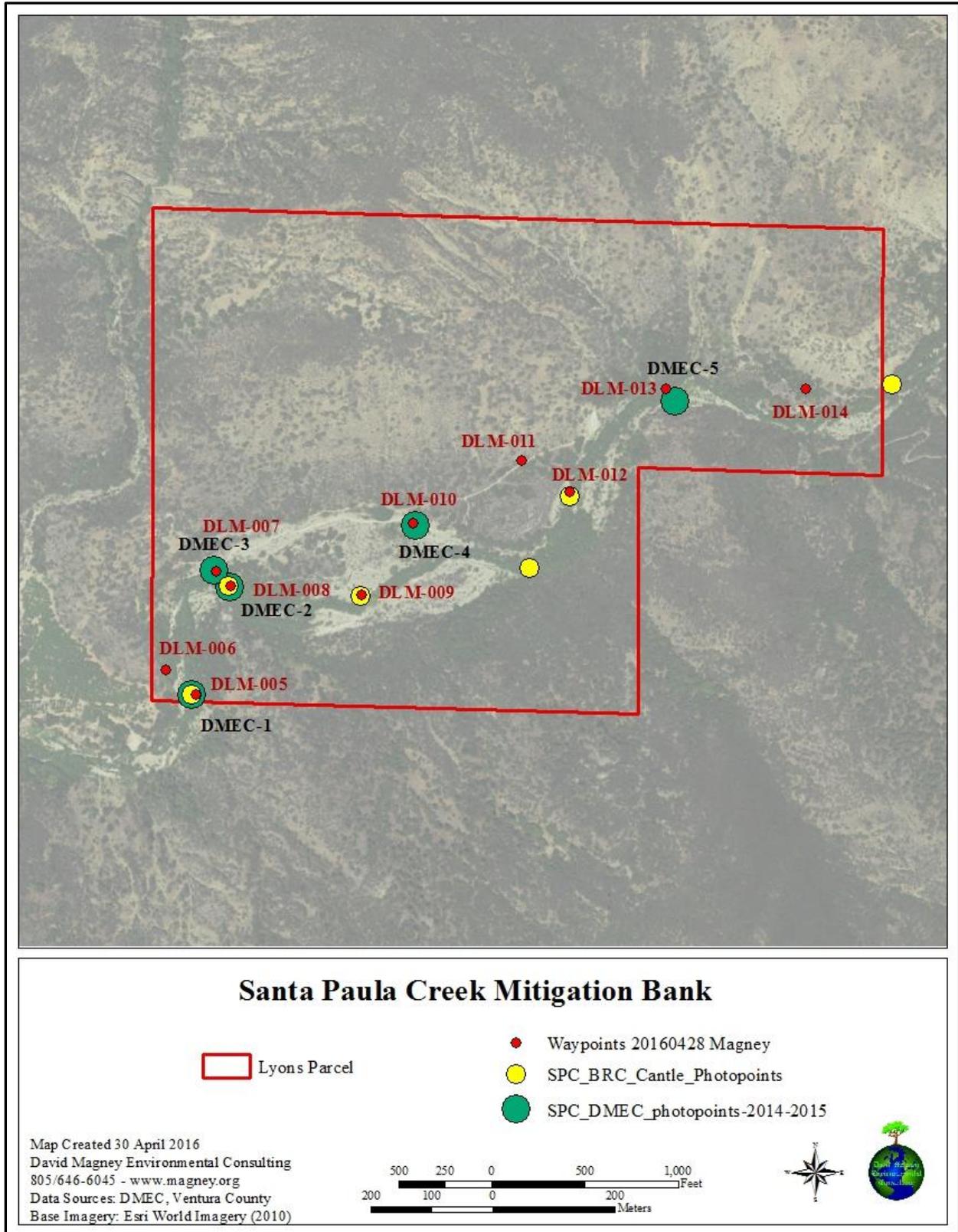
Photostation	Latitude	Longitude
1	34.440604	-119.076829
2	34.442192	-119.076202
3	34.442432	-119.076456
4	34.443196	-119.072860
5	34.443537	-119.070175
6	34.445297	-119.064435

BRC's Photostation 6 was actually established just east/upstream of the SPCMB property; therefore, monitoring at this station was discontinued, with another photostation established a bit downstream to be located on SPCMB property. Figure 3, Locations of Past and Current Photostations, is provided to illustrate the relative positions of the monitoring stations examined in the past and current locations. Figure 3 also includes data points from April 2016. Table 2, Locations of 2017 Photostations, provides the geographic coordinates for each of the photo monitoring stations used in 2017, many of which are the same or very near those used in previous annual monitoring visits. Waypoint DLM-014 is in the location of Photostation 6 and is the substitute for BRC's Photostation 6, which is location outside (east) of the Bank Site.

Table 2. Locations of DMEC 2014-18 Photostations

Photostation	Latitude	Longitude	Years
1	34.440604	-119.076829	2014-2020
2	34.442192	-119.076202	2014-2020
3	34.442432	-119.076456	2014-2020
4	34.443196	-119.072860	2014-2020
5	34.444972	-119.068318	2014-2020
6	34.445189	-119.065972	2013-2014, 2016-2020

Figure 3. Locations of Past and Current Photostations



FIELD SURVEYS

David Magney Environmental Consulting (DMEC) conducted a site survey on 4 June 2020. DMEC biologist David Magney and biologist David Torfeh conducted the survey on foot between 1445 and 1730 hours on the 4th. The property was walked from the southwest to the northeast primarily following established footpaths and trails and along Santa Paula Creek. At specific points of interest, latitude and longitude coordinates (decimal degrees, NAD83) were recorded using handheld Global Positioning System (GPS) unit (Garmin GPSmap 62stc) and photographs were taken (Canon Rebel T4i and iPhone digital cameras). Special attention was paid to characterizing the vegetation communities, presence of wildlife (observations, signs, and sounds), non-native invasive species, and the presence of trash and graffiti.

DMEC revisited six photostations that were previously established by BRC (2013) and DMEC to capture the status of habitats adjacent to and upland of the streambed. At streambed photostations, the streambed was photographed in both upstream and downstream directions. At upland photostations, photographs were taken in each of the four cardinal directions.

DMEC has conducted field surveys of the Bank Site on the following dates:

Date	Biologist(s)
3 July 2007	Cher Batchelor, William Abbott
30 September 2008	David Magney, Carl Wishner, Callen Huff, Heather Wylie, Christina Danko
2 October 2008	David Magney, Carl Wishner, Callen Huff, Heather Wylie, Christina Danko
19 February 2009	David Magney, David Brown, Callen Huff
29 August 2013	David Magney
11 May 2014	David Magney, David Torfeh
14 May 2014	David Magney, Evan Lashly
10 November 2014	David Magney
16 November 2014	David Torfeh
29 May 2015	Joseph Broberg
28 April 2016	David Magney
24 March 2017	David Magney
30 March 2018	David Magney
8 May 2019	David Magney
4 June 2020	David Magney, David Torfeh

BIOLOGICAL RESOURCES

This section summarizes the general site characteristics, including the property flora, fauna, and habitats. A full accounting of the baseline conditions and accounts of special-status species and habitats are provided in the Bank Enabling Instrument. Included below are any new biological resources observed on the SPCMB site subsequent to baseline condition reports.

FLORA

The flora of the Santa Paula Mitigation Bank includes the vascular (flowering) and nonvascular (cryptogam) plants existing onsite. Table 3. Plants of the Santa Paula Creek Mitigation Bank, lists all vascular plant species observed or documented during the biological resources survey conducted onsite and in Santa Paula Canyon (within and beyond the bank site property) at 288 taxa.

To date, DMEC has documented 267 vascular plant taxa as occurring on the SPCMB property only. During the 2020 annual monitoring survey, DMEC observed three (3) vascular plant taxa that had not previously been recorded on the bank site, two of which are new records for all of Santa Paula Canyon (*Ceanothus cuneatus* var. *cuneatus*, *Cortedaria jubata*, and *Pellaea mucronata*). These additions bring the total taxa observed onsite to include 224 (83.9%) native species and 37 (13.9%) naturalized species. The SPCMB has a much higher ratio of native plant species to naturalized species than typically found for the flora of California (~70% native) (Baldwin et al. 2012) or Ventura County (75% native) (Magney 2014, 2017) as a whole, which is one significant measure of the condition of the Bank Site. (Note: another 27 taxa are expected to occur on the Bank Site based on their presence upstream or downstream in Santa Paula Canyon, shown below in blue font.)

The nonvascular plant flora was not assessed.

Table 3. Plants of the Santa Paula Creek Mitigation Bank

Scientific Name ¹	Common Name	Habit	Family	SPC
<i>Acer macrophyllum</i> var. <i>macrophyllum</i>	Bigleaf Maple	T	Sapindaceae	X
<i>Achillea millefolium</i>	White Yarrow	PH	Asteraceae	X
<i>Acmispon americanus</i> var. <i>americanus</i>	Spanish Clover	AH	Fabaceae	X
<i>Acmispon glaber</i> var. <i>glaber</i>	Deerweed	PH	Fabaceae	X
<i>Acmispon maritimus</i> var. <i>maritimus</i>	Coastal Lotus	AH	Fabaceae	X
<i>Acmispon strigosus</i> var. <i>strigosus</i>	Strigose Lotus	AH	Fabaceae	X
<i>Acmispon wrangelianus</i>	Chile Lotus	AH	Fabaceae	X
<i>Acourtia microcephala</i>	Sacapellote	PH	Asteraceae	X
<i>Adenostoma fasciculatum</i> var. <i>fasciculatum</i>	Chamise	S	Rosaceae	X
<i>Adiantum capillus-veneris</i>	Southern Maidenhair Fern	PF	Pteridaceae	X
<i>Adiantum jordanii</i>	California Maidenhair Fern	PF	Pteridaceae	18
<i>Agrostis exarata</i>	Western Bentgrass	PG	Poaceae	X
<i>Allophyllum glutinosum</i>	Sticky False Gilyflower	AH	Polemoniaceae	X
<i>Alnus rhombifolia</i>	White Alder	T	Betulaceae	X

¹ Species in **bold print** are special-status species.

Scientific Name ¹	Common Name	Habit	Family	SPC
<i>Ambrosia psilostachya</i> var. <i>californica</i>	Western Ragweed	BH	Asteraceae	X
<i>Amorpha californica</i> var. <i>californica</i>	California False Indigo	S	Fabaceae	X
<i>Amsinckia intermedia</i>	Rancher's Fire	AH	Boraginaceae	e
<i>Antirrhinum multiflorum</i>	Sticky Snapdragon	S	Plantaginaceae	X
<i>Apiastrum angustifolium</i>	Wild Celery	AH	Apiaceae	X
<i>Arctostaphylos glandulosa</i> ssp. <i>mollis</i>	Santa Ynez Mountains Manzanita	S	Ericaceae	X
<i>Arctostaphylos glauca</i>	Bigberry Manzanita	S	Ericaceae	X
<i>Artemisia californica</i>	California Sagebrush	S	Asteraceae	X
<i>Artemisia douglasiana</i>	Mugwort	PH	Asteraceae	X
<i>Asclepias californica</i> ssp. <i>californica</i>	California Milkweed	AH	Apocynaceae	X
<i>Asclepias eriocarpa</i>	Indian Milkweed	AH	Apocynaceae	e
<i>Astragalus trichopodus</i> var. <i>phoxus</i>	Antisell Three-pod Milkvetch	PH	Fabaceae	X
<i>Atriplex lentiformis</i> ssp. <i>breweri</i>	Brewer Quailbrush	S	Chenopodiaceae	X
<i>Avena barbata</i> *	Slender Wild Oat	AG	Poaceae	16
<i>Baccharis pilularis</i> ssp. <i>consanguinea</i>	Coyote Brush	S	Asteraceae	X
<i>Baccharis salicifolia</i> ssp. <i>salicifolia</i>	Mulefat	S	Asteraceae	X
<i>Bloomeria crocea</i> var. <i>crocea</i>	Golden Stars	PG	Themidaceae	14
<i>Boechera sparsiflora</i>	Few-flowered Rock Cress	PH	Brassicaceae	X
<i>Bolboschoenus maritimus</i> var. <i>paludosus</i>	Saltmarsh Bullrush	PG	Cyperaceae	e
<i>Bowlesia incana</i>	Hoary Bowlesia	AH	Apiaceae	14
<i>Brachypodium distachyon</i> *	Short-pedicel Brome	AG	Poaceae	X
<i>Brassica nigra</i> *	Black Mustard	AH	Brassicaceae	X
<i>Brickellia californica</i> var. <i>californica</i>	California Brickellbush	S	Asteraceae	X
<i>Brickellia nevini</i>	Nevin Brickellbush	S	Asteraceae	X
<i>Bromus diandrus</i> ssp. <i>diandrus</i> *	Ripgut Brome	AG	Poaceae	X
<i>Bromus hordeaceus</i> *	Soft Chess	AG	Poaceae	X
<i>Bromus madritensis</i> ssp. <i>madritensis</i> *	Madrid Brome	AG	Poaceae	X
<i>Bromus madritensis</i> ssp. <i>rubens</i> *	Red Brome	AG	Poaceae	X
<i>Bromus laevipes</i>	Woodland Brome	PG	Poaceae	X
<i>Calochortus albus</i>	Fairy Lantern	PG	Liliaceae	e
<i>Calystegia macrostegia</i> ssp. <i>intermedia</i>	Intermediate Morning-glory	PV	Convolvulaceae	X
<i>Calystegia malacophylla</i> ssp. <i>pedicellata</i>	Sierra Morning-glory	PV	Convolvulaceae	X
<i>Carex senta</i>	Rough Sedge	PG	Cyperaceae	X
<i>Carduus pycnocephalus</i> *	Italian Thistle	AH	Asteraceae	X
<i>Castilleja affinis</i> ssp. <i>affinis</i>	Lay-and-Collie's Indian Paintbrush	PH	Orobanchaceae	e
<i>Castilleja applegatei</i> ssp. <i>martinii</i>	Martin Indian Paintbrush	PH	Orobanchaceae	X
<i>Castilleja foliolosa</i>	Woolly Indian Paintbrush	PH	Orobanchaceae	X
<i>Ceanothus crassifolius</i> var. <i>crassifolius</i>	Hoaryleaf Ceanothus	S	Rhamnaceae	X
<i>Ceanothus cuneatus</i> var. <i>cuneatus</i>	Buck Brush	S	Rhamnaceae	20
<i>Ceanothus leucodermis</i>	Chaparral Whitethorn	S	Rhamnaceae	e
<i>Ceanothus megacarpus</i> var. <i>megacarpus</i>	Bigpod Ceanothus	S	Rhamnaceae	X
<i>Ceanothus oliganthus</i> var. <i>oliganthus</i>	Hoary Ceanothus	S	Rhamnaceae	X
<i>Ceanothus spinosus</i>	Greenbark Ceanothus	S	Rhamnaceae	e
<i>Ceanothus tomentosus</i> var. <i>olivaceous</i>	Woollyleaf Ceanothus	S	Rhamnaceae	e
<i>Centaurea melitensis</i> *	Tocalote	AH	Asteraceae	X
<i>Cercocarpus betuloides</i> var. <i>betuloides</i>	Birchleaf Mountain Mahogany	S	Rosaceae	X

Scientific Name ¹	Common Name	Habit	Family	SPC
<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>	Common Yellow Pincushion	AH	Asteraceae	19
<i>Chenopodium berlandieri</i> var. <i>sinuatum</i>	Pitseed Goosefoot	AH	Chenopodiaceae	X
<i>Chenopodium californicum</i>	California Goosefoot	PH	Chenopodiaceae	e
<i>Chlorogalum pomeridianum</i> var. <i>p.</i>	Soap Lily	PG	Agavaceae	X
<i>Chorizanthe staticoides</i> var. <i>staticoides</i>	Turkish Rugging	AH	Polygonaceae	e
<i>Cirsium occidentale</i> var. <i>occidentale</i>	Cobweb Thistle	BH	Asteraceae	X
<i>Clarkia botata</i>	Punchbowl Godetia	AH	Onagraceae	X
<i>Clarkia purpurea</i> var. <i>quadrivulnera</i>	Four-spotted Purple Clarkia	AH	Onagraceae	14
<i>Clarkia unguiculata</i>	Elegant Farwell-to-Spring	AH	Onagraceae	X
<i>Claytonia parviflora</i> ssp. <i>parviflora</i>	Small-flowered Miner's Lettuce	AH	Montiaceae	18
<i>Claytonia perfoliata</i> ssp. <i>mexicana</i>	Mexican Miner's Lettuce	AH	Montiaceae	e
<i>Claytonia perfoliata</i> ssp. <i>perfoliata</i>	Miner's Lettuce	AH	Montiaceae	14
<i>Clematis lasiantha</i>	Pipstem Clematis	PV	Ranunculaceae	X
<i>Clematis ligusticifolia</i>	Virgin's Bower	PV	Ranunculaceae	16
<i>Collinsia heterophylla</i>	Chinese Houses	AH	Plantaginaceae	14
<i>Conyza canadensis</i> [<i>Erigeron</i> c.]	Horseweed	AH	Asteraceae	X
<i>Cordylanthus rigidus</i> ssp. <i>rigidus</i>	Rigid Birds-beak	AH	Orobanchaceae	X
<i>Corethrogyne filaginifolia</i> var. <i>filaginifolia</i>	California Cudweed-aster	PH	Asteraceae	X
<i>Cortaderia jubata</i> *	Pampas Grass	PG	Poaceae	20
<i>Cryptantha decipiens</i>	Gravel Forget-Me-Not	AH	Boraginaceae	X
<i>Cryptantha muricata</i> var. <i>jonesii</i>	Jones Prickly Forget-Me-Not	AH	Boraginaceae	X
<i>Cyperus eragrostis</i>	Umbrella-sedge	PG	Cyperaceae	X
<i>Datisca glomerata</i>	Durango Root	PH	Datisceae	X
<i>Datura wrightii</i>	Jimson Weed	AH	Solanaceae	X
<i>Daucus pusillus</i>	Southwestern Carrot	AH	Apiaceae	X
<i>Deinandra fasciculata</i>	Fascicled Tarplant	AH	Asteraceae	X
<i>Delphinium cardinale</i>	Scarlet Larkspur	PH	Ranunculaceae	18
<i>Delphinium parryi</i> ssp. <i>maritimum</i>	Coastal Parry Larkspur	PH	Ranunculaceae	19
<i>Delphinium parryi</i> ssp. <i>parryi</i>	Parry Larkspur	PH	Ranunculaceae	14
<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	Blue Dicks	PG	Themidaceae	X
<i>Diplacus</i> [<i>Mimulus</i>] <i>longiflorus</i>	Sticky Bush Monkeyflower	S	Phrymaceae	X
<i>Dryopteris arguta</i>	Coastal Wood Fern	PF	Dryopteridaceae	X
<i>Dudleya lanceolata</i>	Lanceleaf Live-forever	PH	Crassulaceae	X
<i>Dudleya pulverulenta</i> ssp. <i>pulverulenta</i>	Chalky Live-forever	PH	Crassulaceae	e
<i>Elymus condensatus</i>	Giant Wildrye	PG	Poaceae	X
<i>Elymus glaucus</i> ssp. <i>glaucus</i>	Blue Wildrye	PG	Poaceae	X
<i>Elymus triticoides</i> ssp. <i>triticoides</i>	Creeping Wildrye	PG	Poaceae	X
<i>Emmenanthe penduliflora</i>	Whispering Bells	AH	Boraginaceae	X
<i>Epilobium canum</i> ssp. <i>canum</i>	California Fuchsia	PH	Onagraceae	X
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Northern Willow-herb	AH	Onagraceae	X
<i>Epipactis gigantea</i>	Stream Orchid	PH	Orchidaceae	X
<i>Equisetum arvense</i>	Common Horsetail	PF	Equisetaceae	X
<i>Equisetum laevigatum</i>	Smooth Scouring Rush	PF	Equisetaceae	X
<i>Equisetum telmateia</i> ssp. <i>braunii</i>	Giant Horsetail	PF	Equisetaceae	X
<i>Eriastrum densifolium</i> ssp. <i>elongatum</i>	Elongate Woolly Star	PH	Polemoniaceae	X
<i>Erigeron foliosus</i> var. <i>foliosus</i>	Leafy Fleabane or Daisy	PH	Asteraceae	X
<i>Eriodictyon crassifolium</i> var. <i>nigrescens</i>	Thickleaf Yerba Santa	S	Namaceae	X
<i>Eriogonum covilleianum</i>	Coville Buckwheat	AH	Polygonaceae	X

Scientific Name ¹	Common Name	Habit	Family	SPC
<i>Eriogonum elongatum</i> var. <i>elongatum</i>	Long-stemmed Buckwheat	PH	Polygonaceae	X
<i>Eriogonum fasciculatum</i> var. <i>foliolosum</i>	Leafy California Buckwheat	S	Polygonaceae	X
<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	Desert California Buckwheat	S	Polygonaceae	e
<i>Eriogonum parvifolium</i> var. <i>parvifolium</i>	Seacliff Buckwheat	PH	Polygonaceae	e
<i>Eriophyllum confertiflorum</i> var. <i>c.</i>	Golden Yarrow	PH	Asteraceae	X
<i>Erodium cicutarium</i> *	Restem Filaree	AH	Geraniaceae	16
<i>Erysimum capitatum</i> var. <i>capitatum</i>	Western Wallflower	A/BH	Brassicaceae	X
<i>Erythranthe guttata</i> [<i>Mimulus guttatus</i>]	Common Streamside Monkeyflower	A/PH	Phrymaceae	X
<i>Eschscholzia californica</i>	California Poppy	AH	Papaveraceae	16
<i>Eucrypta chrysanthemifolia</i> var. <i>c.</i>	Common Eucrypta	AH	Boraginaceae	X
<i>Eulobus californicus</i>	Mustard Primrose	AH	Onagraceae	16
<i>Festuca perennis</i> *	Italian Rye Grass	PG	Poaceae	X
<i>Festuca myuros</i> *	Rattail Sixweeks Grass	AG	Poaceae	X
<i>Frangula californica</i> ssp. <i>californica</i>	California Coffeeberry	S	Rhamnaceae	X
<i>Frangula californica</i> ssp. <i>tomentella</i>	Hoary Coffeeberry	S	Rhamnaceae	X
<i>Fraxinus dipetala</i>	California Flowering Ash	T	Oleaceae	X
<i>Galium angustifolium</i> ssp. <i>angustifolium</i>	Chaparral Bedstraw	S	Rubiaceae	X
<i>Galium nuttallii</i> ssp. <i>nuttallii</i>	San Diego Bedstraw	PH/S	Rubiaceae	18
<i>Garrya veatchii</i>	Silk-tassel Bush	S	Garryaceae	X
<i>Gilia capitata</i> ssp. <i>abrotanifolia</i>	Blue Field Gilia	AH	Polemoniaceae	X
<i>Grindelia camporum</i> var. <i>camporum</i>	Great Valley Gumplant	S	Asteraceae	e
<i>Hazardia squarrosa</i> var. <i>squarrosa</i>	Sawtooth Goldenbush	S	Asteraceae	X
<i>Helenium bigelovii</i>	Bigelow Sneezeweed	PH	Asteraceae	X
<i>Helminthotheca echioides</i> *	Bristly Ox-tongue	AH	Asteraceae	X
<i>Hesperoyucca whipplei</i> ssp. <i>whipplei</i>	Our Lord's Candle	S	Agavaceae	X
<i>Heteromeles arbutifolia</i>	Toyon	S	Rosaceae	X
<i>Heterotheca grandiflora</i>	Telegraph Weed	PH	Asteraceae	X
<i>Heterotheca sessiliflora</i> ssp. <i>echioides</i>	Sessileflower False Goldenaster	PH	Asteraceae	X
<i>Heterotheca sessiliflora</i> ssp. <i>fastigiata</i>	Erect Golden-Aster	PH	Asteraceae	X
<i>Heterotheca villosa</i> var. <i>hispida</i>	Woolly Goldenaster	PH	Asteraceae	X
<i>Hirschfeldia incana</i> *	Summer Mustard	AH	Brassicaceae	X
<i>Hoita macrostachya</i>	Leather Root	PH	Fabaceae	X
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i> *	Mediterranean Barley	AG	Poaceae	X
<i>Hosackia oblongifolia</i> var. <i>oblongifolia</i>	Streambank Bird's-foot Trefoil	PH	Fabaceae	X
<i>Hypochaeris glabra</i> *	Smooth Cat's-ear	AH	Asteraceae	17
<i>Juglans californica</i> var. <i>californica</i>	So. California Black Walnut	T	Juglandaceae	X
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	Spiny Rush	PG	Juncaceae	X
<i>Juncus bufonius</i> var. <i>bufonius</i>	Toad Rush	AG	Juncaceae	X
<i>Juncus macrophyllus</i>	Large-leaf Rush	PG	Juncaceae	X
<i>Juncus rugulosus</i>	Wrinkled Rush	PG	Juncaceae	X
<i>Juncus textillis</i>	Basket Rush	PG	Juncaceae	X
<i>Keckiella cordifolia</i>	Heart-leaved Bush Penstemon	S	Plantaginaceae	X
<i>Keckiella ternata</i> var. <i>septentrionalis</i>	Bluestem Bush Penstemon	S	Plantaginaceae	X
<i>Lactuca serriola</i> *	Prickly Wild Lettuce	AH	Asteraceae	16
<i>Lamarckia aurea</i> *	Goldentop	AG	Poaceae	19
<i>Lasthenia gracilis</i>	Common Goldfields	AH	Asteraceae	X
<i>Lathyrus vestitus</i> ssp. <i>laevicarpus</i>	Naked-pod Pacific Peavine	PV	Fabaceae	X

Scientific Name ¹	Common Name	Habit	Family	SPC
<i>Lepechinia calycina</i>	Pitcher Sage	S	Lamiaceae	14
<i>Lepidospartum squamatum</i>	Scalebroom	S	Asteraceae	X
<i>Leptosiphon androsaceus</i>	False Babystars	AH	Polemoniaceae	e
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i>	Ocellated Humboldt Lily	PG	Liliaceae	17
<i>Lobelia dunnii</i> var. <i>serrata</i>	Ojai Lobelia	PH	Campanulaceae	X
<i>Logfia gallica</i> *	Narrowleaf Cottonrose	AH	Asteraceae	X
<i>Lomatium dasycarpum</i> ssp. <i>dasycarpum</i>	Woolly Fruited Lomatium	PH	Apiaceae	15
<i>Lonicera subspicata</i> var. <i>denudata</i>	Southern Honeysuckle	S	Caprifoliaceae	X
<i>Lupinus albifrons</i> var. <i>albifrons</i>	Silver Bush Lupine	S	Fabaceae	X
<i>Lupinus hirsutissimus</i>	Nettle Lupine	AH	Fabaceae	X
<i>Lupinus latifolius</i> var. <i>latifolius</i>	Broad-leaved Lupine	PH	Fabaceae	X
<i>Lupinus sparsiflorus</i> ssp. <i>sparsiflorus</i>	Few-flowered Lupine	AH	Fabaceae	X
<i>Lupinus succulentus</i>	Fleshy Lupine	AH	Fabaceae	X
<i>Lupinus truncatus</i>	Truncate-leaved Lupine	AH	Fabaceae	19
<i>Lythrum californicum</i>	California Loosestrife	PH	Lythraceae	X
<i>Madia gracilis</i>	Slender Tarplant	AH	Asteraceae	X
<i>Maianthemum stellatum</i> ²	False Solomon's Seal	PG	Ruscaceae	14
<i>Malacothamnus fasciculatus</i> var. <i>f.</i>	Chaparral Bushmallow	S	Malvaceae	X
<i>Malacothrix saxatilis</i> var. <i>tenuifolia</i>	Tenuated Cliff-aster	PH	Asteraceae	X
<i>Malosma laurina</i>	Laurelleaf Sumac	S	Anacardiaceae	X
<i>Marah fabacea</i>	California Man-root	PV	Cucurbitaceae	e
<i>Marah macrocarpus</i> var. <i>macrocarpus</i>	Wild Cucumber	PV	Cucurbitaceae	X
<i>Matricaria discoidea</i> *	Rayless Chamomile	AH	Asteraceae	X
<i>Melica imperfecta</i>	Coast Melic Grass	PG	Poaceae	X
<i>Melilotus indica</i> *	Sourclover	AH	Fabaceae	X
<i>Mentzelia laevicaulis</i>	Blazing Star	AH	Loasaceae	X
<i>Mentzelia veatchiana</i>	Veatch's Stickleaf	AH	Loasaceae	16
<i>Mimulus cardinalis</i>	Scarlet Monkeyflower	PH	Phrymaceae	X
<i>Mimulus pilosus</i>	Pilose Monkeyflower	AH	Phrymaceae	X
<i>Mirabilis laevis</i> ssp. <i>crassifolia</i>	California Wishbone Bush	PH	Nyctaginaceae	16
<i>Monardella breweri</i> var. <i>lanceolata</i>	Mustang Mint	AH	Lamiaceae	X
<i>Nasturtium officinale</i> *	Watercress	PH	Brassicaceae	X
<i>Navarretia atractyloides</i>	Hollyleaf Navarretia	AH	Polemoniaceae	e
<i>Nicotiana glauca</i> *	Tree Tobacco	S	Solanaceae	X
<i>Opuntia littoralis</i>	Coastal Prickly Pear	S	Cactaceae	X
<i>Oxalis pilosa</i> ssp. <i>pilosa</i>	Hairy White Wood Sorrel	PH	Oxalidaceae	X
<i>Paeonia californica</i>	California Peony	PH	Paeoniaceae	X
<i>Parietaria hespera</i> var. <i>californica</i>	California Pellitory	AH	Urticaceae	e
<i>Parietaria hespera</i> var. <i>hespera</i>	Southwest Pellitory	AH	Urticaceae	e
<i>Pellaea andromedifolia</i>	Coffee Fern	PF	Pteridaceae	X
<i>Pellaea mucronata</i> var. <i>mucronata</i>	Birdsfoot Trefoil Fern	PF	Pteridaceae	20
<i>Pennisetum setaceum</i> *	African Fountaingrass	PG	Poaceae	15
<i>Penstemon heterophyllus</i> var. <i>australis</i>	Southern Foothill Penstemon	PH	Plantaginaceae	e
<i>Pentagramma triangularis</i> ssp. <i>t.</i>	Goldenback Fern	PF	Pteridaceae	X
<i>Phacelia brachyloba</i>	Shortlobe Phacelia	AH	Boraginaceae	X
<i>Phacelia cicutaria</i> var. <i>hispida</i>	Hispid Caterpillar Phacelia	AH	Boraginaceae	X

² This species was erroneously identified as present onsite, looking similar to *Epipactis gigantea* when not in flower.

Scientific Name ¹	Common Name	Habit	Family	SPC
<i>Phacelia parryi</i>	Parry Phacelia	AH	Boraginaceae	16
<i>Phacelia viscida</i> var. <i>viscida</i>	Sticky Phacelia	AH	Boraginaceae	e
<i>Plagiobothrys nothofulvus</i>	Rusty Popcornflower	AH	Boraginaceae	17
<i>Platanus racemosa</i> var. <i>racemosa</i>	California Sycamore	T	Platanaceae	X
<i>Poa annua</i> *	Annual Bluegrass	AG	Poaceae	X
<i>Poa secunda</i> ssp. <i>secunda</i>	One-sided Bluegrass	PG	Poaceae	X
<i>Polygala cornuta</i> var. <i>fishiae</i>	Fish Milkwort	S	Polygalaceae	X
<i>Polypodium californicum</i>	California Polypody	PF	Polypodiaceae	X
<i>Polypogon monspeliensis</i> *	Rabbitsfoot Beardgrass	AG	Poaceae	X
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont Cottonwood	T	Salicaceae	X
<i>Populus trichocarpa</i>	Black Cottonwood	T	Salicaceae	X
<i>Prunus ilicifolia</i> ssp. <i>ilicifolia</i>	Hollyleaf Cherry	S	Rosaceae	X
<i>Pseudognaphalium bioletti</i>	Bicolored Everlasting	A/BH	Asteraceae	X
<i>Pseudognaphalium californicum</i>	Green Everlasting	A/BH	Asteraceae	X
<i>Pseudognaphalium luteoalbum</i> *	Cudweed Everlasting	AH	Asteraceae	X
<i>Pseudognaphalium microcephalum</i>	White Everlasting	AH	Asteraceae	X
<i>Pseudotsuga macrocarpa</i>	Bigcone Spruce	T	Pinaceae	X
<i>Pterostegia drymarioides</i>	Fairy Mist	AH	Polygonaceae	X
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast Live Oak	T	Fagaceae	X
<i>Quercus berberidifolia</i>	California Scrub Oak	S	Fagaceae	X
<i>Rafinesquina californica</i>	California Chicory	AH	Asteraceae	19
<i>Rhamnus crocea</i>	Spiny Redberry	S	Rhamnaceae	X
<i>Rhamnus ilicifolia</i>	Hollyleaf Redberry	S	Rhamnaceae	X
<i>Ribes indecorum</i>	White-flowered Currant	S	Grossulariaceae	X
<i>Ribes malvaceum</i> var. <i>malvaceum</i>	Chaparral Currant	S	Grossulariaceae	14
<i>Rosa californica</i>	California Wild Rose	S	Rosaceae	X
<i>Rubus ursinus</i>	Pacific Blackberry	PV	Rosaceae	X
<i>Salix exigua</i> var. <i>exigua</i>	Narrow-leaved Willow	S	Salicaceae	X
<i>Salix laevigata</i>	Red Willow	T	Salicaceae	X
<i>Salix lasiolepis</i> var. <i>lasiolepis</i>	Arroyo Willow	T	Salicaceae	X
<i>Saltugilia australis</i>	Southern Gilia	AH	Polemoniaceae	X
<i>Salvia apiana</i> var. <i>apiana</i>	White Sage	S	Lamiaceae	X
<i>Salvia columbariae</i>	Chia	AH	Lamiaceae	X
<i>Salvia leucophylla</i>	Purple Sage	S	Lamiaceae	X
<i>Salvia mellifera</i>	Black Sage	S	Lamiaceae	X
<i>Sambucus nigra</i> ssp. <i>caerulea</i>	Blue Elderberry	S	Caprifoliaceae	X
<i>Sanicula crassicaulis</i> var. <i>crassicaulis</i>	Pacific Sanicle	PH	Apiaceae	X
<i>Scrophularia californica</i> ssp. <i>californica</i>	California Figwort	PH	Scrophulariaceae	e
<i>Selaginella bigelovii</i>	Bigelow's Spike-rush	PF	Selaginellaceae	09
<i>Senecio flaccidus</i> var. <i>douglasii</i>	Shrubby Butterweed	S	Asteraceae	X
<i>Senecio vulgaris</i> *	Common Groundsel	AH	Asteraceae	X
<i>Silene laciniata</i> ssp. <i>laciniata</i>	Mexican Pink	PH	Caryophyllaceae	X
<i>Sisymbrium orientale</i> *	Oriental Hedge Mustard	AH	Brassicaceae	15
<i>Solanum americanum</i>	White Nightshade	A/PH	Solanaceae	X
<i>Solanum douglasii</i>	Douglas Nightshade	PH	Solanaceae	X
<i>Solanum wallacei</i>	Wallace's Nightshade	PH	Solanaceae	E
<i>Solanum xanti</i>	Chaparral Nightshade	S	Solanaceae	X
<i>Sonchus oleraceus</i> *	Common Sow-thistle	AH	Asteraceae	X

Scientific Name ¹	Common Name	Habit	Family	SPC
<i>Stachys albens</i>	Woolly Hedge Nettle	PH	Lamiaceae	X
<i>Stachys bullata</i>	Pink Hedge Nettle	PH	Lamiaceae	X
<i>Stellaria media</i> *	Common Chickweed	AH	Caryophyllaceae	14
<i>Stephanomeria cichoriacea</i>	Fort Tejon Milk-aster	PH	Asteraceae	X
<i>Stephanomeria virgata</i> ssp. <i>virgata</i>	Twiggy Wreath Plant	AH	Asteraceae	X
<i>Stipa coronata</i>	Giant Needlegrass	PG	Poaceae	X
<i>Stipa lepida</i>	Foothill Needlegrass	PG	Poaceae	X
<i>Stipa miliacea</i> var. <i>miliacea</i> *	Smilo Grass	PG	Poaceae	X
<i>Symphoricarpos mollis</i>	Snow Berry	PV	Caprifoliaceae	16
<i>Tamarix ramosissima</i> *	Tamarisk, Saltcedar	T/S	Tamaricaceae	15
<i>Tauschia arguta</i>	Southern Tauschia	PH	Apiaceae	16
<i>Thysanocarpus laciniatus</i> var. <i>laciniatus</i>	Lace Pod	AH	Brassicaceae	e
<i>Torilis arvensis</i> *	Hedge-parsley	AH	Apiaceae	X
<i>Torilis nodosa</i> *	Rattlesnake Weed	AH	Apiaceae	X
<i>Toxicodendron diversilobum</i>	Western Poison Oak	S/V	Anacardiaceae	X
<i>Trichostema lanatum</i>	Woolly Bluecurls	S	Lamiaceae	X
<i>Trifolium willdenovii</i>	Tomcat Clover	AH	Fabaceae	X
<i>Turricula parryi</i>	Poodle-dog Bush	S	Namaceae	X
<i>Typha domingensis</i>	Southern Cattail	PH	Typhaceae	X
<i>Typha latifolia</i>	Broadleaf Cattail	PH	Typhaceae	X
<i>Umbellularia californica</i> var. <i>californica</i>	California Bay	T	Lauraceae	X
<i>Uropappus lindleyi</i>	Silver Puffs	AH	Asteraceae	19
<i>Urospermum picroides</i> *	Prickly Goldenfleece	AH	Asteraceae	X
<i>Venegasia carpesioides</i>	Canyon Sunflower	PH/S	Asteraceae	X
<i>Verbena lasiostachys</i> var. <i>lasiostachys</i>	Western Verbena	PH	Verbenaceae	e
<i>Vinca major</i> *	Periwinkle	PV	Apocynaceae	X
<i>Viola pedunculata</i> ssp. <i>pedunculata</i>	Johnny Jump-up	PH	Violaceae	e
<i>Woodwardia fimbriata</i>	Giant Chain Fern	PF	Blechnaceae	X
<i>Yabea microcarpa</i>	Yabea	AH	Brassicaceae	14

Scientific nomenclature follows The Jepson Manual, 2nd edition (Baldwin et al. 2012), *Jepson eFlora* for updated taxonomy, *Flora of North America North of Mexico* (Flora of North America Editorial Committee 1993+), and more recent publications when taxonomy has been changed. Names in **bold** typeface are rare statewide (California Native Plant Society *Inventory of Rare and Endangered Plants of California*) or just in Ventura County (Magney 2017a). A “+” sign indicates taxa found on the SPCMB property since previous survey.

SPC = Santa Paula Canyon. X or indicates taxa found within Santa Paula Creek Mitigation Bank property. A two-digit number in this position represents the year that it was first observed on the Bank Site (e.g. 16 = 2016).

An “e” = taxa known from Santa Paula Canyon but not yet found on SPCMB parcel.

Habit definitions:

AF = annual fern or fern ally.

AG = annual grass or graminoid.

AH = annual herb.

BH = biennial herb.

PF = perennial fern or fern ally.

PG = perennial grass or graminoid.

PH = perennial herb.

PV = perennial vine.

S = shrub.

T = tree.

SPECIAL-STATUS SPECIES

Five of the species listed in Table 3 above are considered special-status species. Three of these are listed as rare by the California Native Plant Society: *Juglans californica* (Rank 4.2), *Lilium*

humboldtii ssp. *ocellatum* (Rank 4.2), and *Polygala cornuta* var. *fishiae* (Rank 4.3) (CNPS 2017). The other three are rare or uncommon in Ventura County (Magney 2018). These include:

Eriogonum covilleianum (Coville Buckwheat) - Locally Uncommon³ - now locally Scattered⁴;

Helenium bigelovii (Bigelow Sneezeweed) - Locally Uncommon;

Lupinus latifolius var. *latifolius* (Broad-leaved Lupine) - Locally Rare – now locally Scattered⁵;

*Mentzelia veatchiana*⁶ (Veatch Stickleaf) – Locally Rare – now locally Scattered (in Ventura County); and

Saltugilia australis (Southern Gilia) - Locally Rare.

These special-status plants and their locations on the SPCMB, as well as other special-status plants that have the potential to occur based on California Natural Diversity Database (CNDDDB) records are described in more detail in the previous DMEC report (DMEC 2007). Two new special-status species populations were observed during the 2017 monitoring survey, *Lilium humboldtii* ssp. *ocellatum*, and a new occurrence of previously observed *Polygala cornuta* var. *fishiae*. An additional occurrence of *L. humboldtii* was found during 2018, a short distance from the 2017 discovery. Both species were also observed in 2020.

HABITAT DESCRIPTIONS

The SPCMB property vegetation is comprised of six general habitat types, including: Herbaceous, Coastal Sage Scrub, Floodplain Scrub, Chaparral, Riparian Woodland/Forest, Freshwater Marsh, and Upland Woodland. Each of these general habitat types consist of one or more vegetation alliances and are further divided into one or more plant associations. Twenty-two (22) vegetation alliances have been observed onsite, with those 22 alliances subdivided into 85 plant associations, either formally described in or following the protocols for classifying natural vegetation in the *Manual of California Vegetation*, 2nd edition (Sawyer et al. 2009). Specifically the SPCMB property habitats are classified as the following:

Herbaceous/Grassland

- *Heterotheca sessiliflora* Herbaceous Alliance
 - *Heterotheca sessiliflora-Erigeron foliolosus-Bromus diandrus* Herbaceous Association
- *Polypodium californicum* Provisional Herbaceous Alliance (on rock cliff faces)
 - *Polypodium californicum-Pellaea andromedifolia* Herbaceous Association
- *Selaginella bigelovii* Herbaceous Alliance (on rock cliff faces)
 - *Selaginella bigelovii* Herbaceous Association
 - *Selaginella bigelovii-Melica imperfecta-Stipa coronata* Herbaceous Association

Freshwater Marsh

- *Typha domingensis* Herbaceous Alliance
 - *Typha domingensis* Herbaceous Association
 - *Typha domingensis-Juncus* spp. Herbaceous Association

³ Rarity status changed from Locally Rare to Locally Uncommon in 2017.

⁴ Rarity status changed from Locally Uncommon to Scattered in 2020 after additional populations were found in Ventura County.

⁵ Rarity status changed from Locally Rare to Scattered (not locally rare or uncommon) in 2017.

⁶ Discovered onsite during 2016 monitoring survey, but subsequently changed from Locally Rare to Scattered.

- *Typha domingensis/Nasturtium officinale* Herbaceous Association

Coastal Sage Scrub

- *Eriogonum fasciculatum* Shrubland Alliance
 - *Eriogonum fasciculatum-Salvia apiana-Hesperoyucca whipplei* Shrubland Association
 - *Eriogonum fasciculatum-Salvia apiana* Shrubland Association
- *Acmispon glaber* [*Lotus scoparius*] Shrubland Alliance
 - *Acmispon glaber-Eriogonum fasciculatum -Salvia apiana* Shrubland Association
 - *Acmispon glaber-Malosma laurina* Shrubland Association
- *Linanthus californicus* Provisional Shrubland Alliance (on rock cliff faces)
 - *Linanthus californicus/Selaginella bigelovii-Polypodium californicum* Shrubland Association
- *Salvia apiana* Shrubland Alliance
 - *Salvia apiana* Shrubland Association
 - *Salvia apiana-Malosma laurina* Shrubland Association

Floodplain Scrub

- *Lepidospartum squamatum* Shrubland Alliance
 - *Lepidospartum squamatum-Hazardia squarrosa/Pseudognaphalium microcephalum* Shrubland Association
 - *Lepidospartum squamatum-Brickellia californica* Shrubland Association

Chaparral

- *Ceanothus megacarpus* Shrubland Alliance
 - *Ceanothus megacarpus-Cercocarpus betuloides* Shrubland Association
 - *Ceanothus megacarpus-Heteromeles arbutifolia-Malosma laurina* Shrubland Association
- *Cercocarpus betuloides* Shrubland Alliance
 - *Cercocarpus betuloides* Shrubland Association
 - *Cercocarpus betuloides/Polypodium californicum* Shrubland Association
 - *Cercocarpus betuloides-Malosma laurina* Shrubland Association
 - *Cercocarpus betuloides-Malosma laurina-Heteromeles arbutifolia* Shrubland Association
 - *Cercocarpus betuloides-Heteromeles arbutifolia-Arctostaphylos glauca* Shrubland Association
 - *Cercocarpus betuloides-Arctostaphylos glauca-Rhamnus crocea* Shrubland Association
 - *Cercocarpus betuloides-Garrya veatchii-Prunus ilicifolia* Shrubland Association
 - *Cercocarpus betuloides-Prunus ilicifolia-Ceanothus oliganthus* Shrubland Association
 - *Cercocarpus betuloides/Salvia apiana* Shrubland Association
 - *Cercocarpus betuloides/Brickellia californica* Shrubland Association
 - *Cercocarpus betuloides/Eriogonum fasciculatum/Poa secunda* Shrubland Association
- *Fraxinus dipetala* Shrubland Alliance
 - *Fraxinus dipetala* Shrubland Association
 - *Fraxinus dipetala-Juglans californica* Shrubland Association
 - *Fraxinus dipetala-Heteromeles arbutifolia-Lonicera subspicata* Shrubland Association
 - *Fraxinus dipetala-Heteromeles arbutifolia-Rhamnus ilicifolia* Shrubland Association
 - *Fraxinus dipetala/Lupinus sp./Poa secunda* Shrubland Association
 - *Fraxinus dipetala-Heteromeles arbutifolia-Lonicera subspicata* Woodland Association
- *Heteromeles arbutifolia* Shrubland Alliance
 - *Heteromeles arbutifolia-Ceanothus oliganthus* Shrubland Association
 - *Heteromeles arbutifolia/Artemisia californica-Elymus condensatus* Shrubland Association
- *Prunus ilicifolia* Shrubland Alliance
 - *Prunus ilicifolia-Rhamnus ilicifolia-Acer macrophyllum* Shrubland Association
 - *Prunus ilicifolia-Rhamnus ilicifolia-Fraxinus dipetala* Shrubland Association

Riparian Woodlands/Forests

- *Alnus rhombifolia* Forest Alliance
 - *Alnus rhombifolia* Forest Association
 - *Alnus rhombifolia-Acer macrophyllum-Umbellularia californica* (Seep) Forest Association
 - *Alnus rhombifolia-Platanus racemosa* Forest Association
 - *Alnus rhombifolia-Platanus racemosa/Salix lasiolepis* Forest Association
 - *Alnus rhombifolia-Platanus racemosa/Baccharis salicifolia* Forest Association
 - *Alnus rhombifolia-Platanus racemosa/Salix laevigata* Forest Association
 - *Alnus rhombifolia-Platanus racemosa-Populus trichocarpa* Forest Association
 - *Alnus rhombifolia-Populus trichocarpa/Baccharis salicifolia* Forest Association
 - *Alnus rhombifolia-Populus trichocarpa/Rubus ursinus* Forest Association
 - *Alnus rhombifolia-Populus trichocarpa/Epilobium canum* Forest Association
 - *Alnus rhombifolia-Quercus agrifolia-Platanus racemosa-Populus trichocarpa* Forest Association
 - *Alnus rhombifolia/Salix laevigata/Lepidospartum squamatum* Forest Association
 - *Alnus rhombifolia/Salix lasiolepis-Baccharis salicifolia* Forest Association
 - *Alnus rhombifolia/Salix exigua* Forest Association
 - *Alnus rhombifolia/Juncus textilis-Woodwardia fimbriata* Forest Association
 - *Alnus rhombifolia/Rubus ursinus* Forest Association
- *Platanus racemosa* Woodland Alliance
 - *Platanus racemosa-Alnus rhombifolia/Salix lasiolepis* Woodland Association
 - *Platanus racemosa/Baccharis salicifolia/Pseudognaphalium microcephalum* Woodland Association
- *Populus trichocarpa* Woodland Alliance
 - *Populus trichocarpa-Platanus racemosa* Woodland Association
 - *Populus trichocarpa-Alnus rhombifolia/Baccharis salicifolia* Woodland Association
 - *Populus trichocarpa-Alnus rhombifolia/Pseudognaphalium microcephalum* Woodland Association
 - *Populus trichocarpa/Salix lasiolepis* Woodland Association
 - *Populus trichocarpa-Platanus racemosa/Lepidospartum squamatum* Woodland Association
 - *Populus trichocarpa-Quercus agrifolia* Woodland Association
 - *Populus trichocarpa-Quercus agrifolia-Platanus racemosa* Woodland Association
 - *Populus trichocarpa/Brickellia californica/Pseudognaphalium microcephalum* Woodland Association
- *Quercus agrifolia* (Riparian) Woodland Alliance
 - *Quercus agrifolia* (Riparian) Woodland Association
 - *Quercus agrifolia-Umbellularia californica* (Seep) Woodland Association
 - *Quercus agrifolia-Populus trichocarpa-Umbellularia californica* Woodland Association
 - *Quercus agrifolia-Platanus racemosa-Populus trichocarpa* Woodland Association
 - *Quercus agrifolia-Platanus racemosa/Heteromeles arbutifolia* Woodland Association
 - *Quercus agrifolia-Platanus racemosa/Toxicodendron diversilobum* Woodland Association

Upland Woodlands/Forests

- *Juglans californica* Woodland Alliance
 - *Juglans californica* Woodland Association
 - *Juglans californica-Fraxinus dipetala* Woodland Association
 - *Juglans californica/Artemisia californica-Salvia apiana* Woodland Association
 - *Juglans californica/Salvia apiana-Eriogonum fasciculatum* Woodland Association
- *Pseudotsuga macrocarpa* Forest Alliance
 - *Pseudotsuga macrocarpa* Forest Association
 - *Pseudotsuga macrocarpa/Cercocarpus betuloides* Forest Association

- *Quercus agrifolia* Woodland Alliance
 - *Quercus agrifolia* Woodland Association
 - *Quercus agrifolia-Umbellularia californica/Heteromeles arbutifolia* Woodland Association
 - *Quercus agrifolia/Prunus ilicifolia-Rhamnus ilicifolia* Woodland Association
 - *Quercus agrifolia/Rhamnus ilicifolia-Keckiella cordifolia* Woodland Association
 - *Quercus agrifolia/Heteromeles arbutifolia-Frangula tomentella* Woodland Association
 - *Quercus agrifolia/Selaginella bigelovii-Polypodium californicum* Woodland Association
 - *Quercus agrifolia/Toxicodendron diversilobum* Woodland Association
- *Umbellularia californica* Woodland Alliance
 - *Umbellularia californica* Woodland Association

These general habitats, their associated plant alliances, plant associations, and sensitive habitats and species are described in more detail in the previous DMEC (DMEC 2007) report; however, a number of these were discovered subsequently and are first reported here. Note that the distinction between riparian and upland woodlands is not apparent from the plant alliance or association names as the dominant/characteristic species may be the same. This is particularly true for woodlands dominated by *Quercus agrifolia*, which occurs as a riparian species when present within floodplains and as an upland species when present outside of floodways.

FAUNA

A total of 236 wildlife taxa have been observed or detected on the Santa Paula Creek Mitigation Bank property during surveys, or reported by others. They included six (6) fish, four (4) amphibians, six (6) reptiles, 128 birds, 13 mammals, and 79 invertebrates. One bird, Lawrence's Goldfinch, and one insect, Yellow-faced Bumblebee, were observed onsite during 2019. DMEC expects a potential 90 additional vertebrate taxa to occur onsite, for a total of 326 taxa. Table 4. Wildlife of the Santa Paula Creek Mitigation Bank, summarizes all species observed and expected by DMEC to be present onsite, as well as all species reported by other survey efforts.

Table 4. Wildlife of the Santa Paula Creek Mitigation Bank

Scientific Name ⁷	Common Name	Evidence
<i>Fish</i>		
Order Cypriniformes: Family Cyprinidae*	Minnow	Observed
<i>Catostomus santaanae</i>	Santa Ana Sucker	Reported ⁸
<i>Cottus asper</i>	Prickly Sculpin	Expected ⁹
<i>Fundulus parvipinnis</i>	California Killifish	Expected ⁹
<i>Gasterosteus aculeatus</i>	Threespine Stickleback	Reported ⁸
<i>Gasterosteus aculeatus microcephalus</i>	Partially Unarmored Threespine Stickleback	Expected ⁹
<i>Gila orcuttii</i>	Arroyo Chub	Reported ⁸
<i>Lampetra tridentata</i>	Pacific Lamprey	Expected ⁹
<i>Oncorhynchus mykiss</i>	Rainbow Trout	Observed, Reported ^{8,10}
<i>Oncorhynchus mykiss irideus</i>	Southern Steelhead Trout	Reported ⁸

⁷ An asterisk "*" after the scientific name indicates non-native species. A plus sign "+" after the scientific name indicates a species newly observed or detected by DMEC during the 2018 Monitoring Survey.

⁸ Stillwater Sciences (2007).

⁹ DMEC (2013) – detailed references included in source

¹⁰ Cantle (2013)

Scientific Name ⁷	Common Name	Evidence
<i>Pimephales promelas</i> *	Fathead Minnow	Expected ⁹
<i>Rhinichthys osculus</i>	Santa Ana Speckled Dace	Expected ⁹
Amphibians		
<i>Batrachoseps nigriventris</i>	Black-bellied Slender Salamander	Observed
<i>Bufo boreas</i>	Western Toad	Observed
<i>Bufo boreas</i> ssp. <i>halophilus</i>	California Toad	Expected
<i>Hyla arenicolor</i>	Canyon Treefrog	Observed
<i>Hyla regilla</i>	Pacific Treefrog	Observed
<i>Rana aurora</i> ssp. <i>draytonii</i>	California Red-legged Frog	Expected
<i>Rana boylei</i>	Foothill Yellow-legged Frog	Expected
Reptiles		
<i>Actinemys marmorata</i>	Western Pond Turtle	Reported ¹¹
<i>Anniella pulchra pulchra</i>	Silvery Legless Lizard	Expected ⁹
<i>Arizona elegans</i> ssp. <i>indet</i>	Glossy Snake	Expected ⁹
<i>Cnemidophorus tigris stejnegeri</i>	Coastal Western Whiptail	Observed
<i>Coleonyx variegatus abbotti</i>	San Diego Banded Gecko	Expected ⁹
<i>Coluber flagellum piceus</i>	Red Racer/Coachwhip Snake	Expected ⁹
<i>Coluber lateralis lateralis</i>	Striped Racer/Chaparral Whipsnake	Expected ⁹
<i>Crotalus oreganus helleri</i>	Southern Pacific Rattlesnake	Expected ⁹
<i>Crotalus viridis</i>	Western Rattlesnake	Expected
<i>Diadophis punctatus modestus</i>	San Bernardino Ring-necked Snake	Expected ⁹
<i>Diadophis punctatus vandenburghi</i>	Vandenburg Ring-necked Snake	Expected ⁹
<i>Elgaria multicarinatus</i>	San Diego Alligator Lizard	Expected
<i>Ensatina eschscholtzii</i>	Painted Ensatina	Expected ⁹
<i>Hypsiglena ochrorhyncha klauberi</i>	San Diego Night Snake	Expected ⁹
<i>Lampropeltis getulus californiae</i>	California Kingsnake	Expected ⁹
<i>Phrynosoma coronatum (blainvillei)</i>	Coast (San Diego) Horned Lizard	Expected
<i>Pituophis cantenifer annectens</i>	Gopher Snake	Observed
<i>Plestiodon skiltonianus skiltonianus</i>	Skilton's Western Skink	Expected ⁹
<i>Salvadora hexalepis virgultea</i>	Coast Patch-nosed Snake	Expected
<i>Sceloporus occidentalis</i>	Western Fence Lizard	Observed
<i>Sceloporus occidentalis longipes</i>	Great Basin Fence Lizard	Expected ⁹
<i>Tantilla planiceps</i>	Western Black-headed Snake	Expected ⁹
<i>Thamnophis hannondii</i>	Two-striped Garter Snake	Observed, Reported ¹¹
<i>Uta stansburiana elegans</i>	California Side-blotched Lizard	Observed
<i>Xantusia vigilis vigilis</i>	Yucca Night Lizard	Expected ⁹
Birds		
<i>Podilymbus podiceps</i>	Pied-billed Grebe	Reported ¹²
<i>Ardea herodias</i>	Great Blue Heron	Observed
<i>Ardea alba</i>	Great Egret	Observed ¹³
<i>Egretta thula</i>	Snowy Egret	Expected

¹¹ Freel & Thelander (2007)¹² Observed by David Pereksta, 8 December 2013, eBird.org¹³ Observed by David Pereksta, 31 December 2018, eBird.org

Scientific Name ⁷	Common Name	Evidence
<i>Butorides virescens</i>	Green Heron	Observed
<i>Nycticorax nycticorax</i>	Black-crowned Night Heron	Observed
<i>Cathartes aura</i>	Turkey Vulture	Observed, Reported ^{10, 18}
<i>Gymnogyps californianus</i>	California Condor	Reported ^{11,14}
<i>Anas platyrhynchos</i>	Mallard	Reported ¹⁵
<i>Aythya collaris</i>	Ring-necked Duck	Reported ¹¹
<i>Elanus leucurus</i>	White-tailed Kite	Reported ¹⁶
<i>Accipter striatus</i>	Sharp-shinned Hawk	Reported ¹⁷
<i>Accipiter cooperii</i>	Cooper's Hawk	Reported ¹⁰
<i>Buteo lineatus</i>	Red-shouldered Hawk	Observed
<i>Buteo jamaicensis</i>	Red-tailed Hawk	Observed, Reported ^{10,18}
<i>Aquila chrysaeto</i>	Golden Eagle	Reported ¹¹
<i>Falco sparverius</i>	American Kestrel	Observed
<i>Falco columbarius</i>	Merlin	Reported ¹³
<i>Falco peregrinus</i>	Peregrine Falcon	Expected ⁹
<i>Callipepla californica</i>	California Quail	Observed, Reported ¹⁰
<i>Oreortyx pictus</i>	Mountain Quail	Observed
<i>Fulica americana</i>	American Coot	Reported ¹⁹
<i>Gallinago delicata</i>	Wilson's Snipe	Reported ¹¹
<i>Charadrius vociferus</i>	Killdeer	Detected (call)
<i>Actitis macularius</i>	Spotted Sandpiper	Expected ⁹
<i>Columba livia</i> *	Rock Dove/Pigeon	Reported ²⁰
<i>Patagioenas fasciata</i>	Band-tailed Pigeon	Observed, Reported ^{10, 18}
<i>Zenaida macroura</i>	Mourning Dove	Observed, Reported ^{10, 18}
<i>Columbina passerina</i>	Common Ground-dove	Reported ²¹
<i>Streptopelia decaocto</i>	Eurasian Collard Dove	Reported ¹⁰
<i>Coccyzus americanis</i>	Western Yellow-billed Cuckoo	Expected ⁹
<i>Geococcyx californianus</i>	Greater Roadrunner	Expected ⁹
<i>Tyto alba</i>	Barn Owl	Expected ⁹
<i>Bubo virginianus</i>	Great Horned Owl	Expected ⁹
<i>Strix occidentalis occidentalis</i>	California Spotted Owl	Expected ⁹
<i>Asio otus</i>	Long-eared Owl	Expected ⁹
<i>Glaucidium gnoma</i>	Northern Pygmy-owl	Reported ²²
<i>Chordeiles acutipennis</i>	Lesser Nighthawk	Expected ⁹
<i>Phalaenoptilus nuttallii</i>	Common Poorwill	Expected ⁹
<i>Cypseloides niger</i>	Black Swift	Expected ⁹

¹⁴ Reported on Symbios Condor Tales website, <http://home.netcom.com/~symbios/ctfirsttime.html>

¹⁵ Observed by Bruce Henderson, 2 January 2017, eBird.org

¹⁶ Observed by Candice Berry, 3 April 2013, eBird.org

¹⁷ Observed by Adam Searcy, 9 January 2016, eBird.org

¹⁸ Cooper (2013)

¹⁹ Observed by Bruce Henderson, 29 December 2015, eBird.org

²⁰ Observed by Nicolas Cary, 1 September 2013, eBird.org

²¹ Observed by Joseph Gamez, 24 May 2017, eBird.org

²² Observed by Julie Bryson, 25 May 1980, eBird.org

Scientific Name ⁷	Common Name	Evidence
<i>Aeronautes saxatalis</i>	White-throated Swift	Observed, Reported ¹⁸
<i>Archilochus alexandri</i>	Black-chinned Hummingbird	Reported ^{18,23}
<i>Calypte anna</i>	Anna's Hummingbird	Observed
<i>Calypte costae</i>	Costa's Hummingbird	Observed, Reported ¹⁰
<i>Selasphorus rufus</i>	Rufous Hummingbird	Reported ²⁴
<i>Selasphorus sasin</i>	Allen's Hummingbird	Observed, Reported ¹⁹
<i>Ceryle alcyon</i>	Belted Kingfisher	Observed, Reported ²⁵
<i>Melanerpes formicivorus</i>	Acorn Woodpecker	Observed, Reported ¹⁰
<i>Sphyrapicus nuchalis</i>	Red-naped Sapsucker	Reported ¹³
<i>Sphyrapicus ruber</i>	Red-breasted Sapsucker	Reported ¹¹
<i>Picoides nuttallii</i>	Nuttall's Woodpecker	Reported ^{10, 18}
<i>Picoides pubescens</i>	Downy Woodpecker	Observed, Reported ¹³
<i>Picoides villosus</i>	Hairy Woodpecker	Reported ¹³
<i>Colaptes auratus</i>	Northern Flicker	Observed, Reported ²⁶
<i>Contopus sordidulus</i>	Western Wood-Pewee	Reported ¹⁸
<i>Contopus cooperi</i>	Olive-sided Flycatcher	Reported ¹⁹
<i>Empidonax traillii</i>	Willow Flycatcher	Reported ¹⁸
<i>Empidonax difficilis</i>	Pacific-slope Flycatcher	Observed, Reported ^{10, 18}
<i>Empidonax hammondi</i>	Hammond's Flycatcher	Reported ²⁷
<i>Sayornis nigricans</i>	Black Phoebe	Observed, Reported ²⁸
<i>Sayornis saya</i>	Say's Phoebe	Reported ¹³
<i>Myiarchus cinerascens</i>	Ash-throated Flycatcher	Observed, Reported ^{10, 18}
<i>Tyrannus vociferans</i>	Cassin's Kingbird	Reported ²¹
<i>Tyrannus verticalis</i>	Western Kingbird	Reported ²⁹
<i>Eremophila alpestris actia</i>	Horned Lark	Expected ⁹
<i>Progne subis</i>	Purple Martin	Expected ⁹
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	Reported ²¹
<i>Tachycineta bicolor</i>	Tree Swallow	Reported ²⁰
<i>Tachycineta thalassina</i>	Violet-green Swallow	Observed
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	Observed
<i>Hirundo rustica</i>	Barn Swallow	Observed
<i>Cyanocitta stelleri</i>	Steller's Jay	Observed, Reported ¹⁸
<i>Aphelocoma californica</i>	California Scrub-jay	Observed, Reported ^{10, 18}
<i>Corvus caurinus</i>	American Crow	Observed
<i>Corvus corax</i>	Common Raven	Observed, Reported ¹⁰
<i>Baeolophus inornatus</i>	Oak Titmouse	Observed, Reported ¹⁰
<i>Psaltriparus minimus</i>	Common Bushtit	Observed, Reported ^{10, 18}
<i>Sitta canadensis</i>	Red-breasted Nuthatch	Reported ¹³
<i>Sitta carolinensis</i>	White-breasted Nuthatch	Reported ²¹

²³ Michael Sanchoz, observed on 15 May 2018, eBird.org

²⁴ Observed by Kevin Spencer, 21 March 2016, eBird.org

²⁵ Observed by David Pereksta, 30 December 2012, eBird.org

²⁶ Observed by Bruce Henderson, 19 November 2019, eBird.org

²⁷ Observed by Adam Searcy, 16 April 2019, eBird.org

²⁸ Observed by Bruce Henderson, 19 November 2019, eBird.org

²⁹ Observed by David Pereksta, 10 April 1999, eBird.org

Scientific Name ⁷	Common Name	Evidence
<i>Salpinctes obsoletus</i>	Rock Wren	Reported ¹³
<i>Catherpes mexicanus</i>	Canyon Wren	Detected (call), Reported ¹⁸
<i>Thryomanes bewickii</i>	Bewick's Wren	Observed, Reported ¹⁸
<i>Troglodytes pacificus</i>	Pacific Wren	Reported ³⁰
<i>Troglodytes aedon</i>	House Wren	Observed, Reported ^{10, 18}
<i>Cinclus mexicanus</i>	American Dipper	Reported ¹⁰
<i>Regulus calendula</i>	Ruby-crowned Kinglet	Observed ³¹
<i>Polioptila caerulea</i>	Blue-gray Gnatcatcher	Observed, Reported ²¹
<i>Sialia mexicana</i>	Western Bluebird	Reported ²¹
<i>Catharus guttatus</i>	Hermit Thrush	Observed ²⁶
<i>Catharus ustulatus</i>	Swainson's Thrush	Reported ¹⁸
<i>Turdus migratorius</i>	American Robin	Observed, Reported ¹⁸
<i>Ixoreus naevius</i>	Varied Thrush	Reported ¹¹
<i>Chamaea fasciata</i>	Wrentit	Detected (call), Reported ¹⁸
<i>Mimus polyglottos</i>	Northern Mockingbird	Observed
<i>Toxostoma redivivum</i>	California Thrasher	Observed ²⁶
<i>Bombycilla cedrorum</i>	Cedar Waxwing	Reported ²²
<i>Phainopepla nitens</i>	Phainopepla	Observed
<i>Sturnus vulgaris</i> *	European Starling	Observed
<i>Vireo belli pusillus</i>	Least Bell's Vireo	Expected ⁹
<i>Vireo gilvus</i>	Warbling Vireo	Observed, Reported ^{10, 18}
<i>Vireo huttoni</i>	Hutton's Vireo	Reported ¹⁸
<i>Vireo cassinii</i>	Cassin's Vireo	Reported ¹⁸
<i>Oreothlypis celata</i>	Orange-crowned Warbler	Reported ^{10, 18}
<i>Dendroica nigrescens</i>	Black-throated Gray Warbler	Reported ²³
<i>Wilsonia pusilla</i>	Wilson's Warbler	Reported ²¹
<i>Dendroica coronata</i>	Yellow-rumped Warbler	Observed ²⁶ , Reported ¹⁰
<i>Setophaga petechia</i>	Yellow Warbler	Observed, Reported ^{10, 18}
<i>Setophaga townsendi</i>	Townsend's Warbler	Observed, Reported ¹⁰
<i>Dendroica occidentalis</i>	Hermit Warbler	Reported ¹⁴
<i>Geothlypis trichas</i>	Common Yellowthroat	Reported ¹³
<i>Icteria virens</i>	Yellow-breasted Chat	Reported ²⁹
<i>Piranga ludoviciana</i>	Western Tanager	Observed, Reported ¹⁰
<i>Pheucticus melanocephalus</i>	Black-headed Grosbeak	Observed, Reported ^{10, 18}
<i>Passerina caerulea</i>	Blue Grosbeak	Expected ⁹
<i>Passerina amoena</i>	Lazuli Bunting	Observed, Reported ¹⁸
<i>Pipilo maculatus</i>	Spotted Towhee	Observed ²⁶ , Reported ¹⁰
<i>Pipilo crissalis</i>	California Towhee	Observed, Reported ¹⁸
<i>Aimophila ruficeps</i>	Rufous-crowned Sparrow	Reported ²¹
<i>Chondestes grammacus</i>	Lark Sparrow	Expected ⁹
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	Reported ¹³
<i>Zonotrichia atricapilla</i>	Golden-crowned Sparrow	Reported ¹³
<i>Artemisiospiza belli belli</i>	Bell's Sage Sparrow	Expected ⁹

³⁰ Observed by David Pereksta, 24 December 1998, eBird.org

³¹ Observed by David Torfeh on 16 November 2014

Scientific Name ⁷	Common Name	Evidence
<i>Passerculus sandwichensis</i>	Savannah Sparrow	Reported ²⁰
<i>Passerella iliaca</i>	Fox Sparrow	Reported ¹³
<i>Melospiza melodia</i>	Song Sparrow	Observed, Reported ¹⁰
<i>Junco hyemalis</i>	Dark-eyed Junco	Observed, Reported ^{10, 18}
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	Detected (call), Reported ²¹
<i>Sturnella neglecta</i>	Western Meadowlark	Reported ¹³
<i>Euphagus cyanocephalus</i>	Brewer's Blackbird	Observed
<i>Molothrus ater</i>	Brown-headed Cowbird	Reported ¹³
<i>Quiscalus mexicanus</i>	Great-tailed Grackle	Expected ⁹
<i>Icterus bullockii</i>	Bullock's Oriole	Reported ³²
<i>Icterus cucullatus</i>	Hooded Oriole	Reported ³³
<i>Haemorphous purpureus californicus</i>	Purple Finch	Reported ²³
<i>Haemohous [Cardodacus] mexicanus</i>	House Finch	Reported ¹⁰
<i>Carpodacus cassinii</i>	Cassin's Finch	Expected ⁹
<i>Spinus pinus</i>	Pine Siskin	Reported ¹⁷
<i>Carduelis lawrencei</i>	Lawrence's Goldfinch	Observed ³⁴ , Reported ²¹
<i>Spinus [Carduelis] psaltria</i>	Lesser Goldfinch	Observed, Reported ^{10, 18}
<i>Spinus [Carduelis] tristis</i>	American Goldfinch	Observed, Reported ²³
<i>Passer domesticus</i> *	House Sparrow	Reported ¹⁹
Mammals		
<i>Antrozous pallidus</i>	Pallid Bat	Expected ⁹
<i>Bassariscus astutus</i>	Ringtail	Detected (scat)
<i>Canis latrans ochropus</i>	California Valley Coyote	Detected (scat, calls)
<i>Chaetodipus californicus</i>	California Pocket Mouse	Expected ⁹
<i>Corynorhinus townsendii townsendii</i>	Townsend's Big-eared Bat	Expected ⁹
<i>Didelphis virginiana</i>	Virginia Opossum	Detected (tracks)
<i>Dipodomys agilis agilis</i>	Pacific Kangaroo Rat	Expected ⁹
<i>Eptesicus fuscus</i>	Big Brown Bat	Expected ⁹
<i>Euderma maculatum</i>	Spotted Bat	Expected ⁹
<i>Eumops perotis californicus</i>	California Western Mastiff Bat	Expected ⁹
<i>Felis concolor</i>	Mountain Lion	Expected
<i>Lasionycteris noctivagans</i>	Silver-haired Bat	Expected ⁹
<i>Lasiurs cinereus</i>	Hoary Bat	Expected
<i>Lasiurus blossevillii</i>	Western Red Bat	Expected ⁹
<i>Lasiurus borealis</i>	Red Bat	Expected
<i>Lasiurus cinereus</i>	Hoary Bat	Expected ⁹
<i>Lasiurus xanthinus</i>	Western Yellow Bat	Expected ⁹
<i>Lepus californicus bennettii</i>	San Diego Black-tailed Jackrabbit	Expected ⁹
<i>Lynx rufus</i>	Bobcat	Detected (scat, tracks)
<i>Mephitis mephitis</i>	Striped Skunk	Expected
<i>Microtus californicus</i>	California Vole	Expected
<i>Mustela frenata</i>	Longtail Weasel	Expected

³² Observed by Mark Mendelsohn, 29 April 2018, eBird.org

³³ Observed by Peter Larramendy, 30 April 2016, eBird.org

³⁴ Observed by David Magney, 8 May 2019

Scientific Name ⁷	Common Name	Evidence
<i>Myotis californicus</i>	California Myotis	Expected ⁹
<i>Myotis ciliolabrum</i>	Small-footed Myotis	Expected ⁹
<i>Myotis evotis</i>	Long-eared Myotis	Expected ⁹
<i>Myotis thysanodes</i>	Fringed Myotis	Expected ⁹
<i>Myotis volans</i>	Long-legged Myotis	Expected ⁹
<i>Myotis yumaensis</i>	Yuma Myotis	Expected ⁹
<i>Neotamias merriami merriami</i>	Merriam's Chipmunk	Expected ⁹
<i>Neotoma bryanti intermedia</i>	San Diego Desert Woodrat	Expected ⁹
<i>Neotoma macrotis</i>	Big-eared [Dusky-footed] Woodrat	Detected (nests)
<i>Notiosorex crawfordi crawfordi</i>	Desert or Crawford's Gray Shrew	Expected ⁹
<i>Nyctinomops macrotis</i>	Big Free-tailed Bat	Expected ⁹
<i>Odocoileus hemionus</i>	Mule Deer	Detected (tracks)
<i>Otospermophilus beecheyii</i>	California Ground Squirrel	Reported ¹⁰
<i>Perognathus longimembris</i>	Little Pocket Mouse	Expected ⁹
<i>Peromyscus maniculatus maniculatus</i>	Deer Mouse	Expected ⁹
<i>Pipistrellus hesperus</i>	Western Pipistrelle	Expected ⁹
<i>Plecotus townsendii</i>	Western Big-eared Bat	Expected
<i>Procyon lotor</i>	Raccoon	Detected (tracks)
<i>Rattus rattus</i> *	Black Rat	Expected
<i>Reithrodontomys megalotis longicaudus</i>	Western Harvest Mouse	Expected ⁹
<i>Scapanus latimanus occultus</i>	Broad-footed Mole	Expected ⁹
<i>Sciurus griseus anthonyi</i>	Anthony's Western Gray Squirrel	Observed
<i>Sciurus niger</i> *	Eastern Fox Squirrel	Expected
<i>Spermophilus beecheyi</i>	California Ground Squirrel	Observed
<i>Spilogale gracilis</i>	Western Spotted Skunk	Expected
<i>Sylvilagus auduboni</i>	Audubon Cottontail	Reported ¹⁰
<i>Sylvilagus audubonii sanctidiegi</i>	San Diego Desert Cottontail	Expected ⁹
<i>Sylvilagus bachmani cinerescens</i>	South Coast Brush Rabbit	Expected ⁹
<i>Tadarida brasiliensis</i>	Mexican Freetail Bat	Expected
<i>Taxidea taxus</i>	American Badger	Expected ⁹
<i>Thomomys bottae bottae</i>	Botta's Pocket Gopher	Detected (burrows)
<i>Urocyon cinereoargenteus californicus</i>	California Gray Fox	Expected ⁹
<i>Ursus americanus</i>	Black Bear	Detected (scat, tracks, claw marks)
Invertebrates		
Phylum Annelid (Worms)		
Class Clitellata:	Collared Earthworm	Observed
Class Mollusca (Snails & Slugs)		
Family Helminthoglyptidae: <i>Helminthoglypta traskii traskii</i>	Trask's Shoulderbrand Snail	Observed
Family Helminthoglyptidae: <i>Helminthoglypta willettii</i>	Matilija Shoulderbrand Snail	Observed
Family Physidae: <i>Physella virgata</i>	Olive Snail	Observed
Superfamily Cerithioidea: <i>Physella</i> sp.	Physiid [aquatic] Snail	Observed
Class Aracnida (Spiders & Mites)		
Aranae: <i>Peucetia viridans</i>	Green Lynx Spider	Observed

Scientific Name ⁷	Common Name	Evidence
Aranae: <i>Araneus</i> sp.	Orb Weaver Spider	Observed
Aranae: Family Thomisidae:	Crab Spider	Observed
Aranae: Subfamily Linyphiinae	Sheetweb Spider	Observed
Aranae: Family Lycosidae:	Wolf Spider	Observed
Aranae: <i>Hogna</i> or <i>Pardosa</i> sp. 1	Thin Legged Wolf Spider	Observed
Aranae: <i>Hogna</i> or <i>Pardosa</i> sp. 2	Thin Legged Wolf Spider	Observed
Aranae: <i>Tetragnatha</i> cf. <i>expansa</i>	Long-jawed Orb Weaver	Observed
Aranae: <i>Aphonopelma reversum</i>	California Brown Tarantula	Observed
Aranae: Family Agelenidae	Funnelweb Spider	Observed
Acari: <i>Aculops tetanothrix</i>	Willow Gall Mite	Observed
Subphylum Myriapoda (Centipedes & Millipedes)		
Class: Chilopoda	Centipede	Observed
Class: Diplopoda	Millipede	Observed
Order Isopoda (Isopods)		
Family Armadillidae: <i>Armadillidium vulgare</i>	Pillbug	Observed
Order Hemiptera (True Bugs)		
Family ?	True Bug	Observed
Family Cicadidae:	Cicada	Detected (call)
Family Gerridae: <i>Gerris</i> cf. <i>remigis</i>	Water Strider	Observed
Order Trichoptera (Caddis Flies)		
Family Sericostomatidae: <i>Gumaga</i> cf. <i>griseola</i>	Caddis fly larva [long sand case]	Observed
Family Limnephilidae: cf. <i>Lenarchus</i>	Caddis fly larva [leaf case]	Observed
Order Coleoptera (Beetles)		
Family Buprestidae: <i>Agrilus angelicus</i>	Oak Twig Girdler	Observed
Family Chrysomelidae:	Leaf Beetle	Observed
Family Chrysomelidae: Subfamily Galerucinae:	Skeletonizing Leaf Beetle	Observed
Family Coccinellidae: <i>Hippodamia convergens</i>	Convergent Ladybird Beetle	Observed
Family Coccinellidae: <i>Coccinella septempunctata</i>	Six-spotted Ladybird Beetle	Observed ³⁵
Family Carabidae: <i>Amara</i> sp.	Black soil beetle	Observed
Family Hydrophylidae: <i>Tropisternus</i> sp.	Scavenger water beetle	Observed
Family Curculionidae:	Weevil	Observed
Family Tenebrionidae: <i>Eleodes acuticaudus</i>	Desert Stink Beetle	Observed ³⁶
Family Tenebrionidae: <i>Eleodes dentipes</i>	Dentate Stink Beetle ♂&♀	Observed ³⁰
Family Melyridae: Subfamily Dasytinae	Soft-wing Flower Beetle	Observed ³⁰
Family Dytiscidae:	Predaceous Diving Beetle	Observed
Order Odonata (Dragonflies, Damselflies)		
-	Dragonfly larva	Observed
Family Libellulidae: <i>Libellula saturata</i>	Big Red Skimmer	Observed
Family Aeshnidae:	Blue Darner	Observed
Family Aeshnidae:	Orange Darner	Observed
Family Coenagrionidae: <i>Enallagma</i> sp.	Bluet	Observed
Family Coenagrionidae: <i>Argia vivida</i>	Vivid Dancer	Observed
Order Lepidoptera (Butterflies, Moths)		
Family Danaidae: <i>Danus plexippus</i>	Monarch Butterfly	Observed

³⁵ Observed first time in 2016.³⁶ Observed first time in 2017.

Scientific Name ⁷	Common Name	Evidence
Family Gelechiidae: <i>Gnorimoschema baccharisella</i>	Coyote Brush Stem Gall Moth	Observed
Family Hesperidae:	Skipper sp. 2	Observed
Family Hesperidae: <i>Atalopedes campestris</i>	Sachem Skipper	Observed
Family Hesperidae: <i>Erynnis funeralis</i>	Funeral Duskywing	Observed
Family Nymphalidae: <i>Adelpha bredowii</i>	California Sister Butterfly	Observed
Family Nymphalidae: <i>Euphydryas chalcedona chalcedona</i>	Variable Checkerspot	Observed
Family Nymphalidae: <i>Nymphalis antiopa</i>	Mourning Cloak Butterfly	Observed
Family Nymphalidae: <i>Vanessa cardui</i>	Painted Lady Butterfly	Observed
Family Papilionidae: <i>Papilio rutulus</i>	Western Tiger Swallowtail Butterfly	Observed
Family Pieridae: <i>Anthocharis sara</i>	Sara Orange-tip Butterfly	Observed
Family Pieridae: <i>Artogeia rapae</i>	Cabbage Butterfly	Observed
Family Pieridae: <i>Colias</i> sp.	Sulfur Butterfly	Observed
Family Pieridae: <i>Zerene eurydice</i>	California Dogface Butterfly	Observed ³⁷
Family Riodinidae: <i>Apodemia</i> sp.*	Metalmark Butterfly	Observed
Family Riodinidae: <i>Apodemia virgulti</i>	Behr's Metalmark	Observed
Family Saturniidae: <i>Hemileuca</i> sp. [<i>eglanterina</i> ?]	Western Sheepmoth, Buckmoth	Observed ³⁰
-	Moth	Observed
Order Diptera (Flies & Mosquitos)		
Family Tipulidae: <i>Holorusia rubiginosa</i>	Giant Crane Fly	Observed
Family Rhagionidae: <i>Symphoromyia</i> sp.	Snipe Fly	Observed
Family Simuliidae: <i>Simulium</i> sp.	Black Fly	Observed
Family Bombyliidae: <i>Villa</i> sp.	Bee Fly	Observed
Family Bombyliidae: <i>Neacreotrichus</i> cf. <i>diversus</i>	Phthirid Bee Fly	Observed
Family Syrphidae: <i>Syrphus</i> sp.	Syrphid Flower Fly	Observed ³⁸
Family Culicidae: <i>Ochlerotatus triseriatus</i>	Tree Hole Mosquito	Observed
Family Cecidomyiidae: <i>Asphondylia ceanothi</i>	Ceanothus Bud Gall Midge	Observed
Family Cecidomyiidae: <i>Rabdophaga salicisbrassicoides</i>	Willow Rosette Gall Midge	Observed
Family Cecidomyiidae: <i>Rhopalomyia californica</i>	Coyote Brush Gall Fly	Observed
Order Neuroptera (Net-winged Insects)		
Family Myrmeleontidae:	Antlion	Observed
Order Turbellaria (Free-living Flatworms)		
Family Dugesidae: <i>Dugesia</i> sp.	Planarian Flatworm	Observed
Order Orthoptera (Grasshoppers, Crickets)		
Family Gryllidae:	Black Field Cricket	Observed
Order Hymenoptera (Wasps, Bees)		
Family Apidae: <i>Apis mellifera</i> *	European Honey Bee	Observed
Family Apidae: <i>Bombus</i> sp.	Yellow-faced Bumblebee	Observed ³⁹
Family Anthophoridae: <i>Xylocopa</i> sp.	Carpenter Bee	Observed
Family Anthophoridae: <i>Ceratina</i> [Subgenus: <i>Zadontomerus</i>] sp.	Small Carpenter Bee	Observed
Family Pompilidae: <i>Pepsis</i> sp.	Tarantula Hawk	Observed

³⁷ Larvae observed first time in 2017 on *Ceanothus oliganthus*.

³⁸ Observed and photographed on 8 May 2019 by David Magney

³⁹ Observed on 8 May 2019 by David Magney

Scientific Name ⁷	Common Name	Evidence
Family Vespidae: <i>Vespula</i> cf. <i>sulphurea</i>	Yellow Jacket	Observed
Family Formicidae: <i>Iridomyrmex</i> sp.	Argentine Ant	Observed
Family Formicidae:	Small Black Ant	Observed
Family Formicidae:	Red Ant	Observed
Family Cynipidae: <i>Amphibolips confluenta</i>	Oak Apple Gall Wasp	Observed
Family Vespidae: <i>Mischocyttarus flavitarsis</i>	Western Paper Wasp	Observed

MONITORING RESULTS

YEAR 2020 RESULTS

The Santa Paula Creek Mitigation Bank site remains in a largely pristine condition, as it occurred previously in 2019. The vegetation communities appear to be healthy and intact. The riparian community continues to regenerate, following the January 2005 flood event that scoured the floodplain of most vegetation, and is approaching the final successional stage of climax community. This succession is illustrated in Appendix A – Historic Aerial Imagery. The most recent aerial imagery for the Bank Site is from 19 August 2019. Comparing it to previous aerial photos show continued vegetative cover of the floodplain until the Thomas Fire, then a resumption of vegetation growth subsequently. The streambed is largely covered by overarching canopy, mainly consisting of *Alnus rhombifolia* (White Alder), with most areas exhibiting 90-100 percent canopy cover. Much of the vegetation at the SPCMB site was burned to varying degrees by the Thomas Fire of December 2017; however, it is recovering naturally. Most of the riparian canopy was unaffected, or only singed. Two areas dominated by *Alnus rhombifolia* succumbed to the fire from severe singeing: at the western edge associated with the spring, and at a small depression on the north side of the scoured (2005) floodplain. *Alnus rhombifolia* and *Populus trichocarpa* seedlings have germinated and will eventually mature in these areas.

There is a very high ratio of native to non-native species at the SPCMB. One large-stature non-native invasive species was observed during the 2015 monitoring survey that had not previously been observed: *Tamarix ramosissima* (Saltcedar). Only one small individual (approximately 2 feet tall) *T. ramosissima* was observed along the creek bank, which was pulled up when observed, these were not observed since 2016. It is possible that there are more; however, they are likely to occur as scattered individuals, and do not reach densities high enough to represent a significant infestation. None were observed in 2020. It is unlikely that *T. ramosissima* can compete with the thick *Alnus rhombifolia* stands that dominate the streambed, and DMEC does not expect *T. ramosissima* to reduce wetland function at the SPCMB. Previously recorded exotic species include widespread grasses (e.g. *Avena barbata*, *Bromus madritensis* ssp. *madritensis*, *Stipa miliacea* var. *miliacea*), and one small restricted patch of *Vinca minor* (Lesser Periwinkle), still extant in the same location in 2019, although the *Vinca* was observed in 2020.

The creek flows in 2020 was similar to the previous year, evidence of the recharged aquifer upstream. Santa Paula Creek was flowing well over 5 cubic-feet per second (cfs) in 2017, up to about 10 cfs in 2018, about 13-14 cfs in 2019, and about 8 cfs in 2020. There was abundant evidence present that the flows exceeded bank full conditions and flooded at least the first/lowest floodplain terrace during the winter of 2020. Evidence of high flows included scouring of the channel bed, debris racks around tree trunks, and flattened young trees and shrubs (bend downstream). The surface-flow level is approximately 8 cfs (on the date of the most recent field survey) with numerous deep pools and undercut banks serving as suitable refugia for Southern Steelhead/Rainbow Trout (*Oncorhynchus mykiss*).

Plant species observed for the first time on the SPCMB site in 2020 include:

Ceanothus cuneatus var. *cuneatus*

Cortedaria jubata

Pellaea mucronata.

The wildlife observed and detected during the 2020 monitoring survey had been observed or detected during previous surveys, with no additional invertebrate species. The varied habitats found within the SPCMB provides habitat to numerous species of wildlife. To date, observed/reported wildlife species include:

- 6 fishes
- 4 amphibians
- 6 reptiles
- 128 birds, 66 observed during one or more monitoring visits, 62 reported by others
- 13 mammals
- 79 invertebrates

This represents only a sampling of what wildlife species are expected to occur within the SPCMB. Many additional species are expected to occur onsite but have not yet been observed.

The U.S. Forest Service (USFS) trail passing through site remains highly utilized by the public. Graffiti and trash (e.g. disposable water bottles, broken glass, aluminum cans, and plastic bags) are visible and pervasive during 2015 but almost entirely absent during 2016, with a slight increase in trash (mostly empty water bottles) and graffiti in 2018 and 2019. Graffiti does not actually impact the ecological function of the site; however, it is an aesthetic nuisance. Trash can have adverse impacts on the ecology of the site. Almost no trash or graffiti were observed during the 2019 survey, likely due to the fact that the USFS closed the trail during and after the Thomas Fire.

California Condors (*Gymnogyps californianus*) have been well-documented to ingest, and feed to chicks, small pieces of trash (microtrash, Walters et al. 2010). The USFS is tasked with conducting clean-up efforts as required by their access easement across the property, which is conducted every other month. DMEC expects that these efforts have been undertaken; however, the high level of public use results in a constant input of new trash.

PHOTOSTATION COMPARISONS

Below are photographs looking upstream and downstream at each photostation for each year this site was monitored. Not all the photos taken at each of the photostation were taken from the exact same point; however, they are near each other and habitat conditions in those areas can be generally compared, sometimes precisely.

BRC conducted the monitoring in 2013; however, DMEC conducted surveys in August 2013, with observations made at or near some of BRC's monitoring stations. BRC's photos are included in previous monitoring reports.

Station 1

Year	View Upstream	View Downstream
2014		
<p><i>Alnus rhombifolia</i>-dominated riparian forest provides nearly 100% canopy cover over Santa Paula Creek. Small patches of Freshwater Marsh dominated by <i>Typha domingensis</i> occur in the small canopy openings.</p>		
2015		
<p><i>Alnus rhombifolia</i>-dominated riparian forest provides nearly 100% canopy cover over Santa Paula Creek</p>		
2016		
<p>No change from 2015</p>		

Year	View Upstream	View Downstream
2017		
<p>Conditions similar to 2016 except understory has been scoured out and surface flow greater.</p>		
2018		
<p>Conditions similar to 2017 except understory has been burned by Thomas Fire</p>		
2019		
<p>Conditions similar to 2018, but with somewhat higher surface flows and evidence of winter flooding</p>		
2020		
<p>Conditions are similar to 2019, even the downed tree is still in the same condition.</p>		

Station 2

Year	View Upstream	View Downstream
2014		
<p><i>Alnus rhombifolia</i>-dominated riparian forest provides nearly 100% canopy cover over Santa Paula Creek.</p>		
2015		
<p>No change from 2014.</p>		
2016		
<p><i>Alnus rhombifolia</i>-dominated riparian forest provides nearly 100% canopy cover over Santa Paula Creek, very similar to 2014 and 2015 conditions.</p>		
2017		
<p>Conditions similar to 2016 except understory has been scoured out and surface flows higher.</p>		

Year	View Upstream	View Downstream
2018		
<p>Conditions similar to 2017 except understory has been burned by Thomas Fire</p>		
2019		
<p>Conditions similar to 2018, but with somewhat higher surface flows and evidence of winter flooding</p>		
2020		
<p>Conditions have not changed.</p>		

Station 3

Year	View Upstream	View Downstream
2014		
<p><i>Platanus racemosa/Baccharis salicifolia</i> riparian woodland dominates the floodplain above the perennial low-flow channel of Santa Paula Creek. Percent cover is slowly increasing in this area that was completely scoured and barren after January 2005 flooding.</p>		
2015		
<p><i>Platanus racemosa/Baccharis salicifolia</i> riparian woodland and <i>Alnus rhombifolia</i> riparian woodland dominate the floodplain above the perennial low-flow channel of Santa Paula Creek. Percent cover is slowly increasing in this area that was completely scoured and barren after January 2005 flooding. Note: Photos for Photostation 3 in 2015 were taken in the same immediate vicinity of the property but in a slightly different location from 2014.</p>		
2016		
<p><i>Populus trichocarpa</i> is now dominant at this location, with <i>Platanus racemosa/Baccharis salicifolia</i> riparian woodland and <i>Alnus rhombifolia</i> riparian woodland dominate the floodplain above the perennial low-flow channel of Santa Paula Creek. Percent cover is continuing to increase in this area that was completely scoured and barren after January 2005 flooding. Note: Photos for Photostation 3 in 2015 were taken in the same immediate vicinity of the property but in a slightly different location from 2014. The</p>		

Year	View Upstream	View Downstream
middle photo, looking eastward, is from just a few meters upstream from the photostation.		
2017		
Conditions similar to previous year except for additional vegetation growth.		
2018		
Conditions similar to 2017 with additional growth, this station not burned in Thomas Fire		
2019		
Conditions similar to 2018 but with additional canopy growth		
2020		
Canopy growth continues to expand, at least on the downstream side.		

Station 4

Year	View Upstream	View Downstream
2014		
<p><i>Platanus racemosa/Baccharis salicifolia</i> riparian woodland dominates that floodplain above the perennial low-flow channel of Santa Paula Creek. Percent cover is slowly increasing in this area that was completely scoured and barren after January 2005 flooding. This location serves as the primary hiking trail maintained by the U.S. Forest Service, who has a permanent easement across the property.</p>		
2015		
<p><i>Platanus racemosa/Baccharis salicifolia</i> riparian woodland dominates that floodplain above the perennial low-flow channel of Santa Paula Creek. Percent cover is slowly increasing in this area that was completely scoured and barren after January 2005 flooding. Note: 2015 photos were taken in the same immediate vicinity as in 2014 but slightly south of the USFS trail.</p>		
2016		
<p><i>Platanus racemosa/Baccharis salicifolia</i> riparian woodland dominates that floodplain above the perennial low-flow channel of Santa Paula Creek. Percent cover is slowly increasing in this area that was completely scoured and barren after January 2005 flooding. Note: 2015 and 2016 photos were taken in the same immediate vicinity as in 2014 but slightly south of the USFS trail.</p>		

Year	View Upstream	View Downstream
2017		
<p>Conditions similar to previous year except for additional vegetation growth.</p>		
2018		
<p>Conditions similar to 2017 with additional growth, this station not burned in Thomas Fire</p>		
2019		
<p>Conditions similar to 2018 with additional vegetation growth</p>		
2020		
<p>Conditions unchanged from previous years except slightly denser vegetation growth.</p>		

Station 5

Year	View Upstream	View Downstream
2014		
<p><i>Alnus rhombifolia</i>-dominated riparian forest provides nearly 100% canopy cover over Santa Paula Creek.</p>		
2015		
<p><i>Alnus rhombifolia</i>-dominated riparian forest provides nearly 100% canopy cover over Santa Paula Creek. <i>Typha domingensis</i> occurs in the small canopy openings along the creek. Note: 2015 photos were taken in the same immediate vicinity but not exact same location as in 2014.</p>		
2016		
<p><i>Alnus rhombifolia</i>-dominated riparian forest provides nearly 100% canopy cover over Santa Paula Creek. <i>Typha domingensis</i> occurs in the small canopy openings along the creek.</p>		

Year	View Upstream	View Downstream
2017		
<p>Conditions similar to 2016 except understory has been scoured out and surface flow higher.</p>		
2018		
<p>Conditions similar to 2017 except understory has been burned by Thomas Fire</p>		
2019		
<p>Conditions similar to 2018 with minor channel bed changes after winter flooding</p>		
2020		
<p>Conditions have not changed except some dead White Alder have fallen across the stream</p>		

Station 6

Year	View Upstream	View Downstream
2013		
	None. Southern Steelhead observed.	<i>Alnus rhombifolia</i> provides ~50% canopy cover. Pool present between large boulders.
2014	Not Monitored	Not Monitored
2015		
	Photos from a short distance downstream from those from 2013. <i>Alnus rhombifolia</i> providing nearly 100% canopy cover.	
2016		
	Pool has silted in entirely. <i>Alnus rhombifolia</i> providing nearly 100% canopy cover.	

Year	View Upstream	View Downstream
2017		
<p>Pool has been scoured out again, with deep areas for Steelhead Trout, and surface flow higher.</p>		
2018		
<p>Conditions similar to 2017 except understory has been burned by Thomas Fire</p>		
2019		
<p>Higher flows and deeper pool than in 2018, otherwise, conditions similar as for 2018</p>		
2020		
<p>Conditions are similar. Left photo is turned a bit upstream from 2019 and right photo is taken from closer to the station than in the 2019 photo.</p>		

CONCLUSIONS AND RECOMMENDATIONS

The Thomas Fire of December 2017 burned through the SPCMB site; however, the riparian wetland vegetation was generally undamaged, or only the understory vegetation burned, leaving the trees either unburned or with only their bark and lower leaves scorched. Two small areas of riparian vegetation, dominated by *Alnus rhombifolia*, finally succumbed to the fire, one associated with the spring along the western edge of the bank site and one small patch along the northern edge of the 2005-created floodplain (photos of each below).



Left: Burned White Alder riparian forest damaged by Thomas Fire, with a healthy and robust understory dominated by Pacific Blackberry. Right: Small spring-fed White Alder riparian forest patch killed by Thomas Fire, with morning-glory and Black Cottonwood colonizing site.

Wetland riparian vegetation continues to mature along Santa Paula Creek and seeps/springs. The *Alnus rhombifolia* trees directly at the edge of the creek have formed a closed canopy over the creek, completely shading it for most of its length through the Bank Site. New plant and wildlife species are colonizing the floodplain, mostly by native species, as the vegetation continues to cover the bare areas exposed by the 2005 winter flood scouring event.

Active riverbed scouring occurred during winter 2017, 2018, 2019, and 2020 removing substantial herbaceous and low woody vegetation as a result of the record precipitation occurring in southern California this rain year. Surface flows were somewhat lower to that observed during 2019. Some of the understory vegetation regrew, but some was then burned in the Thomas Fire. The understory vegetation is expected to fully recover over the next few years.

Annual monitoring should continue to be conducted to detect invasive species such as *Tamarix ramosissima*, and to ensure that they are not reaching densities that will affect wetland function. *Tamarix ramosissima* was not detected onsite during 2019. The same small patches of *Vinca major* were not observed in 2019 but are likely to still be present. Overall, the Santa Paula Creek Mitigation Bank remains in a largely pristine condition and in little need of management. The new occurrence (one large plant) of *Cortedaria jubata*, an invasive exotic grass found at the spring at the western edge of the Bank (actually just outside the Bank parcel), should be monitored and eradicated if it expands.

DMEC recommends no new management actions at this time. Trash and graffiti continue to be an issue of concern (quantities of both were lower than observed in previous years); however, it is the responsibility of the easement holder, the USFS, to remove trash and erasing graffiti on a



bi-monthly basis. Very little trash and graffiti was observed during the 2020 monitoring visit, suggesting that the USFS has been maintaining their easement, and likely a result of the USFS trail closure after the Thomas Fire, with the trail closed through March 2018. The trail was also closed by the USFS in late May/early June as a result of overuse and abuse by the public, which likely helped keep graffiti and trash levels down.

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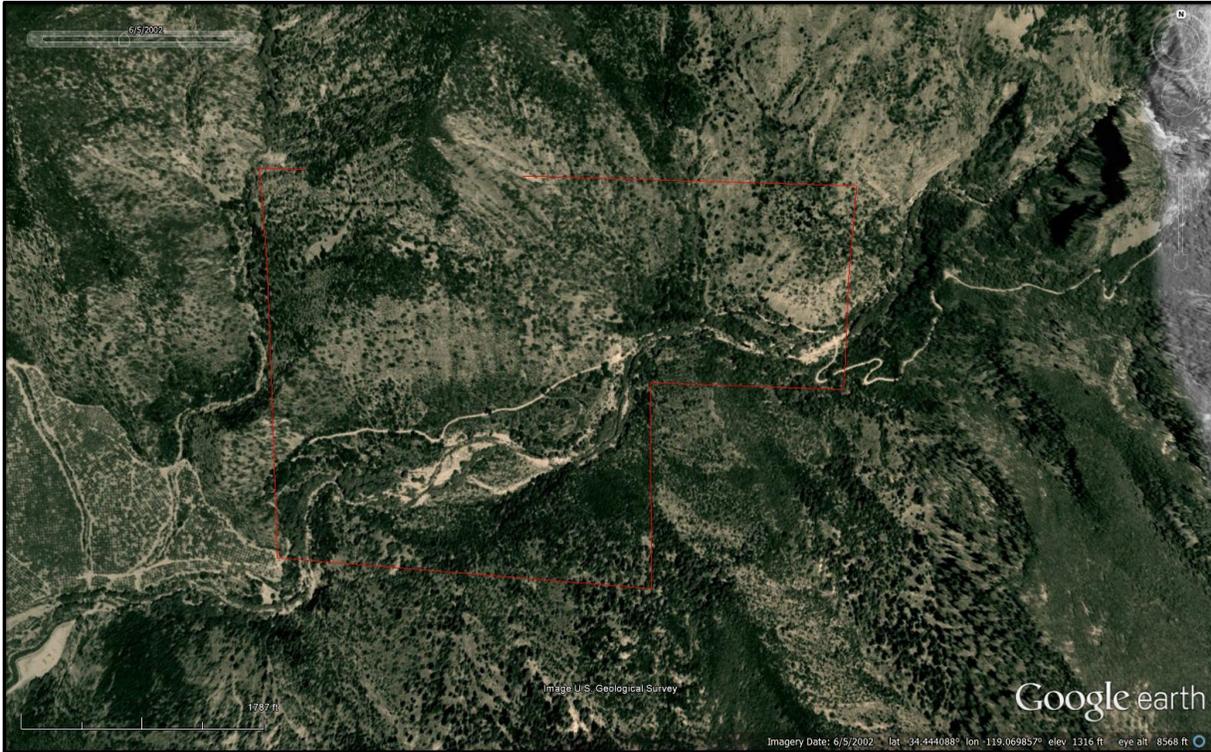
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APPENDIX

APPENDIX A. HISTORIC AND RECENT AERIAL PHOTOGRAPHS

APPENDIX A. HISTORIC AND RECENT AERIAL PHOTOGRAPHS

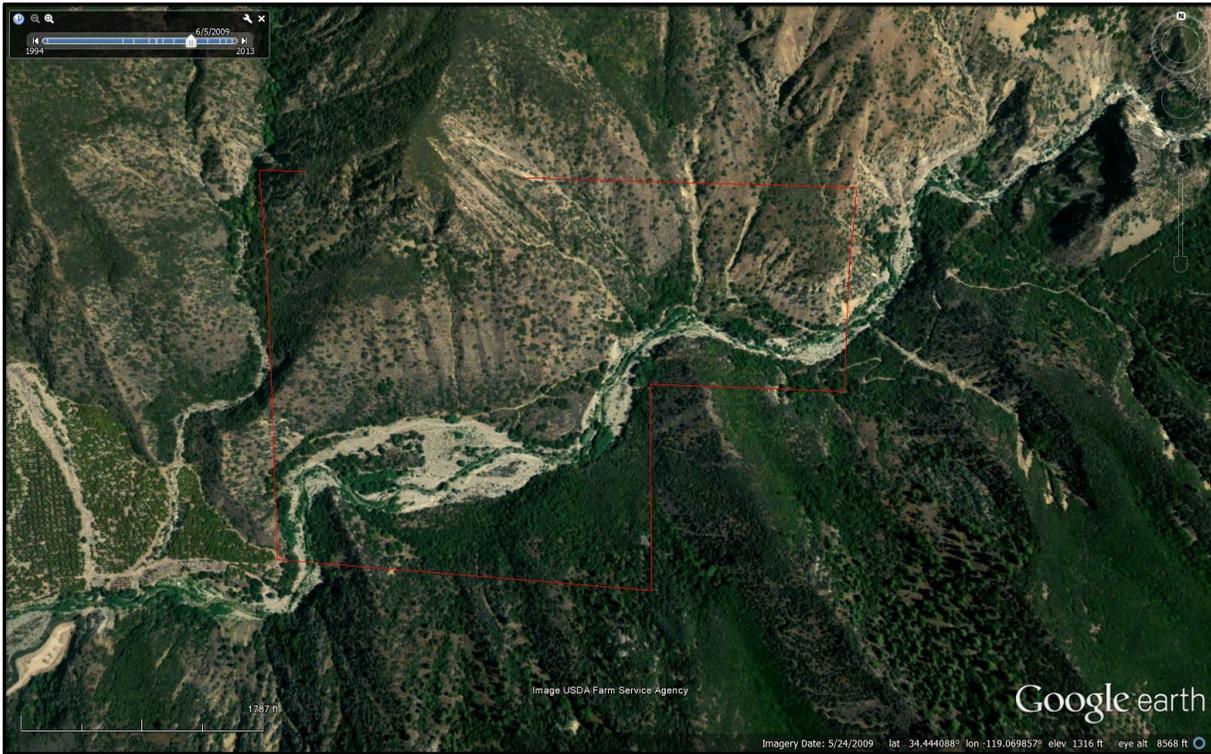
6 May 2002 Aerial Imagery



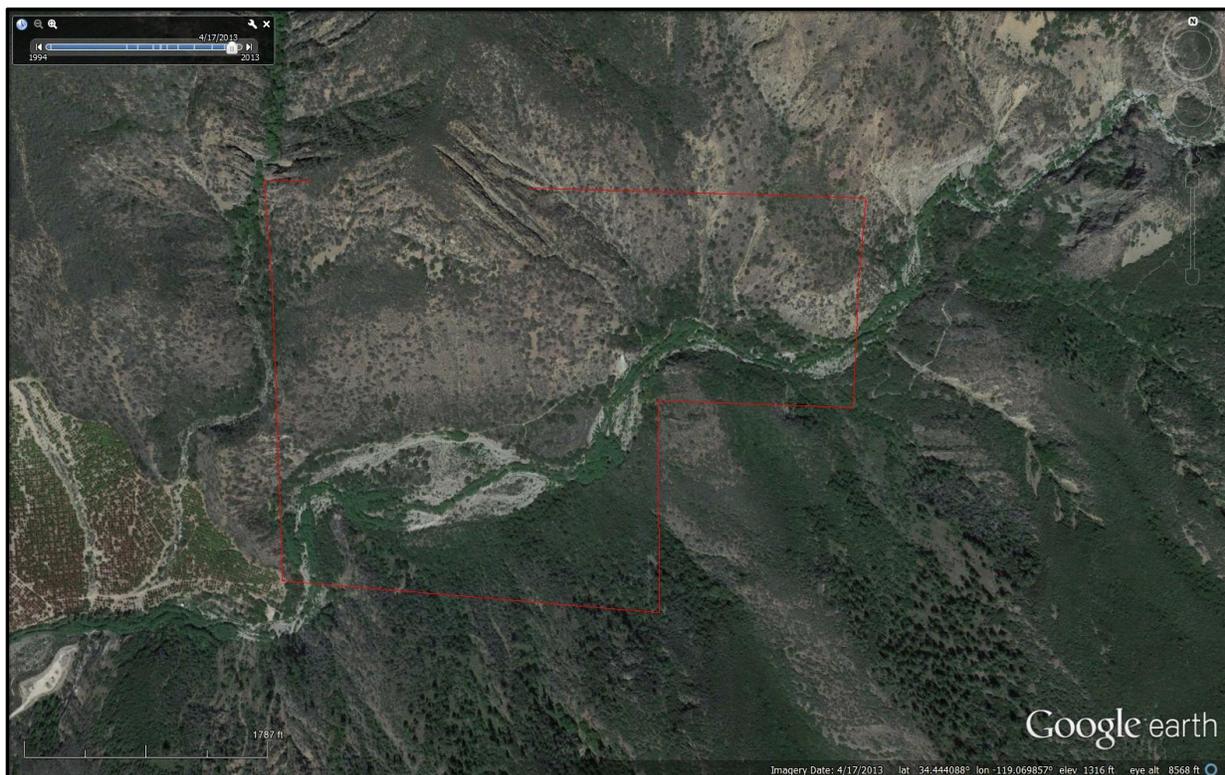
24 February 2005 Aerial Imagery



24 May 2009 Aerial Imagery



17 April 2013 Aerial Imagery



31 December 2014 Aerial Imagery



8 February 2016 Aerial Imagery

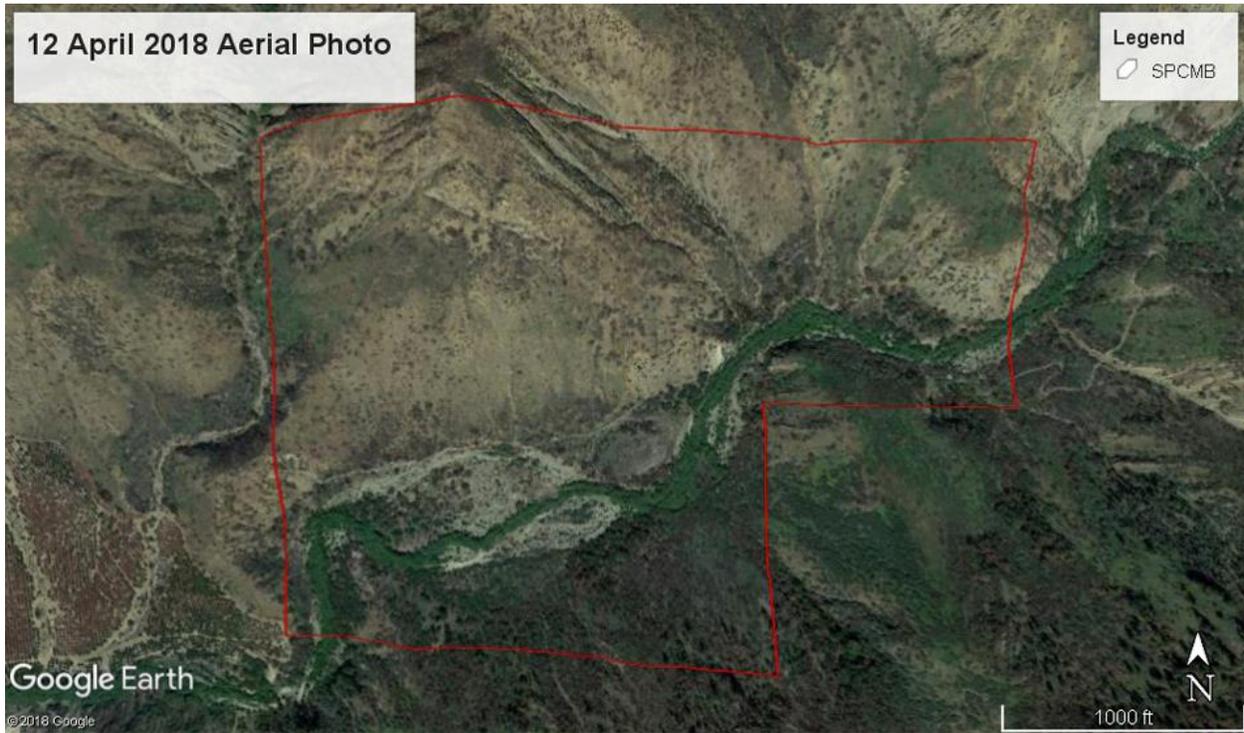


15 July 2017 Aerial Imagery



Points represent three observation points exclusive of annual monitoring stations.

12 April 2018



19 August 2019

