

MAPPING OF POTENTIAL GROUNDWATER DEPENDENT ECOSYSTEMS WITHIN THE SANTA CLARA RIVER VALLEY EAST GROUNDWATER SUBBASIN

Prepared for
GSI Water Solutions, Inc. and Santa
Clara Valley Water Agency

May 2020



MAPPING OF POTENTIAL GROUNDWATER DEPENDENT ECOSYSTEMS WITHIN THE SANTA CLARA RIVER VALLEY EAST GROUNDWATER SUBBASIN

Prepared for
GSI Water Solutions, Inc. and Santa
Clarita Valley Water Agency

May 2020

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300
esassoc.com



Bend	Oakland	San Diego
Camarillo	Orlando	San Francisco
Delray Beach	Pasadena	Santa Monica
Destin	Petaluma	Sarasota
Irvine	Portland	Seattle
Los Angeles	Sacramento	Tampa

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

TABLE OF CONTENTS

Mapping of Potential Groundwater Dependent Ecosystems Within the Santa Clara River Valley East Groundwater Subbasin

	<u>Page</u>
1.0 Introduction.....	1
2.0 Environmental Setting	2
2.1 Santa Clara River Watershed	2
2.2 Santa Clara River Valley East Groundwater Subbasin	2
3.0 TNC Guidance for Identifying GDEs	5
3.1 The Nature Conservancy Guidance for Preparing Groundwater Sustainability Plans	5
4.0 Methods Used to Identify Potential GDEs in the Santa Clara River Valley East Groundwater Subbasin	7
4.1 Data Compilation and Aerial Imagery Analysis Methods	7
4.2 Field Assessment Methods.....	8
4.3 Refinement of GDE Mapping	9
4.4 Depth to Groundwater Mapping.....	9
5.0 Results.....	10
5.1 Data Compilation and Aerial Imagery Analysis Methods	10
5.2 Field Assessment.....	10
5.3 Refinement of Potential GDE Mapping	11
6.0 Discussion	14
7.0 References	17

Appendices

- A Summary of the “Natural Communities Commonly Associated with Groundwater” Dataset and Online Web Viewer
- B Potential GDE Field Data Sheets

Page

List of Figures

1	Santa Clara River Valley East Groundwater Subbasin and Santa Clara River Watershed.....	3
2	Potential GDE Mapping.....	15

List of Tables

1	Summary of Potential Groundwater Dependent Ecosystems within the Santa Clara River Valley East Groundwater Subbasin	11
---	---	----

POTENTIAL GROUNDWATER DEPENDENT ECOSYSTEMS WITHIN THE SANTA CLARA RIVER VALLEY EAST GROUNDWATER SUBBASIN

1.0 Introduction

The Sustainable Groundwater Management Act (SGMA) of 2014 established a state policy in the California Water Code for the advancement of sustainable local groundwater management. It requires the establishment of groundwater sustainability agencies (GSAs) to manage groundwater resources for multiple objectives including social, economic, and environmental benefits. SGMA requires GSAs in high and medium priority basins to develop and implement groundwater sustainability plans (GSPs) for the purpose of halting overdraft and bringing groundwater basins into balanced levels of pumping and recharge.

As a part of the process, SGMA requires GSAs to identify and consider groundwater dependent ecosystems (GDEs) within their GSPs. GDEs are defined under SGMA as “ecological communities of species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface” (23 CCR § 351(m)). GDE types include seeps and springs; wetlands and lakes; terrestrial vegetation connected to shallow groundwater; and rivers, streams and estuaries.

To assist in the identification of GDEs, the Nature Conservancy (TNC) has developed a methodology and guidance document to assist in a structured and uniform process for defining and identifying GDEs that may be applied throughout the State. Section 3.0 of this report describes the full TNC methodology. This report accomplishes a portion of the TNC methodology to identify and map potential GDEs within the Santa Clara River Valley East Groundwater Subbasin for consideration in the Santa Clara River Valley East Groundwater Subbasin GSP under preparation by the Santa Clara Valley Groundwater Agency (SCVGSA).

Although the TNC guidance recommends using depth to groundwater as a means of identifying GDEs, the analysis in this report identifies potential GDEs, recognizing future work is needed to evaluate depth to groundwater in conjunction with GDEs. Groundwater depths vary substantially seasonally and year-over-year in this watershed. This report identifies and maps habitats within the natural watershed that require intermittent or perennial water, and characterizes these areas as “potential GDEs.” This provides for a conservative accounting of all areas that may or may not be

groundwater dependent. Subsequent analysis using depth to groundwater data as an indicator is planned, and would be anticipated to eliminate some areas identified in this report as potential GDEs.

2.0 Environmental Setting

The California Department of Water Resources (DWR) maintains and updates Bulletin 118 that identifies the occurrence and nature of groundwater within the state (DWR 2016), including the establishment and naming of groundwater basin boundaries, the status of pumping and overdraft for each basin, and the identification of priority basins experiencing critical overdraft.

California's 515 groundwater basins are classified into one of four categories: high, medium, low, or very low priority based on components identified in the California Water Code Section 10933(b). Basin priority determines which provisions of California Statewide Groundwater Elevation Monitoring (CASGEM) Program and the SGMA apply in a basin. DWR prioritized groundwater basins through the CASGEM Program in 2014. In 2015, SGMA went into effect and required DWR to prioritize basins. Consequently, DWR used the 2014 CASGEM Basin Prioritization as the initial SGMA basin prioritization, which identified the Santa Clara River Valley East Groundwater Subbasin as a high priority basin (DWR 2019a).

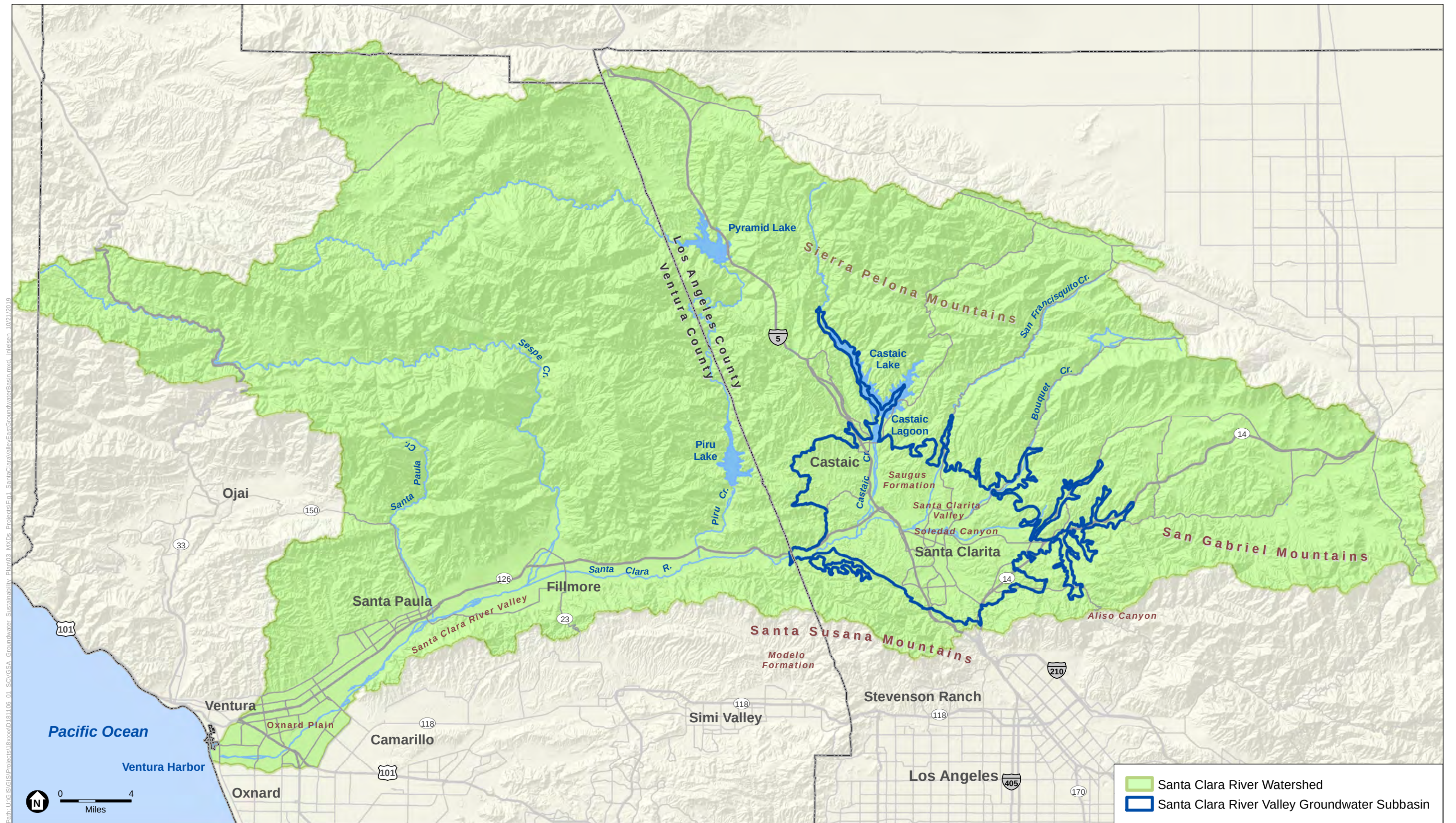
2.1 Santa Clara River Watershed

The Santa Clara River is the largest river system in Southern California remaining in a relatively natural state. The Santa Clara River originates in the northern slope of the San Gabriel Mountains in Los Angeles County, and flows in a westerly direction for approximately 84 miles through Tie Canyon, Aliso Canyon, Soledad Canyon, the Santa Clarita Valley, the Santa Clara River Valley, and the Oxnard Plain before discharging to the Pacific Ocean near the Ventura Harbor (**Figure 1**).

The Santa Clara River and tributary system covers about 1,634 square miles. Major tributaries include Castaic Creek, Bouquet Canyon Creek, and San Francisquito Creek in Los Angeles County, and the Sespe, Piru, and Santa Paula Creeks in Ventura County. Approximately 40 percent of the watershed is located in Los Angeles County and 60 percent is in Ventura County (Watersheds Coalition of Ventura County 2017). Land use within the watershed is predominately open space, with primarily residential, agriculture, and some industrial uses along the mainstem of the river. High quality riparian patches occur along the river and its tributaries (Water Boards 2019).

2.2 Santa Clara River Valley East Groundwater Subbasin

The Santa Clara River Valley East Groundwater Subbasin (Basin) is located in the central-western portion of Los Angeles County. The Basin is bound on the north by the Sierra Pelona Mountains, on the east and southeast by the San Gabriel Mountains, and on the south by the Santa Susana Mountains (**Figure 1**). It is bound on the west by the Modelo Formation, the Saugus Formation, and a thinning of the alluvium near the Piru Subbasin (DWR 2018). This includes nearly the entirety of the City of Santa Clarita as well as unincorporated Los Angeles County communities and census-designated areas such as Castaic and Stevenson Ranch.



SOURCE: ESRI, 2019; ESA, 2019.

SCVGSA Groundwater Sustainability Plan

Figure 1
Santa Clara Valley East Groundwater Subbasin and Santa Clara River Watershed

This page intentionally left blank

As discussed in Section 2.1, the area overlaying the Basin is drained by the Santa Clara River and its tributaries. A number of manmade structures or impoundments, such as Castaic Lake, exist throughout the Basin. Some stretches of riparian habitat are present along the length of the river and its tributaries. The habitats support a variety of flora and fauna in the watershed including common species and special status species. The federally endangered and state endangered and fully protected fish, the unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*, [UTS]), is resident in the Basin within segments of the Santa Clara River and one location in the upper segment of Bouquet Canyon Creek (Howard 2019). Other federal and state listed species that may be present within aquatic and riparian habitats in the watershed include Santa Ana sucker (*Catostomas santaanae*), arroyo toad (*Anaxyrus californicus*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax trailii extimus*), and the slender-horned spinyflower (*Dodecahema leptoceras*).

3.0 TNC Guidance for Identifying GDEs

3.1 The Nature Conservancy Guidance for Preparing Groundwater Sustainability Plans

The Nature Conservancy (TNC) developed a guidance document based on best available science to assist agencies, consultants, and stakeholders to efficiently incorporate GDEs into GSPs. In the guidance, five steps were outlined to inform the GSP process (TNC 2018a):

1. Step 1 – Identify GDEs;
 - a. Step 1.1 - Map GDEs
 - b. Step 1.2 - Characterize GDE Condition
2. Step 2 – Determine Potential Effects of Groundwater Management on GDEs;
3. Step 3 – Consider GDEs when Establishing Sustainable Management Criteria
4. Step 4 – Incorporate GDEs into the Monitoring Network; and
5. Step 5 – Identify Projects and Management Actions to Maintain or Improve GDEs.

There are two objectives within Step 1 which are to map (Step 1.1) and characterize (Step 1.2) GDEs in the Basin. Step 1.1 is the focus of this report.

3.1.1 Step 1.1 Map GDEs

The mapping process in Step 1.1 begins with the publicly available statewide GDE indicators (iGDE) database that was developed by the TNC in partnership with the California Department of Fish and Wildlife (CDFW) and the DWR using the best available statewide data on vegetation, springs and seeps, wetlands, and riparian mapping. This statewide database identifies polygons where GDEs may be present. These polygons may be refined further using local information and site specific data to ensure the map accurately reflects local conditions.

Aerial photos and local knowledge may be used to refine the data specific to local regions, resulting in addition, removal, and modifications to polygons. To confirm whether the GDE polygons are connected to groundwater, local hydrologic information may be used to confirm a groundwater connection to the potential GDE. For hydrologic data that is missing or insufficient, TNC guidance provides a list of questions to assess whether iGDE polygons are connected to groundwater. These questions include the following from Worksheet 1 of the guidance:

1. Is the iGDE underlain by a shallow unconfined or perched aquifer that has been delineated as being part of a Bulletin 118 principal aquifer in the basin?
2. Is the depth to groundwater under the iGDE less than 30 feet?
3. Is the iGDE located in an area known to discharge groundwater (e.g., springs/seeps)?

If the answer is yes to any of these three questions, per TNC guidance, it is likely a GDE.

Once a hydrologic connection between each iGDE polygon and groundwater is confirmed, the polygons can be designated as actual GDEs (TNC 2018a). As a part of the process, some GDE polygons are removed and other GDE polygons added, where appropriate. TNC recommends that iGDEs with insufficient hydrologic data also be considered GDEs but should be flagged for further investigation.

TNC further recommends grouping and consolidating GDE polygons based on their proximity to each other, GDE type (seeps and springs; wetlands and lakes; terrestrial vegetation; and rivers, streams and estuaries), and association to the same aquifer. Based on DWR's Bulletin 118 and local geologic information, it is recommended to group proximate GDE polygons in the Basin by aquifer.

3.1.2 Step 1.2 Characterize GDE Condition

Once GDEs are mapped, they are then characterized in Step 1.2 by their hydrologic and ecological conditions. Although mapping of potential GDEs is the focus of this report, additional characterization of potential GDEs is an anticipated next step (see discussion in Section 6.0).

To assess the ecological condition of each GDE, the TNC guidance recommends that datasets be reviewed including the iGDE database, USFWS's Environmental Conservation Online System (ECOS), CDFW's California Natural Diversity Database (CNDDDB), California Protected Areas Data Portal (CPAD), Areas of Conservation Emphasis (ACE), Regional Water Quality Control Board's (RWQCB's) beneficial use designations, and local plans or studies such as habitat conservation plans and natural resource management plans.

The TNC guidance recommends that the condition of each GDE unit be inventoried and documented by describing the species composition, habitat condition, and other relevant information reflected in Worksheet 2 of the guidance (TNC 2018a). Then the ecological condition of the GDE unit should be characterized as having a high, moderate, or low ecological value based on criteria provided in the TNC guidance.

This step has not been conducted for all the potential GDEs, although field data sheets have been prepared for a representative sampling of the GDE polygons. The identification of riparian habitat

in this watershed is considered to represent high ecological values that could potentially support sensitive species. Any further refinement of habitat condition could result in a reduction of assessed ecological values associated with specific GDE polygons (see discussion in Section 6).

4.0 Methods Used to Identify Potential GDEs in the Santa Clara River Valley East Groundwater Subbasin

4.1 Data Compilation and Aerial Imagery Analysis Methods

Both vegetation and wetland layers of the Natural Communities Commonly Associated with Groundwater (NCCAG) dataset (DWR 2019a) were used as the baseline mapping for the locations of potential GDEs. The NCCAG dataset is the same dataset as the statewide GDE indicators (iGDE) database referred to in the TNC guidance (TNC 2018a). The publicly available data compiled into the iGDE database includes several large-scale vegetation and wetland mapping efforts that conform to established State or federal mapping standards. The NCCAG (i.e., iGDE) can be accessed using the NC Dataset Viewer which is a web-based mapping program that allows for the viewing and download of vegetation and wetland layers contained in the NCCAG dataset (DWR 2019b). As further detailed in **Appendix A**, the data sources used to compile the iGDE database include the following:

1. VEGCAMP – The Vegetation Classification and Mapping Program, CDFW
2. CALVEG – Classification and Assessment with Landsat of Visible Ecological Groupings, USDA Forest Service
3. NWI V 2.0. – National Wetlands Inventory (Version 2.0.), United States Fish and Wildlife Service
4. FVEG – California Department of Forestry and Fire Protection, Fire and Resources Assessment Program (CALFIRE FRAP).
5. United States Geologic Survey (USGS) National Hydrography Dataset (NHD)
6. Mojave Desert Springs and Waterholes (Mojave Desert Spring Survey)

Although the iGDE database lists the National Wetland Inventory (NWI) as one of its data sources, it was noted that the entirety of the NWI data was not accurately depicted. Therefore, NWI data were taken from its original U.S. Fish and Wildlife (USFWS) source to identify areas not included in the iGDE database but which contained riverine channels, riparian, or wetland vegetation. Spatial data were assembled in Keyhole Markup Language (KML) files, that were zipped (i.e., saved as KMZs). The KMZs were prepared using the most current aerial imagery available. The original iGDE database was used to create KMZ 1 (Original iGDE Database).

The Basin boundary defined in Bulletin 118, as viewed on the NC Dataset Viewer (DWR 2019b), was used as the area within which potential GDEs are to be identified (DWR 2016).

Using aerial imagery (Google Earth Pro 2019), the next step was to keep, add, or remove potential GDE polygons in accordance with Step 1.1 of the TNC guidance based on an assessment and interpretation of vegetative cover and/or land use. Added polygons included vegetation communities that were already mapped as potential GDE polygons in the original iGDE database, but needed to be revised or added based on the vegetative cover shown on the aerial imagery (i.e., unmapped sections of river channels). These added polygons were assigned one of the vegetation or wetland classifications of an adjacent polygon or an existing classification as used in the iGDE dataset, for consistency (KMZ 2). The added potential GDE polygons were included with the original iGDE database to create a working iGDE database [(KMZ 2 (iGDE Database + Added GDEs)]. Areas that were difficult to assess using aerial imagery were noted as needing a field assessment to confirm the vegetation present, as discussed below.

The methodology described in this report did not implement the TNC methodology considering depth to groundwater as a primary factor for determining GDE. Additional refinement is needed in future steps, and is described in Section 6.0.

4.2 Field Assessment Methods

In order to verify polygons of the working iGDE database reflected in KMZ 2, and to gather species and habitat information, representative potential GDE polygons were selected for a field assessment. These areas included the following:

1. At least one of each habitat type reflected in the original iGDE database
2. Areas where vegetation type or hydrology was unclear based on the aerial imagery analysis (i.e., isolated tree clusters with no obvious connection to a water source)

Prior to the field assessment, a field data sheet was developed that incorporated species and habitat information, and environmental beneficial uses established by the Los Angeles RWQCB (LARWQCB 2016), consistent with TNC guidance for determining the ecological condition of a potential GDE. Additional information on the field data sheet included, but was not limited to, dominant plant species observed within the tree, shrub, and herbaceous layers; wildlife species observed; hydrology information such as the presence of surface flows or ponded water and the source of water; and soil type. The data sheet was completed for each of the potential GDE polygons selected for a field assessment that were accessible.

The field assessment was conducted by ESA biologists on September 5 and 6, 2019. The survey was conducted on foot within accessible portions of the representative potential GDE polygons, which comprised 335 acres. Aerial photography and tablets using ArcGIS Collector were used to accurately locate each polygon. Vegetation communities were characterized and mapped in the field in accordance with the vegetation classifications from the original iGDE database. In areas that were not accessible at the time of the survey, visual observations were made from the nearest accessible locations. Inaccessible locations typically occurred on private or gated property, and trespassing was avoided. Areas where the polygon could not be visually assessed from a distance or with binoculars were not analyzed, and were noted as being inaccessible. Inaccessible polygons accounted for a total of 12 distinct polygons totaling 30 acres (or an estimated 8% of the total survey

area). Inaccessible polygons were kept as potential GDE polygons with the original vegetation classification. Datasheets prepared during the field assessment are included in **Appendix B**.

4.3 Refinement of GDE Mapping

4.3.1 Removal of Potential GDE Polygons

After the field assessment, it became evident that some habitat types do not meet the definition of GDEs as defined under SGMA. These areas include the following:

1. Upland habitats that were planted or landscaped, and/or are currently supported by irrigation;
2. Human-made features¹ maintained by management of surface flows (i.e., intakes/outlets) such as golf course ponds, detention basins, concrete-lined channels, open water reservoir/lakes and associated riparian/wetland vegetation (i.e., Castaic Lake);
3. Barren² segments of river channels; and
4. Riversidean scrub habitats. Vegetation classified within the original iGDE database as Riversidean Alluvial Scrub, Riverwash Scrub, or Scalebroom were removed from the potential GDEs since these habitats are established in river floodplains where they are dependent on (limited) flood events (Beller et al 2011), and are generally not known to be groundwater dependent.

The remaining potential GDE polygons were compiled into KMZ 3 (iGDE Database + Added GDEs - Removed GDEs).

4.3.2 Remapping and Reclassification of Potential GDE Polygons

A review of all confirmations or modifications of the field-assessed potential GDEs made during the field assessment was conducted in coordination with ESA's Geospatial Services (GIS) staff. Based on the field assessment, a handful of polygons originally classified as Coast Live Oak, Riparian Mixed Hardwood, Riversidean Alluvial Scrub, Scalebroom or Willow (Shrub) were reclassified and remapped from KMZ 3 as necessary and kept as potential GDEs.

The vegetation communities of the potential GDEs from KMZ 3 were then reclassified according to *A Manual of California Vegetation, Second Edition* (Sawyer et al 2009) based on the dominant plant species observed during the field assessment. In addition, in accordance with TNC guidance, the potential GDE polygons were also grouped by potential GDE type (seeps and springs; wetlands and lakes; terrestrial vegetation; and rivers, streams and estuaries). The potential GDE polygons reflective of this step were compiled into KMZ 4 (Final Potential GDE Mapping).

4.4 Depth to Groundwater Mapping

Step 1.1 of the TNC guidance recommends that groundwater mapping be conducted to determine where depth to groundwater is greater than 30 feet. The guidance suggests that areas with

¹ Human-made features exclude historic drainage features that were later surrounded by development.

² Barren habitat is defined by the absence of vegetation. Any habitat with <2% total vegetation cover by herbaceous, desert, or nonwildland species and <10% cover by tree or shrub species is defined this way (CDFG 1988).

groundwater depths greater than 30 feet may be eliminated from the GDE inventory. The GSAs can use the most appropriate depth to groundwater in their basin. However, in the future, application of depth to groundwater data that reflects seasonality and year type will be applied to this inventory. This additional step will likely reduce the total acreage of GDEs in the watershed compared with the “potential GDE” acreage provided in this assessment.

5.0 Results

5.1 Data Compilation and Aerial Imagery Analysis Methods

The iGDE database source data includes an estimated 6,926 acres of potential GDEs (KMZ 1) categorized by the NCCAG as wetlands and vegetation. These two categories are a combination of a number of different vegetation classifications systems. As such, the vegetation types within the NCCAG dataset associated with these two categories included: Baccharis (Riparian), California Sycamore (*Platanus racemosa*), Coast Live Oak (*Quercus agrifolia*), Fremont Cottonwood (*Populus fremontii*), Arrowweed (*Pluchea sericea*), Riparian Mixed Hardwood, Riparian Mixed Shrub, Riversidean Alluvial Scrub, Riverwash Scrub, Narrowleaf Willow (*Salix exigua*), Scalebroom (*Lepidospartum squamatum*), Tule – Cattail (*Schoenoplectus* sp. – *Typha* sp.), Valley Oak (*Quercus lobata*), Wet Meadows, Willow, and Willow (Shrub). NWI data within the Basin contained the following classifications: Freshwater Emergent Wetland, Freshwater Forested/Shrub Wetland, Freshwater Pond, Lake, and Riverine.

After review of aerial imagery, a total of 1,533 acres of potential GDEs were added to the original iGDE database, totaling 8,459 acres of potential GDEs as reflected in KMZ 2. These added potential GDE polygons included the following vegetation communities: Coast Live Oak, Riparian Mixed Hardwood, Riparian Mixed Scrub, and Willow (Shrub). Several of the less common communities that occurred within the NCCAG dataset were consolidated into the surrounding communities if the analysis of aerial imagery was not conclusive to that specific type of community. This included Baccharis, California Sycamore, Riverwash Scrub, Narrowleaf Willow, Tule-Cattail, and Valley oak. One detention basin and four ponds were also noted as potential GDEs based on the data compilation and aerial imagery analysis, as they are features located along natural drainages.

5.2 Field Assessment

During the field assessment, some areas originally mapped in the iGDE database as Riversidean Alluvial Scrub or Willow (Shrub) were confirmed to be riparian woodland communities (Riparian Mixed Hardwood or Coast Live Oak) along the Santa Clara River mainstem, Castaic Creek, and Bouquet Canyon. Several willow species including Goodding’s willow (*Salix gooddingii*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*) and narrowleaf willow occurred within much of the Riparian Mixed Hardwood community. Upland habitats surveyed in the field that were planted or landscaped, and/or are currently supported by irrigation, included pine and eucalyptus trees.

It should be noted that not all polygons identified as potential GDEs were visited during the field assessment. Several areas identified for field assessment (such as Potrero Canyon, detention

basins, and four ponds) were not accessible due to a number of factors including the presence of private property, locked gates, fences or other factors which prevented entry. Inaccessible areas totaled 30 acres, and vegetation communities or land uses within these inaccessible areas were classified solely based on the aerial imagery analysis.

5.3 Refinement of Potential GDE Mapping

Further refinement of the potential GDEs was conducted to remove habitat types identified in aerial imagery and confirmed in the field visit that do not meet the definition of GDEs as defined under SGMA. Riversidean Alluvial Scrub, Riverwash Scrub, and Scalebroom habitats were removed from the potential GDE database. In addition, habitat types associated with man-made features such as wet meadows on the shores of Castaic Lake, planted/irrigated areas, detention basins, golf course ponds, ponds, barren channels and other man-made features were also removed from the potential GDE database. A total of 6,567 acres were removed from the potential GDE database (KMZ 3).

The remaining potential GDEs were then reclassified in accordance with *A Manual of California Vegetation, Second Edition* where applicable, based on observations from the field assessment. **Table 1** lists and **Figure 2** displays the potential GDEs reflected in KMZ 4, totaling an estimated 1,890 acres. The primary vegetation types include Fremont cottonwood forest and coast live oak woodland along the Santa Clara River and its tributaries.

TABLE 1
SUMMARY OF POTENTIAL GROUNDWATER DEPENDENT ECOSYSTEMS WITHIN THE SANTA CLARA RIVER VALLEY EAST GROUNDWATER SUBBASIN

Waterway/Tributary	Tributary ID Number	Vegetation Classification Based on Aerial Imagery Analysis ^a	Revised Vegetation Classification ^b	Area (acres)
Santa Clara River	SCR	Riparian mixed hardwood	Fremont cottonwood forest	698.33
Unnamed tributary to Santa Clara River (Fairfield Way)	SCRTRIB3	Riparian mixed hardwood	Fremont cottonwood forest	1.65
Unnamed tributary to Santa Clara River (Turn Leaf Court)	SCRTRIB2b	Riparian mixed hardwood	Fremont cottonwood forest	1.10
Unnamed tributary to Santa Clara River (Golden Valley Road)	SCRTRIB2a	Coast live oak	Coast live oak woodland	2.33
Unnamed tributary to Santa Clara River (Keaton Street)	SCRTRIB1	Riparian mixed hardwood	Fremont cottonwood forest	5.29
Unnamed tributary to Santa Clara River (Sierra Highway, south of Soledad Canyon Road)	SCRTRIB4	Riparian mixed hardwood	Fremont cottonwood forest	1.01

TABLE 1 (CONTINUED)
SUMMARY OF POTENTIAL GROUNDWATER DEPENDENT ECOSYSTEMS WITHIN THE SANTA CLARA RIVER
VALLEY EAST GROUNDWATER SUBBASIN

Waterway/Tributary	Tributary ID Number	Vegetation Classification Based on Aerial Imagery Analysis^a	Revised Vegetation Classification^b	Area (acres)
Unnamed tributaries to Santa Clara River (Sierra Highway, north of Soledad Canyon Road)	SCRTRIB5	Coast live oak	Coast live oak woodland	2.34
		Riparian mixed hardwood	Fremont cottonwood forest	1.84
		Pond	Open water	0.50
Unnamed tributary to Santa Clara River (Sand Canyon Road)	SCRTRIB6	*Coast live oak	Coast live oak woodland	41.95
		*Pond	Open water	1.12
Unnamed tributary to Santa Clara River (west of I-5, South of Santa Clara River)	SCRTRIB7	Coast live oak	Coast live oak woodland	12.64
Unnamed tributary to Santa Clara River (west of I-5, Borton Street, Val Verde)	SCRTRIB8	*Coast live oak	Coast live oak woodland	7.69
		*Riparian mixed hardwood	Fremont cottonwood forest	1.66
Unnamed tributaries of Santa Clara River (far western GWB, Del Valle)	SCRTRIB9	Riparian mixed hardwood	Fremont cottonwood forest	0.9
		*Riparian mixed scrub	Mulefat thickets	3.57
South Fork Santa Clara River	SCRTRIB10	Riparian mixed hardwood	Fremont cottonwood forest	67.37
		Riparian mixed scrub	Mulefat thickets	2.33
Unnamed tributary to South Fork Santa Clara River (La Salle Canyon Road)	SCRTRIB11	*Coast live oak	Coast live oak woodland	5.19
		Riparian mixed hardwood	Fremont's cottonwood forest	0.65
		*Detention basin	Detention basin	0.59
Unnamed tributary to South Fork Santa Clara River (The Old Road)	SCRTRIB12	Coast live oak	Coast live oak woodland	44.93
Bouquet Creek	SCRTRIB13	Riparian mixed hardwood	Fremont cottonwood forest	13.07
Unnamed tributary to Bouquet Creek (Forest Route 6N18)	SCRTRIB14	Coast live oak	Coast live oak woodland	1.35
		Riparian mixed scrub	Mulefat thickets	1.29
Castaic Creek	SCRTRIB15	Riparian mixed hardwood	Fremont cottonwood forest	201.10

TABLE 1 (CONTINUED)
SUMMARY OF POTENTIAL GROUNDWATER DEPENDENT ECOSYSTEMS WITHIN THE SANTA CLARA RIVER
VALLEY EAST GROUNDWATER SUBBASIN

Waterway/Tributary	Tributary ID Number	Vegetation Classification Based on Aerial Imagery Analysis^a	Revised Vegetation Classification^b	Area (acres)
Unnamed tributary to Castaic Creek (Tapia Canyon Road)	SCRTRIB16	Coast live oak	Coast live oak woodland	24.09
Unnamed tributaries to tributary of Castaic Creek (Hasley Canyon Road)	SCRTRIB17	Coast live oak	Coast live oak woodland	4.25
		Riparian mixed hardwood	Fremont cottonwood forest	2.77
San Francisquito Creek	SCRTRIB18	Riparian mixed hardwood	Fremont cottonwood forest	91.22
Placerita Creek	SCRTRIB19	Riparian mixed hardwood	Fremont cottonwood forest	17.58
		Coast live oak	Coast live oak woodland	2.77
Unnamed tributary to Placerita Creek (Oro Fino Mountainway)	SCRTRIB20	Coast live oak	Coast live oak woodland	25.74
Newhall Creek	SCRTRIB21	Riparian mixed hardwood	Fremont cottonwood forest	15.47
Unnamed tributary to Newhall Creek (Pine Street)	SCRTRIB22	Coast live oak	Coast live oak woodland	43.75
Potrero Canyon	SCRTRIB23	*Coast live oak	Coast live oak woodland	3.43
		*Riparian mixed hardwood	Fremont cottonwood forest	35.95
Features Associated with Sand Canyon Golf Course	SCRTRIB24	*Pond	Open water	1.13
		*Riparian mixed hardwood	Fremont cottonwood forest	1.14
		*Riparian mixed scrub	Mulefat thickets	0.12
Total				1,889.96

NOTES:

* Inaccessible during the field assessment.

^a Based on KMZ 2.

^b Vegetation communities classified using A Manual of California Vegetation, Second Edition (Sawyer et al 2009).

6.0 Discussion

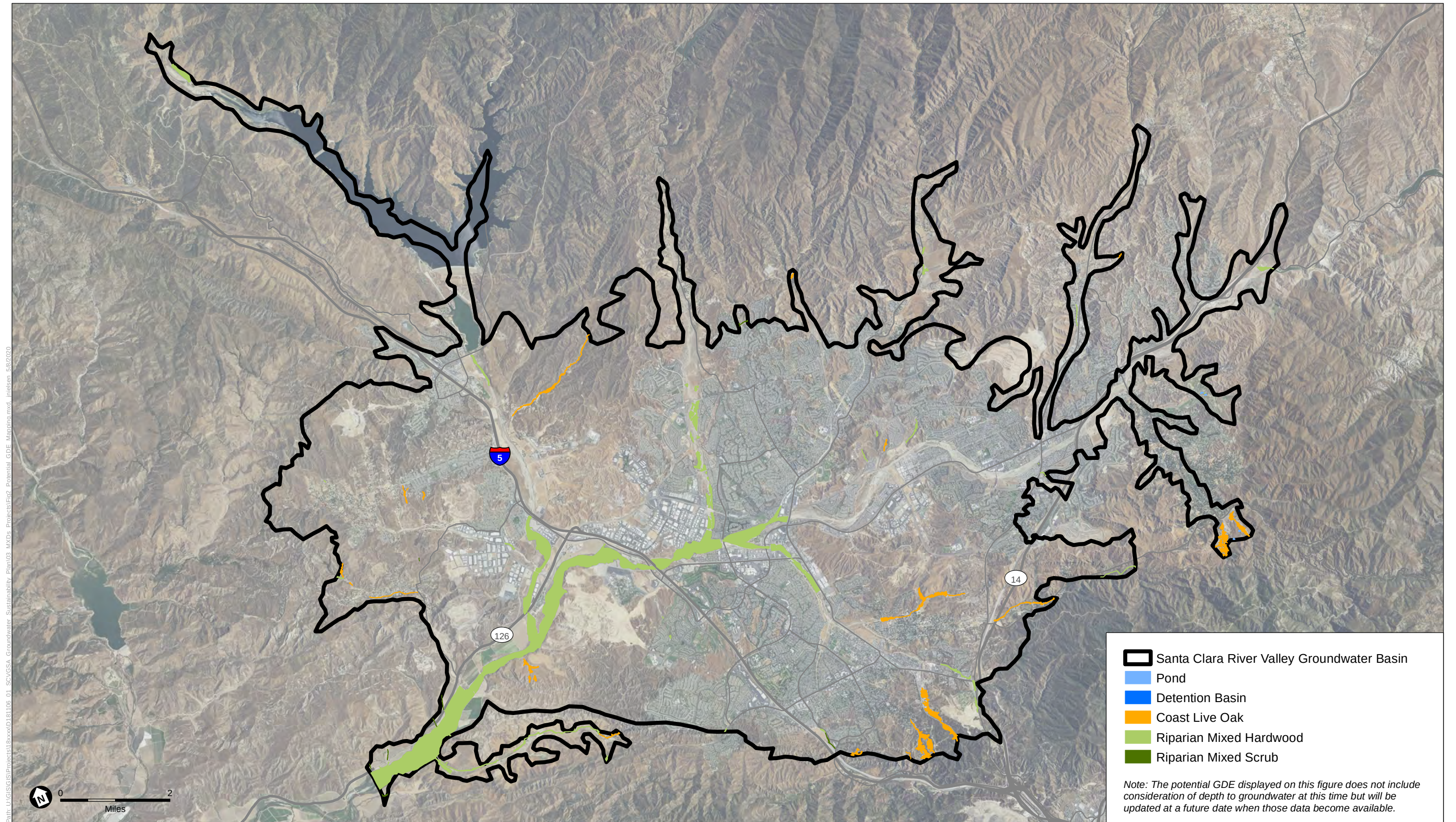
Following the TNC suggested methodology, an estimated 1,890 acres of potential GDE have been documented within the Basin boundaries. The KMZ 4 database provides the geographic location for each distinct potential GDE. The potential GDEs are comprised primarily of riparian corridors. Much of the acreage associated with the potential GDEs occurs in the main stem of the Santa Clara River. However, many smaller potential GDEs are identified within the tributaries reaching into the higher elevations. Some potential GDEs in the higher elevations may be fed from higher elevation seepage disconnected from the shallow groundwater basin.

In accordance with Step 1.1 of the TNC guidance, potential GDEs with a depth to groundwater of greater than 30 feet may indicate that no connection to groundwater is possible to support vegetation. However, the analysis in this report has not applied this 30-foot depth to groundwater refinement in an effort to provide a more conservative approach. Application of depth to groundwater mapping is considered a next step in the refinement of GDEs in the watershed.

However, groundwater levels vary with seasons, hydrologic year types, and alluvial aquifer pumping. This analysis inventories all habitats observed within the semi-arid watershed that require intermittent or perennial access to water, subtracting only the man-made water features and irrigated landscapes (including agricultural land). This approach ensures that all the valued habitat in the local drainages is captured in the potential GDE inventory. This approach allows for future refinement as more data is collected and incorporated on depth to groundwater and other relevant factors.

For example, depth to groundwater within the Santa Clara River channel just above the Valencia Water Reclamation Plant (WRP) discharge may be greater than 30 feet. However, this area supports riparian vegetation and important aquatic habitat. Additional data on the source of water supporting this vegetation is needed to better understand the system. This report recognizes this complexity and captures all the valued habitat in this area to ensure a conservative approach.

Similarly, downstream of the Valencia WRP discharge, the Santa Clara River exhibits surface flows to the western edge of the Basin. Groundwater upwelling is known to occur in this portion of the river (Cox et al 2003), but the location, extent of the connection of the river channel with the underlying alluvial groundwater basin may vary with seasonality and by hydrologic year type, making it difficult to distinguish surface-flow-dependent habitats from GDEs. For purposes of this assessment, the entire 7-mile stretch is considered to be a potential GDE as a conservative assumption. In the future, as additional data on depth to groundwater is refined, it may become apparent that some of this potential GDE acreage is actually disconnected from groundwater and relies solely on surface water flows. Rather than making that conclusion now, this report provides a conservative approach to ensure the existing riparian habitat acreage in the watershed is inventoried.



SOURCE: ESA, 2020; NWI, 2019; NCCAG, 2019.

SCVGSA Groundwater Sustainability Plan

Figure 2
Potential GDE Mapping

This page intentionally left blank

This report does not complete Step 1.2 of the TNC guidance that recommends characterizing the ecological value of each GDE unit to assist with GDE prioritization. Rather than refine the relative value of each GDE polygon, this report documents the existence of habitat that may be suitable to support sensitive species. Relative quality of the habitat in each stretch of the river may depend on occupation by sensitive species, the season, consistency of water availability, invasive species, nuisance surface flows, urban runoff water quality including trash, and in stream human use including homeless encampments. Additional field verification and/or other study is needed to fully implement Step 1.2 of the TNC guidance for the potential GDE polygons and is a next step in refinement of the GDE inventory. However, in this semi-arid environment, the current existence of riparian, aquatic, and woodland habitats represents important ecological values that have the potential to support sensitive species

In summary, additional refinements to the potential GDEs will be made in the future to more accurately map GDEs. This includes applying depth to groundwater and habitat characterizations consistent with TNC methodology Step 1.2. additional refinement will likely reduce the acreage of actual GDEs in the watershed mapped in this report. This report provides a conservative and inclusive inventory of potential GDEs in the Basin.

7.0 References

- Beller, EE, RM Grossinger, MN Salomon, SJ Dark, ED Stein, BK Orr, PW Downs, TR Longcore, GC Coffman, AA Whipple, RA Askevold, B Stanford, JR Beagle. 2011. Historical ecology of the lower Santa Clara River, Ventura River, and Oxnard Plain: an analysis of terrestrial, riverine, and coastal habitats. Prepared for the State Coastal Conservancy. A report of SFEI's Historical Ecology Program, SFEI Publication #641, San Francisco Estuary Institute, Oakland, CA.
- California Water Boards, Los Angeles Region (Water Boards). 2016. Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.
- _____. 2019. Santa Clara River Watershed. Available at: https://www.waterboards.ca.gov/rwqcb4/water_issues/programs/regional_program/Water_Quality_and_Watersheds/santa_clara_river_watershed/summary.shtml. Accessed October 7, 2019.
- California Department of Water Resources (DWR). 2016. California's Groundwater Bulletin 118 Update 2016.
- _____. 2018. California's Groundwater Bulletin 118. Santa Clara River Valley - Santa Clara River Valley East. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-B118-Basin-Descriptions/B118-Basin-Boundary-Description-2003---4_004_07.pdf. Accessed October 7, 2019.
- _____. 2019a. Basin Prioritization. Available at: <https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization>. Accessed October 4, 2019.
- _____. 2019b. NC Dataset Viewer. <https://gis.water.ca.gov/app/NCDataSetViewer/>

- Cox, M.H., G.O. Mendez, C.R. Kratzer, and E.G. Reichard, 2003. Evaluation of Tracer Tests Completed in 1999 and 2000 on the Upper Santa Clara River, Los Angeles and Ventura Counties, California. U.S. Geological Survey, Water-Resources Investigations Report 03-4277, 40 p., Appendix A-H, as cited in Sanitation Districts of Santa Clarita Valley 2010, Reduced Discharge Technical Study Upper Santa Clara River.
- Google. 2019. Google Earth Pro.
- Howard, Steve. 2019. Personal email communication with Steve Howard regarding the location of occupied unarmored threespine stickleback habitat. August 21, 2019.
- Los Angeles Regional Water Quality Control Board (LARWQCB). 2016. Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.
- The Nature Conservancy (TNC). 2018a. Groundwater Dependent Ecosystems under the Sustainable Groundwater Management Act.
- _____. 2018b. Plant Rooting Depth Database.
https://groundwaterresourcehub.org/public/uploads/pdfs/Plant_Rooting_Depth_Database_20180419.xlsx
- Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation. 2nd Edition. California Native Plant Society, 2009. Available at <http://vegetation.cnps.org/>. Accessed October 2019.
- Watersheds Coalition of Ventura County. 2017. Santa Clara River. Available at: http://wcvc.ventura.org/santa_clara.htm. Accessed on October 7, 2019.

Appendix A

**Summary of the “Natural
Communities Commonly
Associated with Groundwater”
Dataset and Online Web Viewer**

Summary of the “Natural Communities Commonly Associated with Groundwater” Dataset and Online Web Viewer



California Department of Water Resources
Sustainable Groundwater Management Program

April 2018

This page intentionally left blank.

Foreword

April 2018

The objective of this Summary Document is to provide the public with information regarding the “Natural Communities Commonly Associated with Groundwater” dataset (hereafter referred to as the Natural Communities dataset) and online web viewer provided by the California Department of Water Resources (DWR). This Summary document provides information on how Groundwater Sustainability Agencies (GSAs) can potentially use this dataset and apply local knowledge and collaborate with other entities to identify groundwater dependent ecosystems (GDEs) in their respective groundwater basins.

The information provided in this document describes how the Natural Communities dataset is organized, its associated assumptions and limitations, general background information about the development of the dataset, and includes a brief introduction to the online web viewer.

This document is not a substitute for the Regulations for Groundwater Sustainability Plans (GSPs) or other Sustainable Groundwater Management Act (SGMA) requirements. Use of the Natural Communities dataset by a GSA to develop a component of a GSP would not automatically result in DWR approval of a GSP. Use of the Natural Communities dataset is not mandatory; GSAs may use this dataset or other available data and local information to identify GDEs.

The information provided in the Natural Communities dataset or use of this information does not preempt the authority of local land use agencies or alter any water right or the priority of any water right under state or federal law.

Contents

Section	Page
Natural Communities Commonly Associated with Groundwater Dataset and Online Web Viewer	5
1.1 Natural Communities Dataset Background	5
1.2 Dataset Description	5
Data Sources	5
Processing & Quality Assurance	8
1.3 Natural Communities Online Web Viewer	11
Applicability of the Natural Communities Dataset to GSP Development	13
References	14
Appendix A	16
SGMA Requirements Related to GDEs.....	16

Natural Communities Commonly Associated with Groundwater Dataset and Online Web Viewer

1.1 Natural Communities Dataset Background

The Sustainable Groundwater Management Act (SGMA) and DWR's Groundwater Sustainability Plan (GSP) regulations establish new requirements on the elements that Groundwater Sustainability Agencies (GSAs) are to include in their GSPs. One of those requirements is the identification of groundwater dependent ecosystems (GDEs), and where appropriate, impacts on GDEs. GDEs are defined in the GSP Regulations as 'ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface'. Determination of GDEs within a groundwater basin is the responsibility of the GSAs. DWR created the Natural Communities Commonly Associated with Groundwater dataset (hereafter referred to as the Natural Communities dataset) to assist GSAs in the preparation and implementation of GSPs. Refer to Appendix A for text related to identification of GDEs included in SGMA and the GSP Regulations.

The Natural Communities dataset is a compilation of 48 publicly available State and federal agency datasets that map vegetation, wetlands, springs, and seeps in California. A working group comprised of DWR, the California Department of Fish and Wildlife (CDFW), and The Nature Conservancy (TNC) reviewed the compiled dataset and conducted a screening process to exclude vegetation and wetland types less likely to be associated with groundwater and retain types commonly associated with groundwater, based on criteria described in Klausmeyer et al., 2018. Two habitat classes are included in the Natural Communities dataset: (1) wetland features commonly associated with the surface expression of groundwater under natural, unmodified conditions; and (2) vegetation types commonly associated with the sub-surface presence of groundwater (phreatophytes).

The data included in the Natural Communities dataset do not represent DWR's determination of a GDE. However, the Natural Communities dataset can be used by GSAs as a starting point when approaching the task of identifying GDEs within a groundwater basin.

1.2 Dataset Description

Data Sources

The publicly available data compiled into the Natural Communities dataset include several large-scale vegetation and wetland mapping efforts that conform to established State or federal mapping standards, one large-scale seeps and springs mapping effort that is a component of the National Map, and one mapping effort that updated the locations of Mojave Desert springs. This section describes the data sources used and reasons for inclusion during the development of the Natural Communities dataset.

VEGCAMP – THE VEGETATION CLASSIFICATION AND MAPPING PROGRAM, CDFW

Source link: <https://www.wildlife.ca.gov/Data/VegCAMP>

The VegCAMP dataset is considered the highest resolution data source of California vegetation mapping available and is used as the basis for the Natural Communities dataset. The purpose of VegCAMP is to maintain maps and classification of all vegetation in the State to support conservation and management decisions at the local, regional, and state levels. Fish and Game Code §1940 directed CDFW to develop and maintain a vegetation dataset for the State of California in compliance with Survey of California Vegetation (SCV) Classification and Mapping Standards (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=102342&inline>).

Based on the SCV standard, vegetation maps consist of geospatially registered polygons which are interpreted through analysis of aerial imagery. The base imagery must meet or exceed the National Agriculture Imagery Program (NAIP) resolution standards (one-meter ground sample distance). The minimum mapping unit is usually 1 or 2 acres, but no more than 10 acres for vegetation. Wetlands are mapped to 0.25 acres. The minimum width of polygons is generally no less than 30 feet (10 meters). Once the polygons are mapped, field reconnaissance surveys are performed to match aerial photograph analysis with the actual vegetation types on the ground.

The Natural Communities dataset includes only 31 of the individual VegCAMP mapping projects and a CDFW-created composite layer of the Central Valley. In areas of overlap between the individual mapping projects, only the dataset that used the most recent aerial imagery was included in the Natural Communities dataset.

CALVEG – CLASSIFICATION AND ASSESSMENT WITH LANDSAT OF VISIBLE ECOLOGICAL GROUPINGS, USDA FOREST SERVICE

Source link:

<https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192>

The United States Department of Agriculture (USDA) Forest Service Region 5 employs the CALVEG system to classify "existing vegetation". For classification of existing vegetation, a set of U.S. Forest Service standards and procedures has been established at the national and regional levels. The Region 5 CALVEG classification system conforms to the upper levels of the National Vegetation Classification Standard (USNVC) hierarchy as it currently exists (Federal Geographic Data Committee 2008). The USNVC sets guidelines for all federal agencies involved in this work. The CALVEG team's mission was to classify California existing vegetation communities for use in statewide resource planning considerations.

The CALVEG system maps large areas of the State with minimal bias and is supplemented with onsite field visits when appropriate. Map attributes consist of vegetation types using the CALVEG classification system and forest structural characteristics such as tree and shrub canopy cover and tree stem diameters.

The CALVEG dataset includes vegetation maps for almost 75% of California, with data available by ecoregion. The eleven CALVEG datasets were compiled for inclusion in the Natural Communities dataset, but were only used in areas not already mapped by VegCAMP due to its coarser mapping unit.

NWI V 2.0. – NATIONAL WETLANDS INVENTORY (VERSION 2.0.), UNITED STATES FISH AND WILDLIFE SERVICE

Source link: <https://www.fws.gov/wetlands/>

The purpose of NWI is to provide current, geospatially-referenced information of the status, extent, characteristics, and functions of wetland, riparian, deepwater, and related aquatic habitats in

priority areas to promote the understanding and conservation of these resources. These data delineate the areal extent of wetlands and surface waters as defined by the Federal Geographic Data Committee as a National Standard (FGDC-STD-004) in 2013, adapted and modified from Cowardin¹ et al. (1979). As part of the NWI, the USFWS has a program to map riparian vegetation in the arid regions of the United States (USFWS riparian data). The target mapping unit of the dataset is 0.5 acre.

The NWI database was used to map wetlands within the Natural Communities dataset. The NWI database was also used to map springs and seeps, but only in areas not already mapped by the National Hydrography Dataset or the Mojave Desert Springs Survey (described below). Similarly, the USFWS riparian data was only used in portions of Southern California not already mapped by VegCAMP or CALVEG data because the VegCAMP and CALVEG datasets are higher resolution than the USFWS riparian data.

FVEG – CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION, FIRE AND RESOURCES ASSESSMENT PROGRAM (CALFIRE FRAP).

Source link: http://frap.fire.ca.gov/data/frapgisdata-sw-fveg_download

The FVEG dataset was developed in coordination with the CDFW VegCAMP program and the USDA Forest Service Remote Sensing Laboratory to compile a best available land cover dataset. The data cover the entire State of California. The various data sources included in FVEG were standardized by reclassifying the various vegetation types using the California Wildlife Habitat Relationships (CWHR) system classification scheme. FVEG is a gridded dataset with 30-meter cells rather than polygons. The cells were converted to polygons for use in the Natural Communities dataset where applicable.

FVEG was only used in the Natural Communities dataset in areas not already mapped by VegCAMP, CALVEG, or USFWS riparian data.

UNITED STATES GEOLOGIC SURVEY (USGS) NATIONAL HYDROGRAPHY DATASET (NHD)

Source link: <https://nhd.usgs.gov/>

The National Hydrography Dataset (NHD), a component of [The National Map](#), represents the water drainage network of the United States with features such as rivers, streams, canals, lakes, ponds, coastline, dams, and stream gages. This high-resolution dataset is mapped at a scale of 1:24,000 or better. The NHD contains line features, area features, and point features.

For the Natural Communities dataset, the NHD was used to obtain point locations for springs and seeps. For consistency with the features included in the Natural Communities dataset, spring and seep point locations were buffered with a radius of 50 feet to create a polygon. In areas where NHD seeps and springs data overlapped with NWI wetland data, NHD data was used.

MOJAVE DESERT SPRINGS AND WATERHOLES (MOJAVE DESERT SPRING SURVEY)

Source link: <https://www.scienceforconservation.org/products/mojave-desert-spring-survey>

The Mojave Desert Spring Survey identified 437 springs within the Inyo, Kern, Los Angeles, and San Bernardino county portions of the Mojave Desert that were previously mapped by other agencies

and organizations. In 2015 and 2016, 312 of the springs were field inspected and the geographic coordinates were updated. For the 125 springs not field inspected, coordinates were refined using recent high-resolution imagery and/or reported coordinates used in BLM inspection reports. The refined geographic coordinates for each spring were published in a report of survey results.

For the Natural Communities dataset, the geographic locations included in the report were converted to a shapefile of point locations. For consistency with the features included in the Natural Communities dataset, the point locations were buffered with a radius of 50 feet to create a polygon.

The Mojave Desert Spring Survey dataset is included in the Natural Communities dataset in addition to the NHD and has the same order of preference as the NHD.

Processing & Quality Assurance

After the vegetation, wetland, seeps, and springs data described above were compiled into the Natural Communities dataset, data were screened to exclude vegetation and wetland types less likely to be associated with groundwater and retain types commonly associated with groundwater. The screening, which was conducted by DWR, CDFW, and TNC, was based on the criteria described below and in Klausmeyer et al. 2018.

VEGETATION LAYER

All water features were removed from the source vegetation datasets since water features are mapped in higher detail by NWI. The remaining vegetation alliances (VegCamp), vegetation types (CALVEG), and habitat types (FVEG) were classified by ecoregion and assigned a dominant species, where possible, based on vegetation alliance descriptions, field observations, and/or publications.

Subject matter experts then reviewed the combination of ecoregion location and dominant species names against published lists of phreatophytes to determine (1) if the dominant species was a listed phreatophyte, and if so, (2) was likely to be phreatophytic in that ecoregion or likely to rely on surface water, precipitation, or other non-groundwater sources. If multiple dominant species names were listed for a particular vegetation type, the first phreatophytic species listed was selected to represent the vegetation type. Vegetation alliances, vegetation types, and habitat types determined to be phreatophytic were retained.

For the more general vegetation types that did not have one dominant species, the source metadata and associated reports were reviewed to determine all dominant species associated with that vegetation type. If more than half of the dominant species consisted of phreatophytes, the vegetation type was retained. Broad vegetation categories that lacked supporting descriptions of associated species were not assigned a dominant species and further screened for association with highly disturbed or managed conditions, or likelihood of dependence on non-groundwater sources.

Riparian vegetation is considered to be phreatophytic; all USFWS Riparian Data were therefore retained in areas not already mapped by VegCAMP and CALVEG.

Additional screening was then conducted to retain source features of certain vegetation types located along alluvial floodplains, as well as to remove those located on hillslopes where they are more likely to rely on surface water, rainfall, and fog drip than on groundwater. The hillslope vegetation types include those with the dominant species *Carex barbarae*, *Juglans californica*, *Picea sitchensis*, *Pinus contorta*, *Quercus agrifolia*, or *Sequoia sempervirens*, as well as the “Desert Mixed Wash Shrub” vegetation type. The US Environmental Protection Agency (2013) maps of active river areas were used to clip these vegetation types to remove hillslope areas.

All mapped “Playa” features were also screened using recent high-resolution satellite imagery to remove source features without visible vegetation stands.

WETLANDS LAYER

All wetlands mapped in NWI were first screened based on their wetland classification. Marine and estuarine wetland types were excluded because the ocean is their main source of water. Although some estuarine habitats have documented groundwater inputs, estuarine wetlands were removed due to the level of uncertainty about the amount of groundwater input. All lacustrine wetlands were retained. Palustrine wetlands were also retained, with the exception of vernal pools that are not dependent on groundwater. Vernal pool complexes were screened based on specific wetland codes. Riverine wetlands representing perennial rivers and tidally-influenced freshwater rivers were retained, but intermittent streams were excluded due to uncertainty about which ones receive groundwater input. These retained wetland types were further screened to remove human modified wetlands. Human modified wetlands were identified with modifiers such as ‘Farmed’, ‘Diked/Impounded’, and ‘Artificially Flooded’.

Additional screening of the retained wetland types was conducted based on their water regime description. The remaining wetlands with water regimes of continuously or seasonally saturated; intermittently exposed; or permanently, semi-permanently, or seasonally flooded were retained. Wetlands with water regimes of intermittently, temporarily, or regularly flooded were excluded.

All seeps and springs, which are a surface expression of groundwater, were retained.

COMPILED NATURAL COMMUNITIES DATASET

Each data source was clipped to the Bulletin 118 Interim Update 2016 Groundwater Basin boundaries (i08_B118_CA_GroundwaterBasins) to remove polygons mapped outside of the groundwater basin boundaries. Any source features underlying agricultural areas identified in the 2014 statewide Crop Mapping data set released in 2017 (i15_Crop_Mapping_2014) were also removed from the Natural Communities dataset. With the exception of narrow riparian corridors, any source features underlying urban areas identified in a compilation of DWR County Land Use Surveys beginning in 2000 through 2014 and the 2014 US Department of Agriculture Cropland Data Layer were removed from Natural Communities dataset. In narrow riparian corridors located in mapped urban areas, source features underlying urban areas within 100 meters of rivers and waterbodies (as mapped in the NHDPlus V2 dataset) were retained.

Additional cursory screening was conducted for 135 individual groundwater basins. The purpose of the additional screening was to visually identify inaccuracies in the datasets. Natural communities that coincide with some of the following areas were removed during this review:

- Irrigated agricultural areas not captured in previous filtering steps
- Engineered water supply canals, aqueducts, ditches, or other conveyance facilities
- Reservoirs, stock ponds, and lakes engineered for water storage
- Heavily disturbed areas, such as quarries, gravel mining operations, and oil fields
- Managed recharge facilities
- Areas no longer in existence due to land use changes
- Areas where depth to groundwater is known to be too great to support phreatophytic vegetation
- Mapping artifacts

Some of the additional processing steps altered the geometry of the vegetation and wetland polygons to make them smaller than the minimum mapping unit for the source data set. All features remaining in the Natural Communities dataset that were smaller than the minimum mapping unit of the respective data source were removed. If no minimum mapping unit was published in the metadata or associated reports for the source data, a minimum mapping unit of 1,000 m² (~1/4 acre) was applied. In some cases, the source data included vegetation or wetland features smaller than the published minimum mapping unit. These features were retained in the Natural Communities dataset if they were identical to the polygon in the source dataset (i.e. they had not been modified by the processing steps listed above).

1.3 Natural Communities Online Web Viewer

DWR's [NC Dataset Viewer](https://gis.water.ca.gov/app/NCDataSetViewer), shown in Figure 1, provides efficient access to the Natural Communities dataset and related source datasets. The NC Dataset Viewer allows users to query the Natural Communities vegetation and wetland datasets as well as the source datasets used in the development of the Natural Communities dataset. The information displayed includes the dominant phreatophytic vegetation type or wetland description, including the primary source dataset for the feature and the year in which the data was developed (see Figure 2). Figure 3 illustrates the information displayed for the VegCAMP vegetation source dataset.

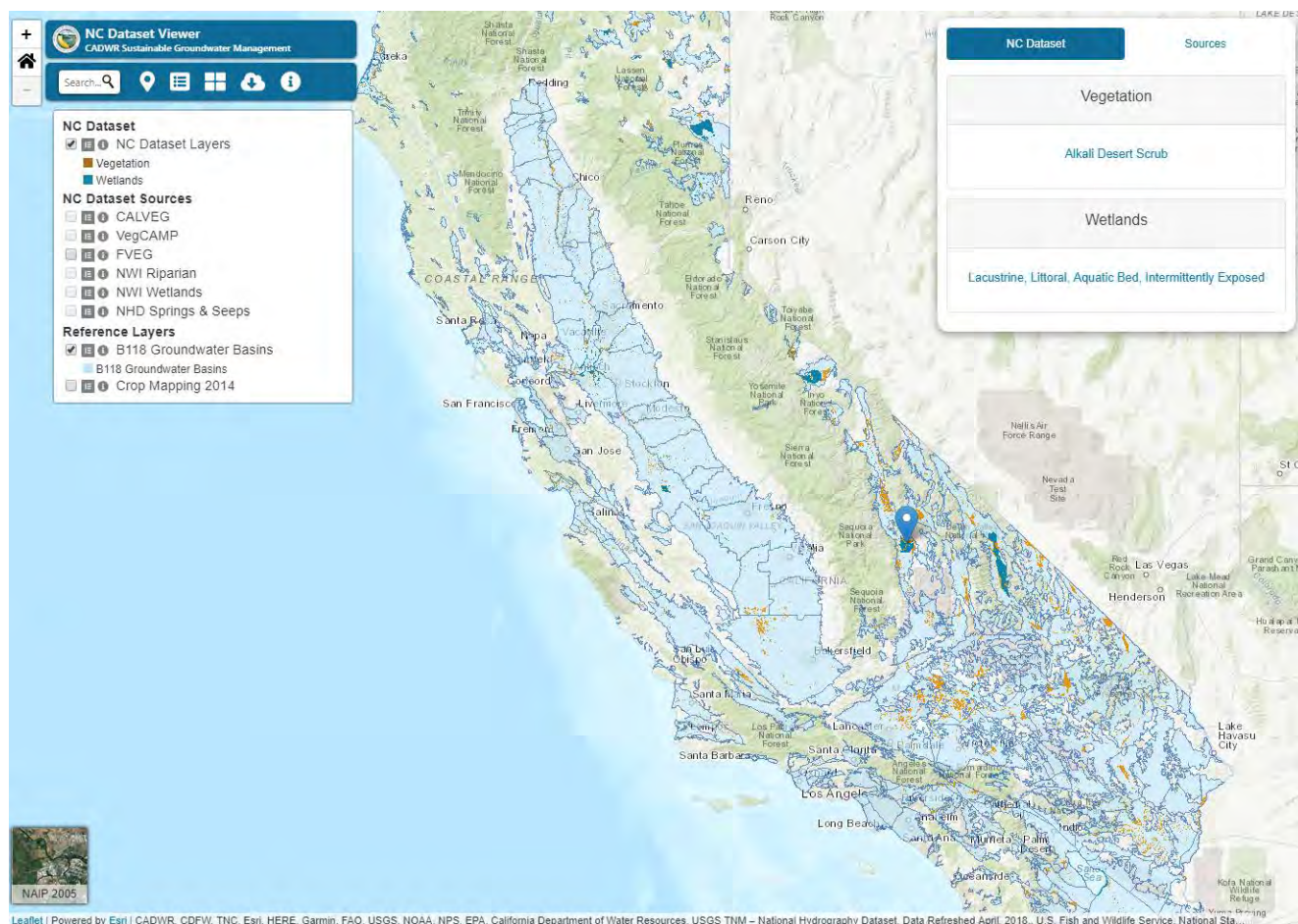


Figure 1. Natural Communities Online Web Viewer Screenshot (<https://gis.water.ca.gov/app/NCDataSetViewer>)

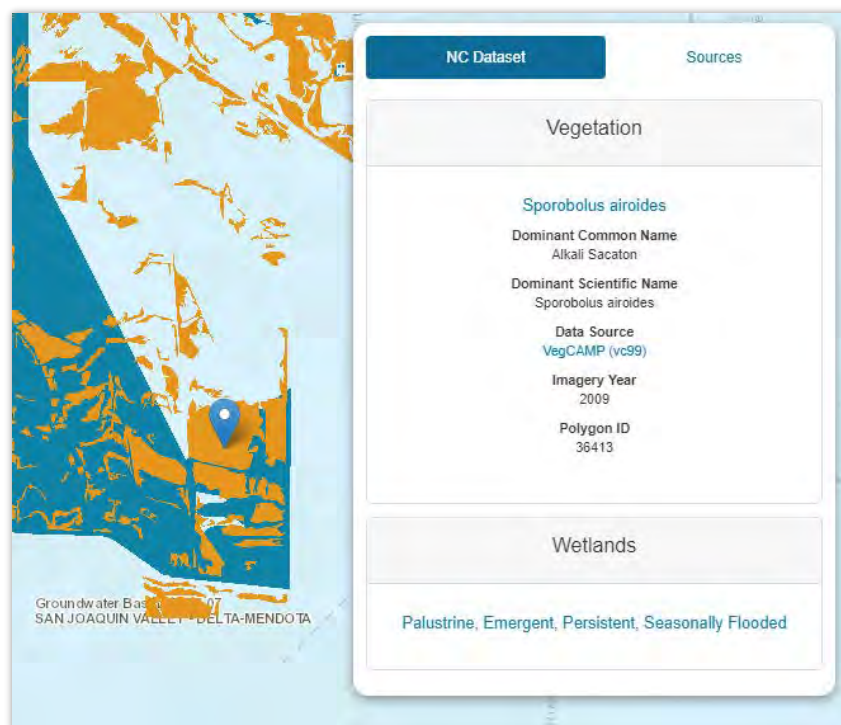


Figure 2 Natural Communities Dataset Query

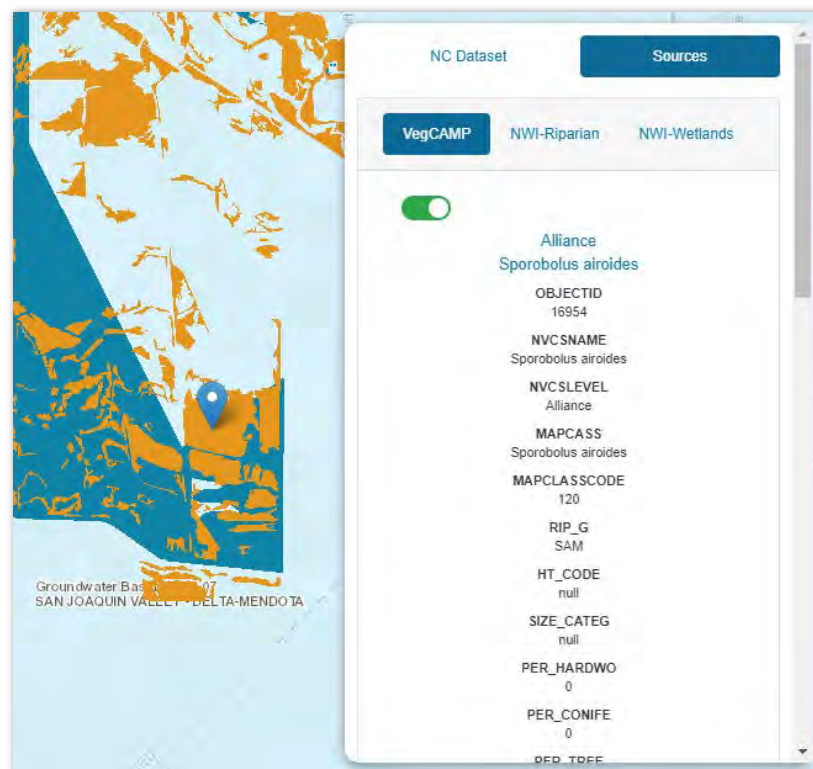


Figure 3 Natural Communities Source Dataset Query

Applicability of the Natural Communities Dataset to GSP Development

The Natural Communities dataset is provided by DWR as a reference dataset and potential starting point for the identification of GDEs in groundwater basins. The Natural Communities dataset and its source data can be reviewed by GSAs, stakeholders, and their consultants using local information and experience related to the validity of mapped features and understanding of local surface water hydrology, groundwater conditions, and geology as illustrated in Figure 4. Appendix A further discusses the requirements of SGMA and the GSP Regulations related to GDEs, environmental users of groundwater, and local habitat.

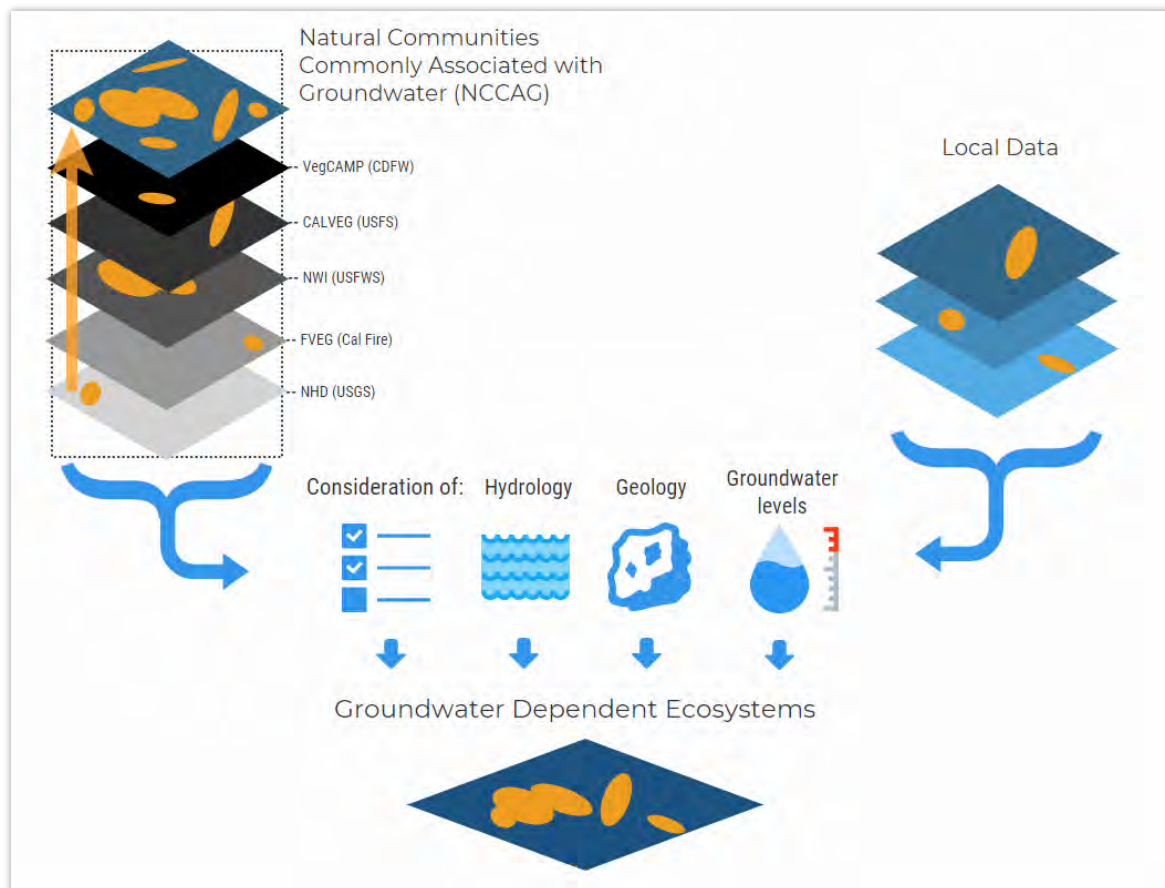


Figure 4. Considerations for the Identification of groundwater dependent ecosystems

The Natural Communities dataset does not prove or make any claim about the nature and/or extent of ecosystem groundwater dependence for any mapped location. Positive identification of a GDE requires understanding of the land use, groundwater levels, hydrology, and geology of an area, which is not within the scope or purpose of the dataset. The Natural Communities dataset and web viewer is not intended to be used for verifying the accuracy of the GSAs' identified GDEs.

References

- California Department of Fish and Wildlife. (2017). Vegetation Classification and Mapping Program. Retrieved April 14, 2017, from <https://www.wildlife.ca.gov/Data/VegCAMP>
- California Department of Forestry and Fire Protection. (2015). Fire and Resource Assessment Program (FRAP) Vegetation (FVEG15_1). Sacramento, California. Retrieved from http://frap.fire.ca.gov/data/frapgisdata-sw-fveg_download
- California Department of Water Resources. (2003). Bulletin 118 - California's Groundwater. Retrieved from <https://data.cnra.ca.gov/dataset/ca-bulletin-118-groundwater-basins>
- California Department of Water Resources. (2016). Bulletin 118, Interim Update 2016 - California's Groundwater, Working Toward Sustainability. Sacramento, California. Retrieved from https://www.water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/Statewide-Reports/Bulletin_118_Interim_Update_2016.pdf
- California Department of Water Resources. (2017). Statewide Urban Land Use (Unpublished). Sacramento, California.
- Cowardin, L. M., Carter, V., Golet, F. C., & LaRoe, E. T. (1979). Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service. FWS/OBS-79/31. Washington D.C. Retrieved from <https://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf>
- Federal Geographic Data Committee. (2013). Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Washington D.C. Retrieved from <https://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States-2013.pdf>
- Federal Geographic Data Committee. (2008). National Vegetation Classification Standard, Version 2. Vegetation Subcommittee. Retrieved from https://www.fgdc.gov/standards/projects/FGDC-standards-projects/vegetation/NVCS_V2_FINAL_2008-02.pdf.
- Klausmeyer, K., Howard J., Keeler-Wolf T., Davis-Fadtke K., Hull R., and Lyons A. (2018). Mapping Indicators of Groundwater dependent ecosystems in California
- Land IQ. (2017). Statewide Crop Mapping 2014. California Department of Water Resources. Retrieved from <https://gis.water.ca.gov/app/CADWRLandUseViewer/>
- Lichvar, R., & Dixon, L. (2007). Wetland Plants of Specialized Habitats in the Arid West. Hanover, NH. Retrieved from <http://www.dtic.mil/get-tr-doc/pdf?AD=ADA469459>
- Mathie, A. M., Welborn, T. L., Susong, D. D., & Tumbusch, M. L. (2011). Phreatophytic Land-Cover Map of the Northern and Central Great Basin Ecoregion: Ecoregion: California, Idaho, Nevada, Utah, Oregon, and Wyoming. U.S. Geological Survey Scientific Investigations Map 3169. Reston, Virginia. Retrieved from <http://pubs.usgs.gov/sim/3169>
- Robinson, T. W. (1958). Phreatophytes: U.S. Geological Survey Water Supply Paper 1423. Washington, D.C. Retrieved from <https://pubs.usgs.gov/wsp/1423/report.pdf>.
- U.S. Environmental Protection Agency, U.S. Geological Survey, & Horizon Systems. (2017). NHDPlus Version 2. Retrieved from http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php
- U.S. Fish and Wildlife Service. (2009). A System for Mapping Riparian Areas in the Western United States. Retrieved from <https://www.fws.gov/Wetlands/Documents/A-System-for-Mapping-Riparian-Areas-In-The-Western-United-States-2009.pdf>

U.S. Fish and Wildlife Service. (2016). National Wetland Inventory, Version 2. California Wetlands. Washington D.C. Retrieved from https://www.fws.gov/wetlands/Downloads/State/CA_wetlands.zip

U.S. Forest Service. (2016). Existing Vegetation - CALVEG. McClellan, CA. Retrieved from <http://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192>

U.S. Geological Survey. (2016). National Hydrography Dataset, High Resolution, v220. Washington D.C. Retrieved from ftp://nhdftp.usgs.gov/DataSets/Staged/States/FileGDB/HighResolution/NHDH_CA_931v220.zip

Appendix A

SGMA Requirements Related to GDEs

This section provides references to the requirements for GSAs and DWR related to identification of groundwater dependent ecosystems (GDEs) under SGMA and GSP Regulations.

Sustainable Groundwater Management Act (California Water Code Sections)

§ 10723.2 CONSIDERATION OF ALL INTERESTS OF ALL BENEFICIAL USES AND USERS OF GROUNDWATER

The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans. These interests include, but are not limited to, all the following:

...

(e) Environmental users of groundwater.

§ 10727.2. A GROUNDWATER SUSTAINABILITY PLAN SHALL INCLUDE ALL OF THE FOLLOWING:

(2) A description of how the plan helps meet each objective and how each objective is intended to achieve the sustainability goal for the basin for long-term beneficial uses of groundwater.

§ 10727.4. ADDITIONAL PLAN ELEMENTS

In addition to the requirements of Section 10727.2, a groundwater sustainability plan shall include, where appropriate and in collaboration with the appropriate local agencies, all of the following:

...

(l) Impacts on groundwater dependent ecosystems.

§ 10933. GROUNDWATER ELEVATION MONITORING; PRIORITIZATION OF BASINS BY THE DEPARTMENT

(b) The department shall prioritize groundwater basins and subbasins for the purpose of implementing this section. In prioritizing the basins and subbasins, the department shall, to the extent data are available, consider all of the following:

(8) Any other information determined to be relevant by the department, including adverse impacts on local habitat and local streamflows.

GSP regulations (California Code of Regulations Sections)

§ 351. Definitions

(m) "Groundwater dependent ecosystem" refers to ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface.

§ 353.2. Information Provided by the Department

(b) The Department shall provide information, to the extent available, to assist Agencies in the preparation and implementation of Plans, which shall be posted on the Department's website.

§ 354.14. Hydrogeologic Conceptual Model

(d) Physical characteristics of the basin shall be represented on one or more maps that depict the following:

(4) Delineation of existing recharge areas that substantially contribute to the replenishment of the basin, potential recharge areas, and discharge areas, including significant active springs, seeps, and wetlands within or adjacent to the basin.

§ 354.16. Groundwater Conditions

Each Plan shall provide a description of current and historical groundwater conditions in the basin, including data from January 1, 2015, to current conditions, based on the best available information that includes the following:

(g) Identification of groundwater dependent ecosystems within the basin, utilizing data available from the Department, as specified in Section 353.2, or the best available information.

Appendix B

Potential GDE Field Data Sheets

Potential GDE Field Assessment Datasheet

Date: 9/5/19

ID#: 01

Time: 7:47

Coordinates: 34.60577162, -118.66730126

Vegetation Community: pine forest

Dominants	Tree	Pine species (likely planted)
	Shrub	CA sagebrush
	Herbaceous	Bromus, avena, festuca
Native vs. non-native %		40/60
Potential Wetland		No
Spring/seep		No

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Silt, loam
Saturation	None

Species Information

Observed	Western scrub jay, CA towhee
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ coast horned lizard Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	---

Access: yes, on foot via dirt access road

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	Northwest 
Photo 2: Downstream	Southeast 

Potential GDE Field Assessment Datasheet

Photo 3: Across

South



Potential GDE Field Assessment Datasheet

Date: 9/5/19

ID#: 02

Time: 8:00

Coordinates: 34.60489688, -118.66472959

Vegetation Community:

Dominants	Tree	Pine (likely planted), tree-of-heaven
	Shrub	Felt-leaf yerba santa, CA sagebrush
	Herbaceous	Avena sp.
Native vs. non-native %		50/50
Potential Wetland		No, out of main channel and floodplain, possibly planted
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Loam
Saturation	none

Species Information

Observed	Western scrub jay, mourning dove, wrentit
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ coast horned lizard Birds ☒ rufous crowned sparrow Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	---

Access: yes, on foot via dirt access road

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	North  A photograph showing a dirt road that curves through a dry, hilly landscape. The terrain is covered with sparse, dry vegetation and some trees. A person is visible walking on the road in the distance. The sky is blue with scattered white clouds.
Photo 2: Downstream	South  A photograph showing a dirt road that curves through a dry, hilly landscape. The terrain is covered with sparse, dry vegetation and some trees. A person is visible walking on the road in the distance. The sky is blue with scattered white clouds.

Potential GDE Field Assessment Datasheet

Photo 3: Across

West



Potential GDE Field Assessment Datasheet

Date: 9/5/19
ID#: 03

Time: 8:10
Coordinates: 34.60207775, -118.66661481

Vegetation Community:

Dominants	Tree	Pine (likely planted)
	Shrub	CA sagebrush
	Herbaceous	Avena
Native vs. non-native %		30/70
Potential Wetland		No
Spring/seep		No

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Unknown
Saturation	Unknown, likely no

Species Information

Observed	Western scrub jay, Bewick's wren, house finch, wrentit, rock wren, CA quail, spotted towhee, American crow
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ coast horned lizard Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	---

Access: No, fenced off, steep hillside, no trespassing signs.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	South 
Photo 2: Downstream	South 

Potential GDE Field Assessment Datasheet

Date: 9/5/19
ID#: 04

Time: 8:15
Coordinates: 34.60185351, -118.66704698

Vegetation Community: Fremont's cottonwood forest

Dominants	Tree	Cottonwood, willow (unknown)
	Shrub	Mulefat
	Herbaceous	Unknown
Native vs. non-native %		Unknown, 80/20
Potential Wetland		Yes, in main channel
Spring/seep		No

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural

Soils:

Type – clay, silt, sand, gravel, etc.	Unknown
Saturation	Unknown

Species Information

Observed	none
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☒ arroyo toad Reptiles ☒ coast horned lizard Birds ☒ least Bell's vireo Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☒ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☒ Wildlife Habitat (WILD) ☒
---	---

Access: No, fenced and signs.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	South  A landscape photograph showing a valley with a stream, surrounded by mountains and trees. The foreground is filled with tall, dry grass. The middle ground features a stream flowing through a valley with scattered trees. The background shows rolling hills and mountains under a blue sky with some clouds.
Photo 2: Downstream	South  A landscape photograph showing a valley with a stream, surrounded by mountains and trees. The foreground is filled with tall, dry grass. The middle ground features a stream flowing through a valley with scattered trees. The background shows rolling hills and mountains under a blue sky with some clouds.

Potential GDE Field Assessment Datasheet

Date: 9/5/19

Time: 8:48

ID#: 05

Coordinates: 34.49704029, -118.61266316

Vegetation Community: Fremont's cottonwood forest

Dominants	Tree	Fremont's cottonwood, willow (unknown)
	Shrub	Mulefat
	Herbaceous	Unknown
Native vs. non-native %		80/20
Potential Wetland		Yes
Spring/seep		No

Hydrology:

Present (Flows/Ponded)	Yes, flows
Depth of surface water	1-4 inches
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Managed, overflow from Castaic Lagoon

Soils:

Type – clay, silt, sand, gravel, etc.	Unknown
Saturation	Yes, in upper reaches near Castaic Lagoon. Unknown downstream of that.

Species Information

Observed	none
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☒ arroyo toad Reptiles ☐ Click or tap here to enter text. Birds ☒ least bell's vireo Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☒ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☒ Wildlife Habitat (WILD) ☒
---	---

Access: No, fenced and signage.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	South  A photograph showing a dry, rocky landscape. In the foreground, there is a gravelly path or clearing. To the left, there is a dense, green shrub or small tree. To the right, there is a pile of large, light-colored rocks. In the background, there is a clear blue sky with some light clouds. A fence line is visible on the right side of the image.
---------------------------------	---

Potential GDE Field Assessment Datasheet

Date: 9/5/19
ID#: 06

Time: 9:24
Coordinates: 34.47893088, -118.60244920

Vegetation Community: coast live oak woodland

Dominants	Tree	Coast live oak
	Shrub	CA buckwheat, CA sagebrush
	Herbaceous	Avena, Bromus
Native vs. non-native %		70/30
Potential Wetland		No
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Sand
Saturation	None

Species Information

Observed	Western scrub jay, house finch
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ coast horned lizard Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	---

Access: Yes, couldn't gain access to upstream areas, private road and signage

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	East  A photograph showing a dry, sandy streambed with sparse, dry vegetation. In the background, there is a hill with some trees and a blue sky with scattered clouds. The streambed is composed of light-colored sand and small rocks, with some small pools of water visible.
Photo 2: Downstream	West  A photograph showing a stream flowing through a wooded area. The stream is surrounded by dense trees and shrubs, with a sandy bank visible in the foreground. The water is clear and flows over a sandy bed. The surrounding vegetation is lush and green.

Potential GDE Field Assessment Datasheet

Photo 3: Across

South



Potential GDE Field Assessment Datasheet

Date: 9/5/19
ID#: 07

Time: 11:01
Coordinates: 34.48136662, -118.67142041

Vegetation Community: Eucalyptus grove

Dominants	Tree	Eucalyptus, silver dollar
	Shrub	Oleander
	Herbaceous	None
Native vs. non-native %		0/100
Potential Wetland		No
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Loam, silt
Saturation	none

Species Information

Observed	American crow, bushtit
Special-status likely to occur: None	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☐ Click or tap here to enter text. Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☐
---	--

Access: Yes, private driveway

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	North 
Photo 2: Downstream	South 

Potential GDE Field Assessment Datasheet

Photo 3: Across

East



Potential GDE Field Assessment Datasheet

Date: 9/5/19

Time: 12:19

ID#: 08

Coordinates: 34.42664267, -118.58656119

Vegetation Community: Fremont's cottonwood forest

Dominants	Tree	Fremont's cottonwood, red willow
	Shrub	Giant reed, willow (arroyo, red)
	Herbaceous	Festuca sp.
Native vs. non-native %		90/10
Potential Wetland		Yes
Spring/seep		No

Hydrology:

Present (Flows/Ponded)	Yes, flows
Depth of surface water	6-12 inches
Source	natural runoff ☐ urban stormwater runoff ☒ treated wastewater effluent ☐ artificial sources ☒
Managed or natural flows	Managed, originates from upstream culvert from the south side of channel

Soils:

Type – clay, silt, sand, gravel, etc.	Unknown, likely loam, silt
Saturation	yes

Species Information

Observed	none
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☒ arroyo toad Reptiles ☐ Click or tap here to enter text. Birds ☒ least Bell's vireo Fish ☒ UTS Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☒ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☒ Wildlife Habitat (WILD) ☒
---	---

Access: yes, from the west side of The Old Road bridge crossing the river.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	East  A photograph showing a concrete bridge deck with yellow lane markings. In the background, there is a metal guardrail, dense green trees, and a green highway sign. The sky is blue with some light clouds.
Photo 2: Downstream	West  A photograph showing a dense thicket of green trees and shrubs. The foliage is thick and fills most of the frame. A small portion of a white structure is visible in the bottom right corner.

Potential GDE Field Assessment Datasheet

Photo 3: Across

North



Potential GDE Field Assessment Datasheet

Date: 9/5/19

Time: 12:47

ID#: 09

Coordinates: 34.42601271, -118.57898257

Vegetation Community: Fremont's cottonwood forest

Dominants	Tree	Fremont's cottonwood, willow (red)
	Shrub	Arundo, sandbar willow
	Herbaceous	White sweetclover
Native vs. non-native %		70/30
Potential Wetland		Yes
Spring/seep		No

Hydrology:

Present (Flows/Ponded)	Yes
Depth of surface water	6 inches
Source	natural runoff ☐ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☒
Managed or natural flows	Managed flows originating from upstream culvert

Soils:

Type – clay, silt, sand, gravel, etc.	Unknown, sand likely
Saturation	yes

Species Information

Observed	Red-shouldered hawk, red-tailed hawk
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☒ arroyo toad Reptiles ☐ Click or tap here to enter text. Birds ☒ least Bell's vireo Fish ☒ UTS Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

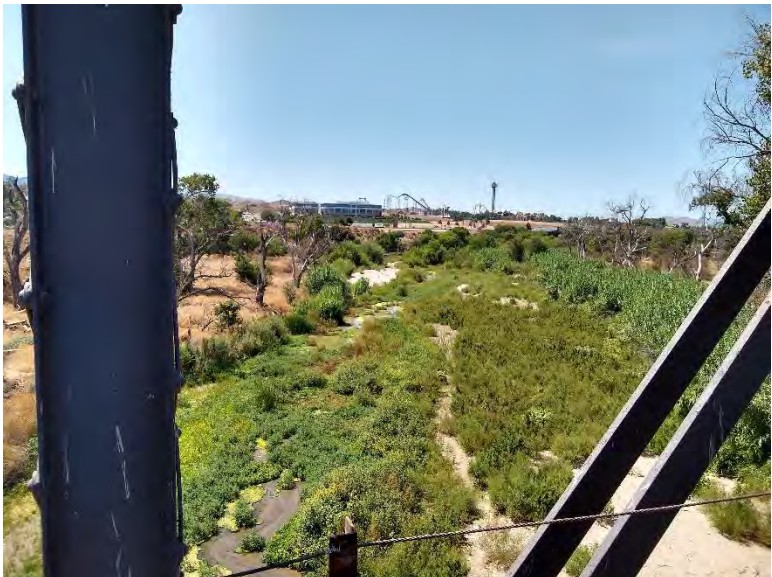
Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☒ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☒ Wildlife Habitat (WILD) ☒
---	---

Access: yes, from top of public bridge

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	East 
Photo 2: Downstream	West 

Potential GDE Field Assessment Datasheet

Photo 3: Across

Southwest



Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 7:10

ID#: 10

Coordinates: 34.42406756, -118.56550466

Vegetation Community: Fremont's cottonwood forest

Dominants	Tree	Fremont's cottonwood, black willow, arroyo willow
	Shrub	Arundo, mulefat, sandbar willow
	Herbaceous	Shortpod mustard
Native vs. non-native %		80/20
Potential Wetland		Yes
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	Yes, flow
Depth of surface water	1-2 feet
Source	natural runoff ☐ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☒
Managed or natural flows	Managed sources from upstream culvert

Soils:

Type – clay, silt, sand, gravel, etc.	Sand
Saturation	Yes, in portions of main channel

Species Information

Observed	Western scrub jay, house finch, cottontail
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☒ arroyo toad Reptiles ☒ coast horned lizard Birds ☒ least Bell's vireo Fish ☒ UTS Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☒ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☒ Wildlife Habitat (WILD) ☒
---	---

Access: yes, from trail that runs along river and bridge that crossed the river.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	East 
Photo 2: Downstream	West 

Potential GDE Field Assessment Datasheet

Photo 3: Across

North



Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 7:30

ID#: 11

Coordinates: 34.42389194, -118.56138119

Vegetation Community: mulefat thickets

Dominants	Tree	Fremont cottonwood
	Shrub	Mulefat, scalebroom
	Herbaceous	Shortpod mustard
Native vs. non-native %		80/20
Potential Wetland		No
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Sand
Saturation	No

Species Information

Observed	Western scrub jay
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ coast horned lizard Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	---

Access: Yes, from trail that runs along the river and bridge that crosses the river.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	East 
Photo 2: Downstream	West 

Potential GDE Field Assessment Datasheet

Photo 3: Across

North



Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 7:39

ID#: 12

Coordinates: 34.42329186, -118.55884619

Vegetation Community: Fremont's cottonwood forest

Dominants	Tree	Fremont's cottonwood
	Shrub	Mulefat, arundo
	Herbaceous	Shortpod mustard
Native vs. non-native %		80/20
Potential Wetland		Yes
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	Yes
Depth of surface water	Less than 6 inches
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows,

Soils:

Type – clay, silt, sand, gravel, etc.	Sand
Saturation	Yes, within main channel

Species Information

Observed	American crow, house finch, black phoebe, acorn woodpecker
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☒ arroyo toad Reptiles ☐ Click or tap here to enter text. Birds ☒ least Bell's vireo Fish ☒ UTS Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☒ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☒ Wildlife Habitat (WILD) ☒
---	---

Access: yes, from trail that runs along the river

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	East  A photograph showing an upstream view of a dry riverbed. On the right side, there is a concrete channel. The riverbed is composed of sand and gravel. In the background, there are several high-voltage power lines and towers. The sky is clear and blue, and the sun is visible in the upper left corner, creating a lens flare effect.
Photo 2: Downstream	West  A photograph showing a downstream view of a dry riverbed. On the left side, there is a concrete channel. The riverbed is composed of sand and gravel. On the right side, there is dense vegetation, including trees and shrubs. The sky is clear and blue.

Potential GDE Field Assessment Datasheet

Photo 3: Across	North  The photograph shows a wide, flat, sandy area with scattered low-lying shrubs and grasses. In the background, a dense line of green trees and bushes stretches across the horizon under a clear blue sky. The foreground is a light-colored, textured surface, possibly sand or dry earth, with some darker patches and faint tire tracks.
-------------------------------	---

Potential GDE Field Assessment Datasheet

Date: 9/6/19
ID#: 13

Time: 8:15
Coordinates: 34.42000984, -118.55112968

Vegetation Community: Fremont's cottonwood forest

Dominants	Tree	Fremont's cottonwood
	Shrub	Mulefat
	Herbaceous	Shortpod mustard
Native vs. non-native %		60/40
Potential Wetland		No
Spring/seep		No

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Sand
Saturation	No

Species Information

Observed	none
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ Click or tap here to enter text. Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	---

Access: Yes, on foot. Accessed via parking lot adjacent to baseball fields.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	East 
Photo 2: Downstream	West 

Potential GDE Field Assessment Datasheet

Photo 3: Across

South



Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 9:00

ID#: 14

Coordinates: 34.47418349, -118.46729076

Vegetation Community: Mulefat thicket - alluvial

Dominants	Tree	Fremont's cottonwood
	Shrub	Mulefat, red willow
	Herbaceous	Shortpod mustard
Native vs. non-native %		60/40
Potential Wetland		No
Spring/seep		No

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Sand
Saturation	No

Species Information

Observed	Mourning dove, black phoebe
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ coast horned lizard Birds ☐ Click or tap here to enter text. Fish ☒ known UTS habitat Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☒ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	--

Access: yes, on foot via public road

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	North 
Photo 2: Downstream	South 

Potential GDE Field Assessment Datasheet

Photo 3: Across

East



Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 9:14

ID#: 15

Coordinates: 34.47386557, -118.46397764

Vegetation Community: Ruderal with some cottonwoods

Dominants	Tree	Fremont's cottonwood, tree-of-heaven
	Shrub	Arundo
	Herbaceous	Bromus, shortpod mustard
Native vs. non-native %		20/80
Potential Wetland		No
Spring/seep		No

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows, floodplain

Soils:

Type – clay, silt, sand, gravel, etc.	Loam
Saturation	No

Species Information

Observed	Northern mockingbird, house finch
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☐ Click or tap here to enter text. Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	---

Access: yes, from public road. No direct access to polygon due to barbed wire fence.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	North 
Photo 2: Across	West 

Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 9:49

ID#: 16

Coordinates: 34.47187929, -118.45988401

Vegetation Community: Tamarisk stand (dry pond)

Dominants	Tree	Tamarisk, sandbar willow
	Shrub	Mulefat
	Herbaceous	Grasses, Russian thistle
Native vs. non-native %		50/50
Potential Wetland		Yes
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Loam/silt, cracked soils
Saturation	no

Species Information

Observed	Western scrub jay
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☒ western spadefoot Reptiles ☐ Click or tap here to enter text. Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☒ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☒ Wildlife Habitat (WILD) ☒
---	---

Access: yes, on foot, unsure of access

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	South 
Photo 2: Downstream	North 

Potential GDE Field Assessment Datasheet

Photo 3: Across

West



Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 10:36

ID#: 17

Coordinates: 34.47048730, -118.46882494

Vegetation Community: Fremont's cottonwood forest

Dominants	Tree	Fremont's cottonwood
	Shrub	CA sagebrush
	Herbaceous	Shortpod mustard, bromus
Native vs. non-native %		80/20
Potential Wetland		No
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Sand, loam
Saturation	no

Species Information

Observed	CA quail
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ coast horned lizard Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	---

Access: Yes, from public road.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	North 
Photo 2: Downstream	South 

Potential GDE Field Assessment Datasheet

Photo 3: Across

East



Based on Step 1.2, Characterize GDE Condition, of the GDE Guidance and Worksheet 2

Date: 9/6/19

Time: 11:14

ID#: 18

Coordinates: 34.43825710, -118.36826252

Vegetation Community: Fremont's cottonwood forest

Dominants	Tree	Fremont's cottonwood
	Shrub	Unknown
	Herbaceous	unknown
Native vs. non-native %		Unknown
Potential Wetland		Yes
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	Yes, flows
Depth of surface water	unknown
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	unknown
Saturation	Unknown, likely yes in main channel

Species Information

Observed	none
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☒ arroyo toad Reptiles ☐ Click or tap here to enter text. Birds ☒ least Bell's vireo Fish ☒ UTS Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Based on Step 1.2, Characterize GDE Condition, of the GDE Guidance and Worksheet 2

Human Alteration:

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☒ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☒ Wildlife Habitat (WILD) ☒
---	---

Access: no, locked gate and signage

Based on Step 1.2, Characterize GDE Condition, of the GDE Guidance and Worksheet 2

Photos

Photo 1: Upstream	South 
--------------------------	---

Potential GDE Field Assessment Datasheet

Date: 9/6/19
ID#: 19

Time: 11:17
Coordinates: 34.43843982, -118.37170292

Vegetation Community: Riversidean alluvial scrub

Dominants	Tree	None
	Shrub	CA buckwheat, scalebroom
	Herbaceous	Shortpod mustard, Avena sp.
Native vs. non-native %		70/30
Potential Wetland		No
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Unknown
Saturation	unknown

Species Information

Observed	CA thrasher
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ coast horned lizard Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	---

Access: no, fenced area, from paved road

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	North 
Photo 2: Downstream	South 

Potential GDE Field Assessment Datasheet

Photo 3: Across

West



Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 11:40

ID#: 20

Coordinates: 34.37976687, -118.40929012

Vegetation Community: Riversidean alluvial

Dominants	Tree	None
	Shrub	CA buckwheat, scalebroom
	Herbaceous	Shortpod mustard
Native vs. non-native %		80/20
Potential Wetland		No
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Sand
Saturation	no

Species Information

Observed	CA towhee
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ coast horned lizard Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	---

Access: Yes, on foot via public road.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	East  A photograph showing a dry, hilly landscape. The foreground is covered with sparse, dry vegetation and some small trees. In the background, there are rolling hills and mountains under a clear blue sky. The terrain appears to be a mix of dry grass and shrubs.
Photo 2: Downstream	West  A photograph showing a dry, hilly landscape from a different perspective. The foreground is covered with sparse, dry vegetation and some small trees. In the background, there are rolling hills and mountains under a clear blue sky. The terrain appears to be a mix of dry grass and shrubs.

Potential GDE Field Assessment Datasheet

Photo 3: Across

South



Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 12:15

ID#: 21

Coordinates: 34.40907520, -118.45914461

Vegetation Community: Southern willow scrub

Dominants	Tree	Red willow
	Shrub	Mulefat
	Herbaceous	None
Native vs. non-native %		100/0
Potential Wetland		Yes
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	Yes, flows
Depth of surface water	6-12 inches
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Sand, cobble
Saturation	yes

Species Information

Observed	Cooper's hawk
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☒ arroyo toad Reptiles ☐ Click or tap here to enter text. Birds ☒ least Bell's vireo Fish ☒ UTS Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☒ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☒ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☒ Wildlife Habitat (WILD) ☒
---	--

Access: Yes, on foot via dirt access road originating from Canyon Park Boulevard.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	South 
Photo 2: Downstream	West 

Potential GDE Field Assessment Datasheet

Photo 3: Across

Southwest



Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 12:28

ID#: 22

Coordinates: 34.40606270, -118.4583801

Vegetation Community: Eucalyptus grove

Dominants	Tree	Eucalyptus, pepper tree
	Shrub	Wattle
	Herbaceous	None
Native vs. non-native %		0/100
Potential Wetland		No
Spring/seep		no

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Unknown
Saturation	Unknown

Species Information

Observed	None
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☐ Click or tap here to enter text. Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.
None	

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☐
---	--

Access: No direct access, fenced. Access from the apartment complex to the east.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Downstream	North 
Photo 2: Across	West 

Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 12:40

ID#: 23

Coordinates: 34.37692235, -118.47120834

Vegetation Community: Coast live oak woodland

Dominants	Tree	Coast live oak, CA sycamore
	Shrub	Mulefat
	Herbaceous	Ripgut brome
Native vs. non-native %		70/30
Potential Wetland		No
Spring/seep		No

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Sand, loam
Saturation	No

Species Information

Observed	Acorn woodpecker
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ coast horned lizard Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	---

Access: Yes, on foot from Placerita Canyon Road.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	East  A photograph showing a dirt path leading up a hill, bordered by a chain-link fence. The path is flanked by dense green trees and shrubs. In the background, a prominent, rounded mountain peak is visible under a clear blue sky.
Photo 2: Downstream	West  A photograph showing a dirt path leading down a hill, bordered by a chain-link fence. The path is flanked by dense green trees and shrubs. A small, light-colored structure or gate is visible at the bottom of the path. The sky is clear and blue.

Potential GDE Field Assessment Datasheet

Photo 3: Across

Southwest



Potential GDE Field Assessment Datasheet

Date: 9/6/19

Time: 1:10

ID#: 24

Coordinates: 34.37798037, -118.49246228

Vegetation Community: Coast live oak woodland

Dominants	Tree	Coast live oak, willow (unknown), Fremont's cottonwood
	Shrub	Mulefat
	Herbaceous	Shortpod mustard
Native vs. non-native %		90/10
Potential Wetland		Yes
Spring/seep		No

Hydrology:

Present (Flows/Ponded)	No
Depth of surface water	N/A
Source	natural runoff ☒ urban stormwater runoff ☐ treated wastewater effluent ☐ artificial sources ☐
Managed or natural flows	Natural flows

Soils:

Type – clay, silt, sand, gravel, etc.	Sand, loam
Saturation	No

Species Information

Observed	Mourning dove
Special-status likely to occur	Insects ☐ Click or tap here to enter text. Amphibians ☐ Click or tap here to enter text. Reptiles ☒ coast horned lizard Birds ☐ Click or tap here to enter text. Fish ☐ Click or tap here to enter text. Mammals ☐ Click or tap here to enter text. Plants ☐ Click or tap here to enter text.

Human Alteration:

Potential GDE Field Assessment Datasheet

Beneficial uses (See RWQCB basin plan)	Agricultural Supply (AGR) ☐ Cold Freshwater Habitat (COLD) ☐ Commercial and Sport Fishing (COMM) ☐ Estuarine Habitat (EST) ☐ Freshwater Replenishment (FRSH) ☐ Ground Water Recharge (GWR) ☐ Hydropower Generation (POW) ☐ Industrial Process Supply (PROC) ☐ Industrial Service Supply (IND) ☐ Migration of Aquatic Organisms (MIGR) ☐ Municipal and Domestic Supply (MUN) ☐ Navigation (NAV) ☐ Non-contact Water Recreation (REC-2) ☐ Marine Habitat (MAR) ☐ Preservation of Biological Habitats (BIOL) ☐ Rare, Threatened, or Endangered Species (RARE) ☐ Spawning, Reproduction, and/or Early Development (SPWN) ☐ Warm Freshwater Habitat (WARM) ☐ Water Contact Recreation (REC-1) ☐ Wetland Habitat (WET) ☐ Wildlife Habitat (WILD) ☒
---	--

Access: Yes, from top of bank, SR-14 onramp ROW. Fenced off so inaccessible within the polygon.

Potential GDE Field Assessment Datasheet

Photos

Photo 1: Upstream	East  A photograph showing a dry, hilly landscape. In the foreground, there are low-lying, dry shrubs and a chain-link fence. The middle ground features a steep, sandy hillside with scattered green bushes and trees. In the background, more hills and mountains are visible under a clear blue sky.
---------------------------------	--